

## Testimony regarding Zoning Text Amendment 22-01

Please include this written testimony in the public record for this ZTA

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This package contains no matters of mere “concern” or any other non-substantive matter.

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<sup>1</sup> <https://www.regulations.gov/comment/FDA-2021-P-1347-0732>

<sup>2</sup> <https://www.fcc.gov/ecfs/search/search-filings/filing/1051759759289>

<sup>3</sup> [https://mdsafetech.org/wp-content/uploads/2022/07/Pittsfield-Civil-Action-Complaint-72822-w\\_-Cover-Sheet-7-28-22.pdf](https://mdsafetech.org/wp-content/uploads/2022/07/Pittsfield-Civil-Action-Complaint-72822-w_-Cover-Sheet-7-28-22.pdf)

<sup>4</sup> <https://ehtrust.org/wp-content/uploads/5G-and-Cell-Tower-Radiation-Briefing-1.pdf>

<sup>5</sup> <http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>

<sup>6</sup> Full report available for download at:

[https://www.europarl.europa.eu/RegData/etudes/STUD/2021/690012/EPRS\\_STU\(2021\)690012\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2021/690012/EPRS_STU(2021)690012_EN.pdf)

September 8, 2022

**Re: Racial Equity and Social Justice (RESJ) Zoning Text Amendment Statement on ZTA 22-01:  
Antenna on existing structure – use standards**

Dear Ms Tesfaye and Dr. Bonner-Tompkins,

cc: Chris Cihlar, Director, Office of Legislative Oversight (OLO)  
Tiffany Ward, Director, Office of Racial Equity and Social Justice

Thank you for preparing the recent RESJ impact statement for the proposed Zoning Text Amendment 22-01, published March 14, 2022<sup>1</sup> (the “Statement”). As you note, predicting the impact of zoning text amendments on RESJ can be a challenging endeavor.

Appreciating just how challenging and yet how critical a task you have undertaken, I ask you to consider the additional information and related analysis provided below and, based on your evaluation of this content, to revise the Statement accordingly. Your openness to such revision would be a model for both the Council and the general public as to how the consideration of RESJ impacts is an ongoing process, responsive to new evidence and community engagement. It would also underscore the importance of the mission entrusted to you.

The information below indicates that 22-01 would have a negative net impact on RESJ in our County, will not improve the digital divide (and potentially worsen it), and will cause significant adverse social justice impacts. In light of OLO’s position as legislative staff charged with assessing a proposal by a Council Committee chair, my hope is that this letter will prove a helpful source of information.

A public hearing is scheduled on this ZTA for September 13, 2022, so there is time to withdraw and reissue this statement with a negative net impact prior to any Council worksession on this ZTA.

In its current form, the Statement considers two dimensions of impact: (a) the digital divide, which it says may be improved and (b) health inequities, which may be worsened. But, it says, because the magnitude of the effect on each dimension cannot be quantified, it is difficult to “distinguish” the net impact. If after reading the contents of this letter you determine that 22-01’s ability to improve the digital divide in the County is either neutral or negative, then the net impact of 22-01 would be negative. (A neutral impact on one dimension and a negative impact on the second dimension is net negative, regardless of magnitude).

This letter is organized in 4 sections:

- 1) Conclusions on the digital divide relied almost entirely on industry-funded information
- 2) Evidence indicates 22-01 will not improve the digital divide, and if anything is likely to worsen it
- 3) The Statement does not consider social justice impacts on protected classes that would be disproportionately affected by reduced setbacks and resulting proliferation of antenna

- 4) Fact checking certain statements in the health inequities section that were either factually inaccurate or misleading

- 1) **Conclusions on the digital divide rely almost entirely on industry-funded information**

The Statement's conclusions regarding the digital divide are based almost exclusively on what the Statement calls "Research from the Brookings Institution". However this publication by Brookings is industry-funded, not independent analysis.

- a. **Brookings report was funded by T-Mobile.**

The report itself reads "Support for this publication was *generously* provided by T-Mobile."<sup>2</sup> [Emphasis added]

- b. **Brookings author was chair of an industry-funded organization**

The Brookings article was published by author Dr. Nicol Turner-Lee in 2019 (not 2022 as published in the Statement). According to her CV<sup>3</sup>, she was a board member beginning in 2014 of TPRC. According to the TPRC website, Dr. Turner-Lee was chair of its board from 2019 to 2021.<sup>4</sup> TPRC also lists on its website its top-tier funders during her time as chair, which included AT&T, T-Mobile, Verizon, and CTIA (Communications Technology Industry Association). According to its own website, CTIA is "the voice of America's wireless industry". It is often considered the most influential lobbyist on behalf of the wireless industry. In Montgomery County's lawsuit against the FCC and its Small Cell Order, CTIA filed a brief as an intervenor against the County<sup>5</sup>.

- c. **Brookings Institution has received significant industry funding**

Brookings donors include AT&T<sup>6</sup>, T-Mobile, Verizon, Google<sup>7</sup> (which runs a 5G wireless service called Google Fi that serves approximately 500,000 subscribers<sup>8</sup>). Between July 1 and December 31, 2019, the government of Germany, which is the largest beneficial owner of T-Mobile USA<sup>9</sup>, donated over \$2 million to Brookings.

- d. **T-Mobile stands to benefit financially from the passage of ZTA 22-01, and similar ordinances across the country for which it is advocating**

By expanding the number of poles available for antenna attachment, ZTA 22-01 would save T-Mobile and other wireless carriers a significant amount on site fees. Historically, wireless carriers would contact a landowner and negotiate payment to rent space for an antenna on the landowner's property. This was the case with larger "macro towers", as well as rooftop antenna (in which case the carrier pays the building owner a rental fee for space on the rooftop). While carriers have claimed that they need access to public rights-of-way in order to allow for densification, in practice we have not seen that to be the case in Montgomery County. Instead, many of the applications to attach wireless facilities to utility poles are directly in front of or adjacent to locations where carriers would have previously had to pay rental fees. Take for example 8000 Flower Ave in Takoma Park.<sup>10</sup> This location is surrounded by R-40, R-30 and R-10 residential zoning<sup>11</sup>. However in the 8000 block, there is a small shopping center, with a dry cleaners and a barber shop. In the past, T-Mobile would have had to pay rent rental fees to the shopping center's landlord to put an antenna on the rooftop. However, after the passage of prior small cell ZTAs 18-02 and 19-07, T-Mobile's contractor applied to attach

an antenna to a utility pole in front of the shopping center, just 62 feet from a home. FCC has preempted and prohibited local government from charging fees for this real estate; instead the County can only charge up to its actual out-of-pocket administrative costs for processing permits (although the County approved a fee schedule earlier this year with fees significantly below its costs, meaning taxpayers are now subsidizing these deployments<sup>12</sup>). These cost-based fees are below the fair market rates that T-Mobile and other carriers would pay to property owners.

OLO should not rely upon industry-funded materials for this or any other assessment. If OLO cannot find any independent, unbiased information, then its assessment could report that to the Council. In circumstances where OLO believes it is necessary and unavoidable to cite industry-funded information, OLO should clearly disclose the funding source behind the analysis and consider the influence of such conflicts of interest in its assessment.

**2) Evidence indicates 22-01 will not improve the digital divide, and if anything is likely to worsen it**

The digital divide can be looked at on two dimensions: a) access to connectivity, and b) the affordability of that connectivity. First consider (a), access.

Connectivity at home is quite different than mobile wireless access outside the home. 22-01 deals only with residential neighborhoods, and therefore only affects access in the home. As the Statement points out, the percentage of homes with wired broadband in Montgomery County across all cited ethnicities is quite high. To measure access, the important but missing data point is the percentage of homes passed with wired broadband, broken down by ethnicity (“passed” means that the service is available to that home). Homes that are not passed by wired broadband is an urgent problem that the County should be and is focused on to ensure broadband providers provide wired access to all locations, much as the rural telephone program did decades ago. Assuming that the number of homes subscribing to broadband (which is what the Statement cited) is less than the number passed, then the real problem for the digital divide in Montgomery County is affordability, not access.

If it were the case that there is a disparity by race or ethnicity among homes in the County not passed by wired broadband, what is the basis for concluding that carriers would prioritize these areas for small cell wireless deployments? Council staff acknowledged this issue in 2021 with respect to ZTA 19-07; 22-01 is no different.<sup>13</sup> Telecom carriers would be expected to act rationally and prioritize installing antennas in locations likely to generate the highest return on capital, where customers can afford the most expensive new services.

Angela Siefer, executive director of the National Digital Inclusion Alliance (which represents over 850 affiliates in 48 states)<sup>14</sup>, testified to the U.S. Congress in 2020 on this topic. She noted that in previous telecom deployments, low-income areas are usually where the coverage gaps are and “there is no reason to think 5G will be any different.” She was incredibly clear in her



assessment: “The excitement around 5G has led to claims 5G will solve the digital divide. It will not.”<sup>15</sup>

Now consider (b), affordability. Wireless Internet is and has always been far more expensive than wired Internet. Wireless data in the US costs between \$3 and \$8 per gigabyte, depending on the information source<sup>16</sup>. Wired data costs less than \$0.09 per gigabyte, assuming an average wired data plan of \$50 per month<sup>17</sup> and the average family of four using 536 GB per month<sup>18</sup>. Therefore mobile wireless is between 33 and 89 times more expensive than wired broadband.

In addition, wired connections typically do not have data caps or throttling, a practice by which wireless carriers advertise unlimited data but “throttle”, or reduce, users to a lower speed after reaching a data cap. (In 2019, AT&T paid a \$60 million FTC fine for not disclosing its throttling policy<sup>19</sup>.) As data usage over a wired connection increases, the average cost per gigabyte continues to decrease. This has been especially important since covid-19 began. Nationally, as users rely increasingly on connectivity at home for all of the uses pointed out by OLO – such as social services, healthcare, education and employment – household data usage since the pre-pandemic level has increased by 56%, and by 264% in the previous four years.<sup>20</sup>

In other words, a telecom strategy for the County that forces lower-income users to rely on mobile wireless at home would actually worsen the digital divide. Whereas a household with wired broadband can continue to increase its daily usage without any incremental cost out of pocket (zero marginal cost), a user reliant on a smartphone or mobile wireless hotspot for Internet access will face constant marginal cost, and therefore linearly increasing total cost.

OLO has staff who perform economic impact statements who could include an analysis of the negative economic impact on low income populations of the foregoing pricing dynamics. The higher cost of wireless data may be even further exacerbated by the fact that lower-income smartphone users are more likely to have “prepaid” plans, which often have a higher cost per gigabyte than “postpaid” or contract plans. Higher-income users who may have higher credit scores can obtain lower, postpaid pricing.<sup>21</sup> Consider the financial analogy of bank lending: those with the best credit scores can borrow at lower rates, and those with no credit may have no choice but payday lending at high interest rates.

In summary, expecting expensive new small cell deployments to solve the digital divide is a bit like saying that “Lexus lanes” for only \$90 round-trip daily<sup>22</sup> will provide a quick way of commuting to work for low-income commuters. Expensive new telecom services may be welcomed by those who can afford them, but the Statement does not provide data to support the idea that 22-01 would improve the digital divide.

**3) The Statement does not consider social justice impacts on protected classes that would be disproportionately affected by reduced setbacks and resulting proliferation of antenna**

Footnote 1 of the Statement cites a definition of “racial equity and social justice”. However the glossary cited does not contain a definition of social justice; the term “social justice” does not appear on this webpage.<sup>23</sup>

The Council adopted a definition of social justice when it passed bill 27-19<sup>24</sup>, which established the requirement for RESJ impact statements. The definition in the County code section 2-81C includes other areas of RESJ not yet addressed by the Statement<sup>25</sup>:

*Social justice* means that everyone deserves to benefit from the same economic, political and social rights and opportunities, **free from health disparities**, regardless of **race, socioeconomic status, age, sex** – including on the basis of gender identity or orientation, religion, **disability, or other characteristics**. [Emphasis added]

Several protected classes would be severely and disproportionately impacted by ZTA 22-01, as described below. Note that 22-01 not only reduces proximity, but is intended to increase proliferation of antennae, and in turn dramatically increase radiofrequency density in residential neighborhoods. The PHED Committee legislative attorney estimated approximately 32,435 poles are located 30 to 60 feet from homes, which would almost double the 33,368 poles located 60 feet or more from homes<sup>26</sup>

- a. **Socioeconomic status and other characteristics.** Those living on smaller plots of land or in homes in closer proximity to public rights-of-way would be more adversely affected than those living on larger plots of land with greater setbacks from the public rights-of-way. “Other characteristics” can be construed in this context to include environmental justice. Should residents living on smaller plots of land or in multi-family dwellings with shorter setbacks from public rights-of-way be subjected to different environmental or health disparities? In a study by Santini, those living 10 meters or less (approximately 33 feet, which is similar to the setback proposed under 22-01) suffered higher rates of fatigue, headache, depression, difficulties concentrating, skin problems, and dizziness, compared to those living more than 10 meters away.<sup>27</sup>
- b. **Age.** Children suffer particular effects of radiofrequency emissions<sup>28</sup>. The American Academy of Pediatrics acknowledges that children are “disproportionately” vulnerable to cell phone radiation, the same kind of radiofrequency emissions emitted by cell towers.<sup>29</sup> Researchers at the Environmental Working Group, a respected nonprofit, have called for child exposure levels 200-400 times lower than the current FCC limits.<sup>30</sup> The bones of children's skulls are not as fully developed as adults, leaving their developing brains more vulnerable.<sup>31</sup> The US Court of Appeals for the DC Circuit, in its *EHT et al. v. FCC* remand last year, ordered FCC to consider the effects of radiofrequency emissions on children<sup>32</sup> – something the FCC has not yet done and no federal agency has ever done.
- c. **Sex.** Women have been reported to suffer disproportionate effects of cell tower emissions. In the Santini study, women living near cell towers were much more likely to report adverse health outcomes than men. Women living closer to cell towers were 3 times more likely than men to suffer headaches, 2.7 times more likely to experience depression, and 83% more likely to suffer visual disturbances. In addition, women living 10 meters or less (approximately 33 feet, which is similar to the setback proposed under 22-01) from a cell tower experienced statistically significant higher rates of adverse

effects than those 300 meters or more.<sup>33</sup> In addition, research has examined adverse effects of electromagnetic fields on pregnant women and their unborn children.<sup>34</sup>

- d. **Disability.** EMS disabled persons would be disproportionately adversely affected, which would constitute a violation of the ADA.

22-01 creates two violations:

- (i) 22-01 would cause medical harm to tens of thousands of residents; and
- (ii) 22-01 does not contain any provision for advance notice of a deployment so that affected residents can arrange for reasonable accommodation under the ADA. Note that in a similar situation of deploying smart meters on residential properties, Maryland law requires utilities to provide a means for ratepayers to opt out of smart meters as a mechanism for reasonable accommodation for the EMS disabled.

Electromagnetic sensitivity (EMS) has long been recognized as a medical condition and afforded ADA protections.<sup>35</sup> The Access Board, a US federal agency that promotes equality for persons with disabilities<sup>36</sup>, expressly recognized EMS as a disability in a 2002 report. They wrote:

*“The Board recognizes that multiple chemical sensitivities **and electromagnetic sensitivities** may be considered disabilities under the ADA if they so severely impair the neurological, respiratory or other functions of an individual that it substantially limits one or more of the individual’s major life activities. The Board plans to closely examine the needs of this population, and undertake activities that address accessibility issues for these individuals.”*

For more information, see a filing by advocates for the EMS disabled in response to an FCC notice of inquiry *Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination*.<sup>37</sup> It documents, among other aspects, recognition for EMS disability in the United States, Canada, the European Parliament, Australia, France, Spain, and the United Kingdom.

A peer-reviewed study estimated the prevalence of EMS among the general population to be as high as 30% for mild symptoms, with 0.65% of the population suffering symptoms severe enough to restrict their access to work locations due to electromagnetic radiation.<sup>38</sup> These data suggest cell towers closer to homes, enabled by 22-01, could result in adverse health outcomes in up to 30% of the population, and cause a constructive eviction in 0.65% of the population – this is approximately 7,000 people in Montgomery County alone being forced to flee their homes. The reality of constructive eviction is not hypothetical – a group of Pittsfield, Massachusetts residents are currently litigating their constructive evictions after a cell tower was erected in their neighborhood.<sup>39</sup> The vulnerable population of the EMS disabled is typically already restricted from work environments, public spaces, and in some cases access to medical care, due to high radiofrequency emissions levels. Placing a cell tower 30 feet from the home of an EMS disabled person, which is often their only remaining refuge from public spaces increasingly flooded with high density radiofrequency, is inhumane and a violation of the ADA. I encourage OLO to read the recent administrative filings with FCC on behalf of the EMS disabled.<sup>40</sup>

- e. **Race.** Negative health effects from radiofrequency radiation could worsen health disparities by race and ethnicity in our County. In addition to some of the reasons mentioned in the Statement, here are a few additional to note. Communities of color may have a higher proportion of residents who: (i) are more likely to live in closer proximity to public rights-of-way (see section 3a above), and in turn could experience disproportionate health impacts resulting from radiofrequency radiation; (ii) have less readily available housing alternatives or financial resources than other groups to move to a home in a less urban environment (for example for an EMS disabled person to move to a different home, or parents to move to protect their child); and (iii) experience a worsening of existing health disparities (for example, the Statement cites existing disparities by race in the County in heart disease and breast cancer mortality rates; research continues to emerge studying the effects of radiofrequency radiation as a factor in these conditions<sup>41</sup>).

#### 4) **Fact checking certain statements in the health inequities that were either factually inaccurate or misleading**

Note: excerpts below from the Statement shown in italics with comments in plain text.

- a) *“But, **if** the reduced setback requirements for small cell towers authorized under ZTA 22-01 results in negative health outcomes, this in turn could widen health disparities by race and ethnicity.”* [Emphasis added]

The word “if” is inaccurate and misleading in this context, and should be replaced with the word “because”. A more accurate sentence would be:

But because the reduced setback requirements for small cell towers authorized under ZTA 22-01 will result in negative health outcomes for a significant proportion of those living in close proximity to towers, this in turn could widen health disparities by race, ethnicity, age, sex, socioeconomic status, and other characteristics.

See social justice section above and further explanation in section 4b below.

- b) *“There is no consensus among researchers regarding the health and environmental impacts of expanding 5G technology by reducing setbacks.”*

The Statement is asserting a threshold test: in order to estimate impact, there must be a “consensus among researchers”. While this might seem reasonable at first, it’s actually quite a high bar to achieve, particularly in the context of a massive information campaign funded by an industry seeking to avoid regulation. No US government agency has ever determined that cell towers are safe, much less near homes.<sup>42</sup> An FDA attorney wrote earlier this year that “the Food and Drug Administration (FDA) does not regulate cell towers or cell tower radiation. Therefore, FDA has no studies or information on cell towers.”<sup>43</sup> Groups of Montgomery County residents have pointed out issues with the Council’s reliance on inaccurate characterizations of FDA positions.<sup>44</sup>

Industry executives often become political appointees who run agencies such as FCC, HHS, and FDA.<sup>45</sup> At the same time, these agencies have never conducted the kind of systematic review of

the evidence that could lead to a government consensus statement at the federal level. A systematic review 15 years ago found that 82% of radiofrequency studies that were independently funded or funded by governments found health effects from mobile phones. However only 33% of studies funded by industry found such effects.<sup>46</sup> Funding poor quality studies to muddy the waters is a well-worn playbook from the tobacco industry – OLO can read further about it in the 2010 book *Merchants of Doubt*.<sup>47</sup>

While the US federal bureaucracy has remained paralyzed and mired in conflicts of interest, the World Health Organization's International Agency for Research on Cancer (IARC) classified radiofrequency emissions as a group 2B carcinogen<sup>48</sup> (along with DDT and lead<sup>49</sup>), in 2011, over 10 years ago. As was argued in *EHT et al. v. FCC*, if IARC were to conduct its review today, taking into account the evidence of the past 10 years, the currently available evidence meets the criteria to be upgraded to a group 2A carcinogen. In fact, scientists who participated in the IARC 2011 review have since published in the peer-reviewed literature that radiofrequency emissions should be upgraded to a class 1 carcinogen<sup>50</sup> (the highest possible rating<sup>51</sup>). In this context, a number of medical associations, state governments, other countries, and transnational authorities have issued consensus statements recognizing health effects.<sup>52</sup>

- c) *"The potential health effects of reducing setbacks to expand 5G technology and its probable impact on health inequities remains unknown."*

See Santini study, endnote 27, finding that health effects increase with proximity, as well as a number of additional references below.<sup>53</sup> A more accurate sentence would be:

"The magnitude of impact on health inequities resulting from health effects of reduced setbacks, which would increase the number of small cells and radiofrequency emissions density in residential neighborhoods, remains hard to quantify."

- d) *"Various research studies link radiation emitting from cell phone towers to a number of health **concerns** that include miscarriages, suppressed immune function, and childhood leukemia."*[Emphasis added]

The word "concerns" in this context is misleading, potentially discriminatory, and often used by industry to gaslight persons who are suffering these health effects (as documented by licensed doctors), in an attempt to avoid liability and regulation. "Concerns" should be deleted and replaced with the word "effects".

- e) *"A recent appeals court decision, however finds that the Federal Communications Commission's (FCC) claims about the health and environmental impacts of 5G technology are **insufficient**."*[Emphasis added]

The word "insufficient" in this context is inaccurate and misleading. This word should be replaced with the word "illegal". The court wrote "we merely conclude that the [FCC]'s cursory analysis of material record evidence was insufficient as a matter of law." In other words, the analysis that the FCC undertook was insufficient to meet the standard required, under the Administrative Procedures Act, in order to draw a conclusion, or a claim. As a result, it is inaccurate to say the "claim" was insufficient; rather, the court ruled that the claim was illegal

because it was based on insufficient analysis, and there was no “reasoned explanation” for FCC's conclusions.

- f) *“If ZTA 22-01 helps to narrow the digital divide in Internet access as noted above, it could expand access to telehealth medicine that in turn could help narrow health disparities by race and ethnicity”.*

I urge you to delete this sentence from the report because, as documented in section 1 above, it is based on industry marketing assertions, and as noted in section 2 above, there is no evidence to suggest the 22-01 will help narrow the digital divide. While the sentence may technically be true, it's akin to saying “if bags of gold were to rain down upon low-income residents, it would expand their access to telehealth medicine.” The premise of the sentence is so unlikely as to make the suggestion of positive impact that follows out of place in an assessment of legislative impact. Hypothetically, even if the predicate were true in certain, limited circumstances, there is no assessment of the relative effect sizes: on the one hand, increased access to telehealth and on the other hand, negative effects from radiofrequency emissions. It's also worth noting that telehealth is readily available over wired broadband connections, which are faster, more stable, more secure, have a lower carbon footprint, and are far more resilient during inclement weather, than wireless.

According to HHS, even during heightened covid restrictions, only about one quarter of medical visits were done via telehealth.<sup>54</sup> It seems unreasonable to conclude that the benefits of perhaps several telehealth visits per year outweigh the negative impacts of 24/7, involuntary irradiation. By analogy, in considering net impact, no one would argue that in the case of residents living immediately adjacent to the Beltway who inhale higher levels of air pollution 24/7, the net impact of air pollution on these residents is positive because when they develop asthma, COPD, or lung cancer at higher rates, they are able to access the Beltway and drive to the hospital more easily. Instead we require pollution mitigation measures, such as setbacks from the interstate and vehicle emissions limits. That kind of common sense is sorely needed when it comes to the regulation of wireless facilities.

As the scope and impact of OLO's work continues to expand, so too does the scrutiny of such work. No doubt this scrutiny will continue to increase with the coming introduction of climate impact statements. I hope that, in the face of outside pressure, OLO will strive to maintain its independence, as congressional agencies at the federal level, such as CBO and GAO, have done in maintaining their reputations for reliable, nonpartisan, unbiased analysis.

Thank you for your consideration of revisions to the Statement. If you would like additional information or to talk with people with expertise on the topics raised in this letter, please contact me.

Sincerely,

Robert Janku  
Montgomery County resident

## References

- <sup>1</sup> <https://www.montgomerycountymd.gov/OLO/Resources/Files/resjis/ZTA/2022/ZTA22-01.pdf>
- <sup>2</sup> <https://www.brookings.edu/research/enabling-opportunities-5g-the-internet-of-things-and-communities-of-color/>
- <sup>3</sup> [https://www.brookings.edu/wp-content/uploads/2016/11/turner\\_lee\\_cv\\_december-2016.pdf](https://www.brookings.edu/wp-content/uploads/2016/11/turner_lee_cv_december-2016.pdf)
- <sup>4</sup> <http://www.tprcweb.com/past-board-members>
- <sup>5</sup> <https://cdn.ca9.uscourts.gov/datastore/opinions/2020/08/12/18-72689.pdf>
- <sup>6</sup> [https://www.brookings.edu/wp-content/uploads/2022/02/brookings\\_contributorslist\\_fy2022.pdf](https://www.brookings.edu/wp-content/uploads/2022/02/brookings_contributorslist_fy2022.pdf)
- <sup>7</sup> <https://www.brookings.edu/wp-content/uploads/2020/04/The-Brookings-Institutions-Contributors-List-Fiscal-Year-2020.pdf>
- <sup>8</sup> <https://www.fiercewireless.com/operators/google-fi-runs-tv-ads-6-local-markets>
- <sup>9</sup> The government of Germany owns approximately 32% of Deutsche Telekom, which in turn owns approximately 65% of T-Mobile USA, which translates to Germany having a beneficial ownership of approximately 21%.  
[https://en.wikipedia.org/wiki/Deutsche\\_Telekom](https://en.wikipedia.org/wiki/Deutsche_Telekom)  
[https://en.wikipedia.org/wiki/T-Mobile\\_US](https://en.wikipedia.org/wiki/T-Mobile_US)  
[https://www.brookings.edu/wp-content/uploads/2022/02/brookings\\_contributorslist\\_fy2022.pdf](https://www.brookings.edu/wp-content/uploads/2022/02/brookings_contributorslist_fy2022.pdf)  
<https://finance.yahoo.com/quote/TMUS/holders?p=TMUS>
- <sup>10</sup> <https://montgomerycountytfcg.s3.amazonaws.com/Applications/MC2021101591+Application+and+Report.pdf>
- <sup>11</sup> <https://mcatlas.org/zoning/>
- <sup>12</sup> <https://montgomerycountymd.gov/COUNCIL/Resources/Files/agenda/col/2022/20220118/testimony/item5-SuePresent.pdf>
- <sup>13</sup> The Council legislative Attorney wrote: "ZTA 19-07 does not, however, guarantee equitable access. As with all zoning provisions, ZTA 19-07 does not mandate where small cell antennas must be provided."  
[https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210727/20210727\\_4D.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210727/20210727_4D.pdf)
- <sup>14</sup> <https://www.digitalinclusion.org/affiliates/>
- <sup>15</sup> <https://docs.house.gov/meetings/IF/IF16/20200129/110416/HHRG-116-IF16-Wstate-SieferA-20200129.pdf>
- <sup>16</sup> <https://thetechtician.com/cost-of-1gb-of-data-around-the-world/>  
<https://www.statista.com/statistics/994913/average-cellular-data-price-per-gigabyte-in-the-us/>
- <sup>17</sup> <https://www.reviews.org/internet-service/how-much-do-internet-and-wi-fi-cost/>
- <sup>18</sup> [https://openvault.com/wp-content/uploads/2022/03/OVBI\\_4Q21\\_Report\\_FINAL-1.pdf](https://openvault.com/wp-content/uploads/2022/03/OVBI_4Q21_Report_FINAL-1.pdf)
- <sup>19</sup> <https://www.fiercewireless.com/regulatory/at-t-settles-ftc-unlimited-data-throttling-lawsuit-for-60m>
- <sup>20</sup> See figure 9  
[https://openvault.com/wp-content/uploads/2022/03/OVBI\\_4Q21\\_Report\\_FINAL-1.pdf](https://openvault.com/wp-content/uploads/2022/03/OVBI_4Q21_Report_FINAL-1.pdf)
- <sup>21</sup> This article notes " If the recession continues to affect more people, there could be some migration from postpaid to prepaid, out of financial necessity."  
<https://www.fiercewireless.com/wireless/lowenstein-what-s-roadmap-for-prepaid-united-states>
- <sup>22</sup> <https://www.washingtonpost.com/transportation/2021/11/18/maryland-beltway-270-toll-rates/>
- <sup>23</sup> <https://www.racialequitytools.org/glossary>
- <sup>24</sup> <https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/RacialEquity/Bill27-19.pdf>
- <sup>25</sup> [https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco\\_md/0-0-0-118171](https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md/0-0-0-118171)
- <sup>26</sup> See page 3, "setback"  
[https://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2021/20210310/20210310\\_PHED2.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2021/20210310/20210310_PHED2.pdf)
- <sup>27</sup> See Table 1  
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- <sup>28</sup> <https://ehtrust.org/research-on-childrens-vulnerability-to-cell-phone-radio-frequency-radiation/>
- <sup>29</sup> <https://ehtrust.org/wp-content/uploads/American-Academy-of-Pediatrics-Letters-to-FCC-and-Congress-.pdf>
- <sup>30</sup> <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-021-00768-1>
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<sup>32</sup> [https://www.cadc.uscourts.gov/internet/opinions.nsf/FB976465BF00F8BD85258730004EFD7/\\$file/20-1025-1910111.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/FB976465BF00F8BD85258730004EFD7/$file/20-1025-1910111.pdf)

<sup>33</sup> See Table 2

<https://www.tandfonline.com/doi/abs/10.1081/jbc-120020353>

<sup>34</sup> Impacts of smartphone radiation on pregnancy: A systematic review

[https://www.cell.com/heliyon/fulltext/S2405-8440\(22\)00203-1#secsectitle0050](https://www.cell.com/heliyon/fulltext/S2405-8440(22)00203-1#secsectitle0050)

<sup>35</sup> The ADA definition of a disability is an "impairment that substantially limits one or more major life activities of such individual".

<https://www.law.cornell.edu/uscode/text/42/12102>

<sup>36</sup> <https://www.access-board.gov/about/>

<sup>37</sup> See PDF page 19 <https://www.fcc.gov/ecfs/search/search-filings/filing/1051759759289>

<sup>38</sup> <https://www.omegaonline.org/article-details/The-Prevalence-of-People-With-Restricted-Access-to-Work-in-Man-Made-Electromagnetic-Environments/2402>

<sup>39</sup> <https://mdsafetech.org/wp-content/uploads/2022/07/Pittsfield-Civil-Action-Complaint-72822-w-Cover-Sheet-7-28-22.pdf>

<sup>40</sup> See entire filing for a description of this issue. Beginning on page 26, written testimony of individuals harmed by cell towers being constructed in close proximity to their homes:

<https://www.fcc.gov/ecfs/search/search-filings/filing/1051759759289>

Additional comments of the EMS disabled:

<https://www.fcc.gov/ecfs/search/search-filings/filing/10701619226145>

<sup>41</sup> Cardiovascular disease: Time to identify emerging environmental risk factors

<https://journals.sagepub.com/doi/full/10.1177/2047487317734898>

The Association Between Smartphone Use and Breast Cancer Risk Among Taiwanese Women: A Case-Control Study

<https://pubmed.ncbi.nlm.nih.gov/33149685/>

US National Toxicology Program (NTP, an interagency research program by FDA, CDC, and NIH, located in Montgomery County) found "clear evidence", the highest rating on their 4-point scale, for malignant cancer of the heart in male rats:

<https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html#studies>

<sup>42</sup> See summary on page 3:

<https://ehtrust.org/wp-content/uploads/5G-and-Cell-Tower-Radiation-Briefing-1.pdf>

<sup>43</sup> [https://ehtrust.org/wp-content/uploads/FCC\\_FDA-Communications-FCC-Lawyer-and-Mother-on-Cell-Tower-Radiation-.pdf](https://ehtrust.org/wp-content/uploads/FCC_FDA-Communications-FCC-Lawyer-and-Mother-on-Cell-Tower-Radiation-.pdf)

<sup>44</sup> <https://www.regulations.gov/comment/FDA-2021-P-1347-0732>

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<sup>46</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1797826/>

<sup>47</sup> [https://en.wikipedia.org/wiki/Merchants\\_of\\_Doubt](https://en.wikipedia.org/wiki/Merchants_of_Doubt)

<sup>48</sup> [https://www.iarc.who.int/wp-content/uploads/2018/07/pr208\\_E.pdf](https://www.iarc.who.int/wp-content/uploads/2018/07/pr208_E.pdf)

<sup>49</sup> [https://en.wikipedia.org/wiki/IARC\\_group\\_2B](https://en.wikipedia.org/wiki/IARC_group_2B)

<sup>50</sup> <https://ehtrust.org/world-health-organization-scientists-recommend-wireless-be-upgraded-for-cancer-causing-effects/>

<sup>51</sup> [https://wiki.cancer.org.au/policy/IARC\\_classifications](https://wiki.cancer.org.au/policy/IARC_classifications)

<sup>52</sup> <https://ehtrust.org/science/medical-doctors-consensus-statements-recommendations-cell-phoneswireless/>

<sup>53</sup> European Parliament:

<https://ehtrust.org/the-european-parliament-panel-health-impact-of-5g/>

New Hampshire commission report:

<http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>

US National Toxicology Program, an interagency research program by FDA, CDC, and NIH, located in Montgomery County:

<https://ehtrust.org/science/the-niehs-national-toxicology-program-study-on-cell-phone-radiation-and-cancer-2018-update-resources/>



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Selected other research:

[https://ehtrust.org/wp-content/uploads/EHT-5G-Health-and-Environment-Open-Letter-3\\_2021-3.pdf](https://ehtrust.org/wp-content/uploads/EHT-5G-Health-and-Environment-Open-Letter-3_2021-3.pdf)

<sup>54</sup> <https://aspe.hhs.gov/sites/default/files/documents/4e1853c0b4885112b2994680a58af9ed/telehealth-hps-ib.pdf>

## Legal analysis of wireless zoning and ZTA 22-01 under the Telecommunications Act

### Montgomery County was not and is not required to adopt ZTA 19-07 or 22-01 in order to comply with federal law

- During the deliberations for ZTA 19-07, the Council inaccurately characterized *City of Portland v. FCC*<sup>1</sup> with respect to the effective prohibition standard of wireless services.
  - Re: Section 253 of the Telecommunications Act, the Ninth Circuit upheld FCC orders regarding shot clocks and fees with respect to processing applications
  - Re: Section 332, *City of Portland* did not address or alter municipalities' rights to determine location of towers. For this section, the Fourth Circuit (whose rulings govern in Maryland) has defined effective prohibition as a total lack of coverage, which is not our situation in Montgomery County, where we already have extensive 4G and 5G coverage (see *Cellco v. Board of Supervisors of Fairfax County*<sup>2</sup>).
  - The Fourth Circuit's *Cellco* definition of effective prohibition is a much more difficult standard to demonstrate. The Fourth Circuit ruled "a plaintiff's burden of proof on the prohibition of service claim is substantial and is particularly heavy" and requires meeting a two-part test: a) an "effective absence of coverage" and b) a lack of "reasonable alternative sites". The court wrote: "even if [the carrier's] maps demonstrate some gap in 4G LTE wireless and data coverage, they do not meet Verizon's heavy burden of demonstrating an effective absence of all forms of coverage."
- A recent case in the Second Circuit, *Extenet v. Flower Hill*, upheld a local government's decision to block deployment of a network of small cells.
  - *Flower Hill* took an even stricter textual interpretation of the Telecommunications Act's effective prohibition standard, which was a much higher hurdle than the "material inhibition" standard proposed by FCC.
  - *Flower Hill* goes a step further and rejects the idea that all telecommunications services are protected from effective prohibition by section 253. It cites *Sprint v. Willoth* (Second Circuit 1999), which found that effective prohibition applied only to the ability of a wireless telephone to make a phone calls to a landline. In other words, sections 253 and 332 protect voice service only, but not data or data speeds. The federal judge in *Flower Hill* cited *Clear Wireless* 2012: "it is not up to the FCC to construe the Act to say something it does not say, nor up to the Court to find broadband communication encompassed by the law."
- Montgomery County is not and was not vulnerable to liability for "a lot of money" if it failed to adopt these ZTAs, as some of Councilmembers have claimed. The Supreme Court ruled in 2005 that localities cannot be fined or liable for money damages for failing to deploy a cell tower.<sup>3</sup>

### The Council likely has more latitude to consider health effects than Councilmembers claim

- Wireless carriers have asserted that "environmental effects" includes "health effects", however this has not been tested in court.<sup>4</sup> Courts have issued decisions based on "potential" health effects or "concerns" about health effects, but not on imminent or actual effects.<sup>5</sup>
- The Pittsfield, Massachusetts Board of Health recently ordered Verizon to take down a tower after it sickened local residents. Verizon responded by suing the Board of Health. After the Mayor refused to provide legal counsel, the Board of Health rescinded the order due to lack of

legal representation. A group of residents is now suing the mayor for this decision. The lawsuit lays out the legal basis for state law protecting the Board of Health's ability to protect residents' safety, notwithstanding the Telecom Act.<sup>6</sup> the Montgomery County Council, separate from its powers as the District Council deciding zoning matters, sits as Montgomery County's Board of Health and has fiduciary duties to its residents in its capacity as the Board of Health.

- The implications of *Environmental Health Trust et al. v. FCC* (DC Circuit 2021) may afford localities significant, additional latitude in limiting small cell deployments. Montgomery County in its original lawsuit against the FCC made the case against FCC attempting to force small cell deployments prior to FCC determining that these deployments are safe<sup>7</sup>. *City of Portland* dismissed this lawsuit because the FCC had closed its notice of inquiry regarding radiofrequency exposure limits. Given that the DC circuit subsequently ruled that closing the notice of inquiry was an illegal violation of the Administrative Procedures Act, Montgomery County's original petition against the FCC is more relevant than ever. Councilmembers have significant latitude to protect public safety, and at the moment, have no federal assessment of safety data to rely upon.

#### **The Council likely has more latitude to consider environmental effects than Councilmembers claim**

- Title 47 Section 332 of the US Code<sup>8</sup> says local governments may not "regulate the placement" of cell towers based on environmental effects of radiofrequency emissions, which is based on the premise that the FCC complies with environmental protection law before it seeks to preempt local zoning authority.
  - However, in 2019 the U.S. Court of Appeals for the D.C. Circuit in the *Keetoowah* case found that FCC violated federal law (the APA) by failing to justify its assertion that "small cell" wireless facilities "pose little to no environmental risk".<sup>9</sup> The court held that the FCC acted in an arbitrary and capricious manner and that FCC's "public interest analysis did not meet the standard of reasoned decisionmaking." Although almost three years have passed since that decision, FCC has not provided any analysis of the environmental effects of small cell networks or of their cumulative effects.
  - Given that the DC circuit ruling in *Environmental Health Trust et al. v. FCC*, ruled that closing the notice of inquiry was an illegal violation of the Administrative Procedures Act, Councilmembers may have significant latitude to protect the environment.

## References

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<sup>1</sup> <https://cdn.ca9.uscourts.gov/datastore/opinions/2020/08/12/18-72689.pdf>

<sup>2</sup> <https://cite.case.law/f-supp-3d/140/548/>

<sup>3</sup> <https://www.supremecourt.gov/opinions/04pdf/03-1601.pdf>

<sup>4</sup> See petition for certiorari arguing the legal case that environmental effects do not include health effects:

[https://www.supremecourt.gov/DocketPDF/21/21-](https://www.supremecourt.gov/DocketPDF/21/21-629/196710/20211025140205639_Santa%20Fe%20Alliance%20Petition.pdf)

[629/196710/20211025140205639\\_Santa%20Fe%20Alliance%20Petition.pdf](https://www.supremecourt.gov/DocketPDF/21/21-629/196710/20211025140205639_Santa%20Fe%20Alliance%20Petition.pdf)

<sup>5</sup> Maryland is located in the Fourth Circuit of the federal appeals courts. This court has ruled against using "potential" health effects, or "concerns" about health effects as a basis for rejecting a permit; however that does not preclude placement decisions based upon actual health effects, known harms, or imminent harms.

<https://www.courtlistener.com/opinion/626095/t-mobile-northeast-llc-v-city-of-newport-news/>

<sup>6</sup> [https://mdsafetech.org/wp-content/uploads/2022/07/Pittsfield-Civil-Action-Complaint-72822-w\\_-Cover-Sheet-7-28-22.pdf](https://mdsafetech.org/wp-content/uploads/2022/07/Pittsfield-Civil-Action-Complaint-72822-w_-Cover-Sheet-7-28-22.pdf)

<sup>7</sup> <https://ehtrust.org/wp-content/uploads/Montgomery-County-Brief-on-Merits-filed-6-10-2019.pdf>

<sup>8</sup> <https://www.law.cornell.edu/uscode/text/47/332>

<sup>9</sup> <https://docs.fcc.gov/public/attachments/DOC-359025A1.pdf>

## 2022 Election: Montgomery County, MD

### County Council Candidate Pledge Regarding Wireless Facilities

#### **CONTEXT**

- Montgomery County's public rights-of-way are uniquely valuable public resources, closely linked with the character, civic identity, and natural beauty of all County neighborhoods, including those with single-family and multifamily homes.
- The County authorizes wireless carriers to make additions and modifications to infrastructure and to construct and operate wireless facilities in these public rights-of-way, on school campuses, and on top of residential and other buildings.
- Transparency and active engagement with residents are integral to ensuring the safety of these activities, the preservation of residential neighborhoods, and compliance with applicable requirements.
- The passage of zoning text amendments (ZTA) 18-02<sup>1</sup> and 19-07<sup>2</sup> has severely restricted residents' rights and dramatically reduced setbacks and other protections that, taken together, will increase adverse impacts, such as needless proliferation of obtrusive or incommodious wireless facilities.

#### **PLEDGE: If elected, I pledge, to the fullest extent of my powers in office, to prioritize the interests of County residents by:**

- **Co-sponsoring** Council action to immediately halt implementation of ZTA 19-07 and return the zoning code to the provisions in place prior to the adoption of 19-07 on July 27, 2021.
- **Opposing** the proposed ZTA 22-01<sup>3</sup>, which would worsen the impacts of ZTA 19-07.
- **Convening** a working group of residents and other stakeholders that will present recommendations to the Council for updating zoning, regulations, and fees for wireless facilities in the County. A majority of the working group will be residents, independent health and environmental-science experts, and qualified outside legal counsel with expertise in protecting residents' interests and the County's autonomy over zoning in light of federal law. County executive branch would provide technical and staff support.
- **Co-sponsoring** regulatory improvements based upon input from the working group that will minimize, to the extent possible, adverse impacts of wireless facilities and infrastructure.
- **Requiring** proposals related to wireless facilities undergo environmental impact assessment.
- **Supporting** policies that ensure wireless facilities do not violate County requirements.

I affirmatively sign the foregoing pledge to residents of Montgomery County. I have received a copy of the attached background information.

## **Background Information**

### **Zoning Text Amendments relating to “small” wireless facilities**

- On July 27, 2021, the Council approved Zoning Text Amendment (ZTA) 19-07, which enables deployment of telecommunications towers in County rights-of-way in residential and agricultural zones. These zones include most single-family homes and many (if not most) multifamily dwellings in the County.
- On May 15, 2018, the Council approved ZTA 18-02, which allowed similar deployments in commercial and mixed commercial/residential zones, with the placement of towers just 10 feet from existing buildings (including homes and schools).
- Montgomery County was not required to adopt these ZTAs in order to comply with federal law:
  - Montgomery County is not and was not vulnerable to liability for “a lot of money” if it failed to adopt these ZTAs, as some have claimed. The Supreme Court ruled in 2005 that localities cannot be fined or liable for money damages for failing to deploy a cell tower.<sup>4</sup>
  - The attached comparison table summarizes key areas in which 19-07 is more permissive, with towers much closer to homes, than FCC guidelines.
- Both of these ZTAs were passed without input from the Office of the People’s Counsel (OPC), a required step to amend the zoning code.<sup>5</sup> OPC was created to “protect the public interest” in zoning matters.<sup>6</sup> The Council had previously defunded OPC and voted again on May 11, 2022 to withhold funding.<sup>7</sup>

### **Recent federal court decisions regarding FCC**

- On August 13, 2021, the U.S. Court of Appeals for the D.C. Circuit ruled in favor of *Environmental Health Trust et al.*<sup>8</sup>, as follows:
  - The Federal Communications Commission (FCC) violated federal law (the Administrative Procedures Act, or APA) by failing to provide a “reasoned explanation” for deciding that its wireless radiation exposure limits do not need updating, even though these limits have not been reviewed since 1996.
  - The Food and Drug Administration (FDA) has not provided an “articulation of the factual... bases” for its conclusions, which “represent[s] a failure by the FDA”, and therefore the FCC cannot rely upon FDA webpage FAQs on cell phone safety.
  - All other expert agencies in the federal government have been silent on the question of safety, and “silence does not even indicate whether the expert agencies... considered any of the evidence”.
  - The Court ordered FCC to “provide a reasoned explanation for its decision” and to address the impacts of RF radiation on children and the environment. FCC has not yet complied with this order.
- Additional background regarding the *EH Trust* decision:
  - Petitioners submitted over 11,000 pages of scientific evidence indicating health effects of wireless radiation exposure at levels below FCC’s current limits.
  - FCC is required to set exposure limits to protect public health, but it is not a health agency and relies on other expert agencies’ analyses (which have not been done).
  - FDA acknowledges that it has not made any determination about the safety of cell towers.<sup>9,10</sup>
- Title 47 Section 332 of the US Code<sup>11</sup> says local governments may not “regulate the placement” of cell towers based on environmental effects of radiofrequency emissions, which is based on the

premise that the FCC complies with environmental protection law before it seeks to preempt local zoning authority.

- However, in 2019 the U.S. Court of Appeals for the D.C. Circuit in the *Keetoowah* case found that FCC violated federal law (the APA) by failing to justify its assertion that “small cell” wireless facilities “pose little to no environmental risk”.<sup>12</sup> The court held that the FCC acted in an arbitrary and capricious manner and that FCC’s “public interest analysis did not meet the standard of reasoned decisionmaking.” Although almost three years have passed since that decision, we are not aware of FCC having provided any analysis of the environmental effects of small cell networks or of their cumulative effects.
- Wireless carriers have asserted that “environmental effects” includes “health effects”, however this has not been tested in court. Courts have issued decisions based on “potential” health effects or “concerns” about health effects, but not on imminent or actual effects.<sup>13</sup> There is an open legal question about this assertion.<sup>14</sup>

### **Wireless facilities’ regulatory compliance in the County**

- The County has been approving wireless transmission facilities on rooftops of multifamily residential buildings since at least 1996, as far back as its public database is available. Many of these multifamily homes provide relatively affordable housing in our high-priced County.
- Residents have brought to the attention of the County’s Transmission Facilities Coordination Group (also known as the Tower Committee) errors in many applications for wireless facilities. For example, in 2020, residents pointed out to the Committee an apparent pattern of errors relating to the underreporting of expected levels of exposure to wireless radiation. This pattern affected at least 25 sites, including nine residential buildings and two County high schools.<sup>15</sup> All had been favorably recommended by the Committee before the errors were discovered, requiring the Committee to seek corrections and re-consideration.
- Applicants’ own estimates often predict that their antennae on top of residential buildings will generate levels of exposure to wireless radiation in certain areas atop the building and/or over the sides that will exceed federal exposure limits for the general public, sometimes by dozens of times.<sup>16</sup> In one example, the maximum anticipated level of exposure in one area on the rooftop was predicted to be as high as 114 times FCC limits.<sup>17</sup>
- The Tower Committee does not include any resident representatives, nor are residents permitted to speak at its meetings.
- The County currently has no policy or procedure to ensure that, after installation, wireless facilities – whether in rights-of-way, on school property, on private property, or on buildings – comply with County requirements and do not exceed FCC exposure limits, even when applications anticipate exceeding those limits.

**Comparison between FCC guidelines and recent zoning changes adopted by the Council**  
**For Residential and Agricultural Zones**

<b>Topic</b>	<b>Description</b>	<b>FCC guideline</b>	<b>ZTA 19-07 &lt; 30 feet from homes<sup>18</sup></b>	<b>ZTA 19-07 ≥ 30 feet from homes<sup>19</sup></b>
Setbacks	Minimum distance from a dwelling (previously 300 feet)	• No requirement or specific guidance	• Allowed	• Allowed
Shot clock	Number of days to process an application to install a small cell tower	• 90 days, or longer if needed <sup>20</sup>	• 90 days	• 90 days
Notice	Whether notice of an application is sent to nearby residents	• Allowed	• Sent to property owners within 300 feet	• Eliminated
Hearing process	Administrative hearing to consider applications and hearing examiner autonomy	• Permitted at any distance	• Eliminated hearing examiner ability to reject an application	• Eliminated
Appeals	Ability for residents to appeal a hearing decision	• Allowed	• Eliminated	• Eliminated
Measurement	Ensuring compliance with FCC radiofrequency exposure limits	• Allowed	• None	• None
Fees	Amount County may charge the applicant for use of the County right-of-way <sup>21</sup>	• Can recover all costs	• \$2600	• \$690
Aesthetics	Ability of Counties to specify the visual look of cell towers	• Allowed	• Hearing examiner minimal latitude	• Same color as pole
Antenna size	Maximum size of a “small cell” antenna, less than 50 feet from the ground	• 3 cubic feet		• 6 cubic feet
Liability	Antenna owner responsible for liability arising from its deployment	• Allowed		• No requirement

Note: Table above summarizes the changes enacted by ZTA 19-07, which amended the zoning code section 59-3.5.2; this summary does not capture all aspects of a complex zoning code, nor does it reflect the applicability of section 59-3.5.14, which is the subject of a proposed ZTA 22-01 (see endnote 3).



## References

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- <sup>1</sup> [https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/zta/2018/20180515\\_18-44.pdf](https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/zta/2018/20180515_18-44.pdf)
- <sup>2</sup> [https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/zta/2019/20210727\\_19-17.pdf](https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/zta/2019/20210727_19-17.pdf)
- <sup>3</sup> [https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2022/20220215/20220215\\_3C.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2022/20220215/20220215_3C.pdf)
- <sup>4</sup> <https://www.supremecourt.gov/opinions/04pdf/03-1601.pdf>
- <sup>5</sup> See Zoning Ordinance, Appendix B, section 2(a)  
[https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco\\_md\\_zone2014/0-0-0-64694](https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md_zone2014/0-0-0-64694)
- <sup>6</sup> [https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco\\_md/0-0-0-1897](https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md/0-0-0-1897)
- <sup>7</sup> PHED Committee recommended withholding OPC funding:  
[https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2022/20220511/20220511\\_36.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2022/20220511/20220511_36.pdf)  
Full Council adopted this recommendation without discussion:  
<https://www.youtube.com/watch?v=hrdi8QFDKK4>  
Recommendation shown on the summary for that Council meeting:  
<https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/agenda/col/2022/20220511/summary-20220511.pdf>
- <sup>8</sup> [https://www.cadc.uscourts.gov/internet/opinions.nsf/FB976465BF00F8BD85258730004EFD7/\\$file/20-1025-1910111.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/FB976465BF00F8BD85258730004EFD7/$file/20-1025-1910111.pdf)
- <sup>9</sup> See letter dated January 11, 2022, from FDA Center for Devices and Radiological Health  
[https://ehtrust.org/wp-content/uploads/FCC\\_FDA-Communications-FCC-Lawyer-and-Mother-on-Cell-Tower-Radiation-.pdf](https://ehtrust.org/wp-content/uploads/FCC_FDA-Communications-FCC-Lawyer-and-Mother-on-Cell-Tower-Radiation-.pdf)
- <sup>10</sup> See public comments by local resident groups regarding Montgomery County's reliance on FDA statements:  
<https://www.regulations.gov/comment/FDA-2021-P-1347-0732>
- <sup>11</sup> <https://www.law.cornell.edu/uscode/text/47/332>
- <sup>12</sup> <https://docs.fcc.gov/public/attachments/DOC-359025A1.pdf>  
This paragraph has been updated from an earlier version.
- <sup>13</sup> Maryland is located in the Fourth Circuit of the federal appeals courts. This court has ruled against using "potential" health effects, or "concerns" about health effects as a basis for rejecting a permit; however that does not preclude placement decisions based upon actual health effects, known harms, or imminent harms.  
<https://www.courtlistener.com/opinion/626095/t-mobile-northeast-llc-v-city-of-newport-news/>
- <sup>14</sup> [https://www.supremecourt.gov/DocketPDF/21/21-629/196710/20211025140205639\\_Santa%20Fe%20Alliance%20Petition.pdf](https://www.supremecourt.gov/DocketPDF/21/21-629/196710/20211025140205639_Santa%20Fe%20Alliance%20Petition.pdf)
- <sup>15</sup> <https://techwisemocomd.org/wp-content/uploads/2021/01/Why-Did-25-Wireless-Applications-with-Errors-Pass-MoCo-Tower-Committee-Review-Red3.pdf>
- <sup>16</sup> See County tower database for examples: [https://montgomerycountymd.gov/cable/Towers/database\\_towers.html](https://montgomerycountymd.gov/cable/Towers/database_towers.html)
- <sup>17</sup> See page 124  
<https://montgomerycountytfcg.s3.amazonaws.com/Applications/MC2020031117+Application.pdf>
- <sup>18</sup> "Conditional use" refers to permits that require public notice and a zoning hearing. ZTA 19-07 changed this setback from 300 feet to less than 30 feet.
- <sup>19</sup> "Limited use" refers to permits that may be issued without notice and without a zoning hearing. ZTA 19-07 reduced this setback from 300 feet to 30 feet or greater from any building intended for human occupation.
- <sup>20</sup> See page 54  
<https://cdn.ca9.uscourts.gov/datastore/opinions/2020/08/12/18-72689.pdf>
- <sup>21</sup> Localities may charge fees to recover their costs. FCC established a "safe harbor", meaning any fees at or below this amount are automatically presumed lawful without having to estimate costs. Prior to 19-07, the fee was \$16,390 per application (see pdf page 7)  
[https://apps.montgomerycountymd.gov/ccllms/DownloadFilePage?FileName=8356\\_1\\_5209\\_Resolution\\_18-601\\_Adopted\\_20160913.pdf](https://apps.montgomerycountymd.gov/ccllms/DownloadFilePage?FileName=8356_1_5209_Resolution_18-601_Adopted_20160913.pdf)

## **Public Comment by Resident Groups of Montgomery County, Maryland**

The undersigned are resident groups of Montgomery County, Maryland (the "County") with the mandate of advocating for fair, transparent, and accurate regulation of cell poles and cell towers and the protection of all residents. This public comment is on the petition submitted December 21, 2021 by Americans for Responsible Technology to the Food and Drug Administration ("FDA") relating to human exposure to radiofrequency radiation (FDA-2021-P-1347).<sup>1</sup>

### **Enactment of Significant Changes in the Residential Zoning Code**

On July 27, 2021, our County Council (the "Council") (in a 7–2 vote)<sup>2</sup> passed a zoning amendment (Zoning Text Amendment, or ZTA 19–07) that allows small cell towers to be placed with no minimum setback from homes (the previous setback was 300 feet). The ZTA does not provide residents with any meaningful notice or opportunity to be considered prior to the placement of a tower in front of their homes and eviscerates residents' rights under the long-standing appeals process in the County zoning code. This ZTA, first introduced in 2019, was overwhelmingly opposed by residents at the only public hearing on this ZTA held November 19, 2019. Since that hearing, and during the COVID-19 pandemic, the Council drastically revised the originally-proposed zoning amendment to bring towers even closer to homes – including reducing the minimum setback without any notice from 60 feet down to 30 feet – at the urging of wireless providers and lobbyists. Against public outcry, the Council provided no mechanism for setbacks adequate to protect vulnerable populations such as children, the elderly, nursing homes, and persons with disabilities. Despite overwhelming evidence of a badly broken process, the Council failed to correct the tower application review procedures that for years have led to wireless facilities being placed without resident input, in violation of zoning code requirements on height, setback, hearings under conditional use, pole placement, and without ensuring compliance with federal human exposure limits. This failure is despite receiving documentation, photos, and public testimony documenting these deficiencies.<sup>3</sup>

***In passing this zoning amendment, the Council relied on the premise, unsupported by evidence, that the Federal Communications Commission (the "FCC") radiofrequency radiation exposure limits set in 1996 (which the FCC reaffirmed in 2019, based to a significant extent on***

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<sup>1</sup> For the full text of the Americans for Responsible Technology petition see: [https://www.americansforresponsibletech.org/\\_files/ugd/2cea04\\_db07f220b02245a88cc4e9e5561dad15.pdf](https://www.americansforresponsibletech.org/_files/ugd/2cea04_db07f220b02245a88cc4e9e5561dad15.pdf)  
For the public docket, including public comments on the petition, see: <https://www.regulations.gov/docket/FDA-2021-P-1347>

<sup>2</sup> Individual Councilmembers in favor of deploying cell towers 30 feet from homes and those that voted for Zoning Text Amendment 19–07 include: Hans Riemer (lead sponsor), Gabe Alborno (co-sponsor), Craig Rice (co-sponsor), Tom Hucker (President), Andrew Friedson, Evan Glass, and Nancy Navarro.

<sup>3</sup> See Attachment A – MC4T.org Presentation for West Montgomery County Citizens Association - October 10, 2018.

*input from the FDA) adequately protect the public's health, safety and welfare. Despite the fact that the FDA has not provided evidence to substantiate this premise, several Councilmembers repeated and promoted this premise. The Council further relied on this premise in its continued failures to correct ongoing violations of the County code that regulates cell towers and to ensure that emissions are in compliance with federal limits. The Council's reliance on this unsubstantiated premise has in the past harmed – and will continue to harm – our community.*

### **Recent Challenges to FCC Radiofrequency Exposure Limits**

On August 13, 2021, the U.S. Court of Appeals for the D.C. Circuit ruled in favor of Environmental Health Trust et al. that the FCC failed to provide a reasoned explanation for its determination that its wireless radiation guidelines – set in 1996 – adequately protect against harmful effects of exposure to radiation from cell phones, cell towers, and other wireless devices. The FCC ignored evidence that included over 11,000 pages of peer-reviewed, scientific, and human evidence demonstrating harm. The Court found that the FCC had failed to examine much of the harm documented on the record – such as impacts to reproduction, the nervous system and wildlife – and that the FCC had improperly relied on inadequate and conclusory statements from the FDA. The Court specifically noted that although the FDA stated in a 2018 webpost, "based on our ongoing evaluation of this issue, the totality of the available scientific evidence continues to not support adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits" – that there were, in fact, no reports on the record showing an adequate review of the research by the FDA. Although the FDA later released a literature review, it was focused on cancer and did not include evaluation of research on endpoints such as neurological impacts and damage to reproduction. The August 13, 2021 Court ruling specifically noted how non-cancer harms were ignored by the FCC. The Court ordered the FCC to address impacts on children, the health implications of long-term exposures, and technology developments since the FCC last updated its guidelines in 1996.

This Court decision came at a pivotal time as localities throughout the nation, including our County, have been pressured by the FCC to roll out "small cell" antennas in public rights-of-way and residential areas without any apparent scientific examination as to whether the FCC's exposure limits protect public safety.

### **Council's Promotion of Safety Levels & Emissions Exceeding Those Same Levels<sup>4</sup>**

For years, the Councilmembers sponsoring the ZTA actively promoted to the public the purported safety of cell towers in close proximity to residences. As time has passed, that promotion of safety has gone beyond references to the FCC and FDA and has evolved into name-calling and attacks on residents questioning the Council's actions on "small cells." Throughout this zoning

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<sup>4</sup> See **Attachment B** for references to various materials relating to this section.

amendment process, members of the Council have urged residents to trust the safety of the wireless equipment installed close to their homes while denigrating the residents who presented scientific evidence of harms.

In October 2018, Councilmember Hans Riemer, lead sponsor of the ZTA, wrote an opinion in the Washington Post entitled "Montgomery County should have wireless broadband."<sup>5</sup> He noted it was time to deploy small cells in residential areas while acknowledging "this possibility has stirred up tremendous *anxiety* among some residents [who have] demanded we keep the antennas and poles out of residential neighborhoods ... [but] this would institute a cumbersome hearing and examination process for every antenna." Councilmember Hans Riemer said "the County must act now to place cell towers ... If the industry gets its preferred approach, the poles will be higher and closer to houses. Companies won't pay fair market value for using public space. They'll make taxpayers subsidize the roll-out, even though they have no commitment to providing universal coverage to their communities." Further, he said "I met with FCC Chairman Ajit Pai, and separately with every FCC Commission member and urged them to partner with us to speed deployment rather than remove us from the table. In response, Pai has changed the membership of the [Intergovernmental Advisory Committee] [by] packing it with local government officials who support his agenda." *While the lead sponsor mentions how the industry could bring poles closer to homes, it was he who, in fact, heavily led the efforts since 2018 to bring these installations 30 feet from homes to/through July 2021. The lead sponsor also served on the Intergovernmental Advisory Committee from 2017 to 2019.<sup>6</sup> The lead sponsor's inaccurate labeling of resident testimony and input as "anxiety" is consistent with his attempt to dismiss the substantial body of scientific evidence provided by residents to the Council, both in writing and in formal oral testimony in public hearing, documenting the known and foreseeable harms that would result after the passage of this ZTA.*

Prior to ZTA 19-07, Councilmember Hans Riemer supported a series of failed zoning amendments that would have permitted cell towers closer to residences, including ZTA 16-05 and ZTA 18-11, which did not pass due to overwhelming public opposition. During public hearings related to the current and prior ZTAs, residents provided oral testimony documenting harms they experienced from radiofrequency radiation and the County's inadequate approach to safety. One resident discussed her brother who passed away from glioblastoma.<sup>7</sup> A military veteran described his experience with insomnia and radiofrequency radiation.<sup>8</sup> Given the acrimonious atmosphere of name-calling described below, many residents are uncomfortable sharing their stories on the record.<sup>9</sup>

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<sup>5</sup> See <https://www.washingtonpost.com/blogs/all-opinions-are-local/wp/2018/10/22/montgomery-county-should-have-wireless-broadband/>

<sup>6</sup> See <https://www.fcc.gov/consumer-and-governmental-affairs/about-bureau/office-intergovernmental-affairs/iac-members/general>

<sup>7</sup> See <https://www.youtube.com/watch?v=DrEs62DXk6k>

<sup>8</sup> See Takoma Park City Council meeting 2018, testimony on County-wide ZTA proposal <https://youtu.be/wYwMGmwU9cU?t=6881>

<sup>9</sup> See Attachment B

The County relied on the FCC's 1996 exposure limits to protect safety while at the same time approving applications for wireless facilities on building rooftops, including atop affordable housing buildings, even when the applications' predicted level of emissions from those facilities significantly exceeded these federal limits. In one of numerous examples, rooftop RF radiation at an apartment building was stated to be 89 times higher than federal limits, without any requirement or demonstration that levels inside the building were within federal limits.<sup>10</sup> (Federal rules allow rooftop levels to exceed FCC limits as long as signs and barriers are properly placed to warn residents not to go in these areas. No one in the general public, particularly inside the building, is supposed to be exposed to levels over federal limits).<sup>11</sup> In another example of the County's lack of attention to safety, a local news segment highlighted that proposed apartment rooftop antennae were predicted, via computer modeling, to generate areas of RF radiation that would exceed FCC exposure limits for the general public by up to 25 times those limits. Nevertheless, the County issued a permit without any plan to actually take or require onsite measurements to determine whether residents inside the building were being exposed to RF radiation in excess of federal exposure limits.<sup>12</sup>

A March 2020 Washington Post Opinion piece, featuring Councilmember Hans Riemer's push for "small cell" deployment despite public opposition, noted that "[t]he real evidence keeps piling up. The Food and Drug Administration ("FDA") in early February said it's continually monitoring the situation and found 'abundant evidence' to support the conclusion that 'there is no consistent or credible scientific evidence of health problems' caused by cellphones."<sup>13</sup> A year later, Councilmember Hans Riemer referred to proactive, diligent constituents as "alot of kooky people complaining about wireless radiation from these devices ... the health impacts ... [are] deeply studied and are well known and are not a concern."<sup>14</sup> Co-sponsor of the zoning amendment, Councilmember Alborno, said at a June 29, 2021 Council meeting on "small cells" that "I do put a tremendous amount of faith in our federal agencies ... and the systems we have in place, have

<sup>10</sup> See Attachment C – Letter Dated December 1, 2020 to Marjorie Williams, Chair, and Members of the Montgomery County Tower Committee regarding 25 applications with serious errors passing the Montgomery County Tower Committee reviews.

See page 56 for anticipated exposure of 8,968% (89x) in excess of federal limits:

<https://montgomerycountytfcg.s3.amazonaws.com/Applications/MC2020081251+Application.pdf>

<sup>11</sup> See FCC 19-126 (Signage and Access Control) <https://docs.fcc.gov/public/attachments/FCC-19-126A1.pdf> and also Office of Engineering and Technology (OET) Bulletin 65 at pages 10, 32, 52, 58, and 62) [https://transition.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins/oet65/oet65.pdf](https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)

<sup>12</sup> In November 2019, the 25x anticipated level was highlighted on the local CBS news affiliate:

<https://www.wusa9.com/article/news/local/radio-frequency-predictions-cause-verizon-permit-delay-takoma-park/65-0739176c-2125-407e-9bc8-8bf32edc4fe8>

While the news segment says that the County was going to reconsider, ultimately it recommended the application to proceed with an anticipated emissions level 2,598% above (approximately 25x) FCC limits. See page 3:

<https://montgomerycountytfcg.s3.amazonaws.com/Applications/MC2019080964+Application.pdf>

<sup>13</sup> See [https://www.washingtonpost.com/opinions/local-opinions/the-deployment-of-5g-sparks-a-turf-war-in-montgomery-county/2020/03/05/706510b2-5279-11ea-b119-4faabac6674f\\_story.html](https://www.washingtonpost.com/opinions/local-opinions/the-deployment-of-5g-sparks-a-turf-war-in-montgomery-county/2020/03/05/706510b2-5279-11ea-b119-4faabac6674f_story.html)

<sup>14</sup> March 8, 2021 Montgomery County Council Transportation and Environment Committee Meeting (<https://youtu.be/r3qqX0uEA?&t=1635>) (@approx. 32:00)

conducted their own extensive research on a variety of issues that impact us."<sup>15</sup> And at the same meeting, Councilmember Hans Riemer reiterated that radiofrequency radiation is "one of the most extensively studied issues out there. And if we were hearing from people like Dr. Fauci<sup>16</sup>, Dr. Walensky, the head of the FDA, that they had a concern like we would all know, if our leading scientific agencies were concerned about this. We do not hear from them."<sup>17</sup>

Reliance on FCC and FDA statements has contributed to the placement of cell towers at schools in the County. There are eleven large (known as "macro") towers at Montgomery County public schools—with 81% of those towers at schools where at least one-third of the students receive free or reduced cost meals, according to the County's own data.<sup>18</sup> We are unaware of any activity by the County or school superintendents to gather reliable data on exposure to children. Lax tower reviews and lack of attention to safety or compliance with federal limits have contributed to the County failing to verify radiofrequency emissions at schools to ensure towers are within federal limits—as well as ignoring evidence of emissions in excess of such limits.<sup>19</sup> This is particularly at odds with the County's approach to periodic safety testing standards with other human toxins like lead and radon, for which the County has adopted standards more stringent than Environmental Protection Agency standards. The Council has also ignored residential requests to ensure safeguards for utility workers, firefighters, and first responders who may need to work in close proximity to cell towers in order to perform their duties.

***Councilmembers have a fiduciary obligation to residents to be informed of the consequences of Councilmembers' decisions, to seek appropriate expertise so as to protect the public health, and to act on such information to protect the public health, safety, and welfare. This obligation includes the need for Councilmembers to be informed of levels of RF exposure to the public and vulnerable populations, including emissions and exposures resulting from the Council's actions and its adoption of ZTA 19-07.***

### **Residents Continue to Struggle and Plead for a Voice in the Process**

As part of County procedure<sup>20</sup>, the "Office of the People's Counsel (OPC)" is required to provide input on ZTA 19-07 and prior zoning amendments, but OPC currently has no staff after

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<sup>15</sup> VIDEO — ZTA 19–07 starts @ approx. 2:04:28 — [https://youtu.be/Fy98kb\\_omS4?t=7468](https://youtu.be/Fy98kb_omS4?t=7468)

<sup>16</sup> It was brought to the Council's attention by numerous residents that Dr. Anthony Fauci is an infectious disease doctor and likely would not opine in this area.

<sup>17</sup> See fn. 15

<sup>18</sup> <https://wjla.com/news/health/mcps-places-controversial-cellular-towers-at-predominantly-high-poverty-schools-stats-show-113428>

<sup>19</sup> See **Attachment C** – Letter Dated December 1, 2020 to Marjorie Williams, Chair, and Members of the Montgomery County Tower Committee regarding 25 applications with serious errors passing the Montgomery County Tower Committee reviews.

<sup>20</sup> See [https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco\\_md\\_zone2014/0-0-0-64694](https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md_zone2014/0-0-0-64694) (noting that required staff consultations for a zoning text amendment must include one staff representative "each from the Montgomery County Planning Board; the Office of the County Attorney; the



being defunded by the Council. As a result, residents struggle for a voice<sup>21</sup> because the purpose of the OPC is "promoting a full and fair presentation of relevant issues in administrative proceedings in order to achieve balanced records upon which land use decisions can be made." The OPC is also tasked with providing "technical assistance to citizens and citizens associations [to] encourage effective participation in, and increased public understanding of and confidence in, the County land use process."

ZTA 19-07 is proof of residents' pertinent questions and issues having been given a back seat to the desires of (and fearmongering by) the wireless industry and its lobbyists. For example, the County Council's attorney noted the following in briefing materials, despite the County already allowing wireless companies access to poles 300 feet from homes and in public rights-of-way, prior to the passage of ZTA 19-07:

"[i]n recent years, *industry-sponsored bills* have been brought before the [Maryland] General Assembly which specifically list Montgomery County as being a restrictive jurisdiction. Less permissive standards than surrounding jurisdictions decrease the County's desirability. And, from a legal perspective, if these bills were to move forward the state could impose rules on the County that are less favorable than this [zoning change]."<sup>22</sup> [emphasis added]

An example of Councilmember interaction with the wireless industry is Councilmember Hans Riemer's providing a promotional statement for the pro-industry group MD5G Partnership. In the press release announcing the formation of this Maryland group, Councilmember Riemer was the only elected official quoted.<sup>23</sup> Since then, the group has consistently repeated false talking points often used by Councilmember Riemer, such as "junk science" and "we are falling behind," among others.

Despite opposition from residents, it cannot be over-emphasized that the Council relied heavily on input from the wireless industry. As part of promotional materials about the zoning amendment, Councilmember Hans Riemer touted the safety of small cell towers and radiofrequency radiation generally by often citing federal agencies such as the FCC and FDA to illustrate to the public that the Council's roll-out of cell towers in close proximity to residences was safe. The Council refused to consider numerous peer-reviewed scientific studies submitted by residents including the same studies referenced by the County in its own June 10, 2019 opening

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Office of Zoning and Administrative Hearings; the Department of Permitting Services; the Board of Appeals; the *People's Counsel*; and the Office of the County Executive." [emphasis added]

<sup>21</sup> See also [https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco\\_md/0-0-0-1896](https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md/0-0-0-1896)  
Surrounding areas with an Office of the People's Counsel or similar resident advocate include Hartford County, Prince George's County, Baltimore, Washington D.C., and the state of Maryland.

<sup>22</sup> See page 21 (Agenda Item #4D, July 27, 2021 Council Meeting)  
[https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210727/20210727\\_4D.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210727/20210727_4D.pdf)

<sup>23</sup> See Attachment B.

brief in *Montgomery County, Maryland et al. v. FCC*.<sup>24</sup> In pro-industry fashion, Councilmember Riemer vehemently challenged sources other than federal statements on RF safety. Councilmember Riemer went so far as to call his own constituents "peddlers of junk science", "anti-vaxxers," and that they were somehow connected to the KGB. He did so publicly and often.<sup>25</sup>

In the *Montgomery County v FCC* petition<sup>26</sup>, the County asked the FCC to "confirm whether the 1996 RF standards will adequately protect public health and safety" prior to a 5G roll-out. The County further stated in its petition:

***"[i]f the new 5G environment, in fact, poses health risks, any prior rollout of 5G will have potentially injured citizens of Montgomery County and other municipalities, including sensitive populations like children, that cannot be undone. Such a result would be unconscionable."***<sup>27</sup> [emphasis added].

### **About Our Community – A Washington D.C. Suburb**

The County is uniquely situated for several reasons. It is home to federal agencies that play a role in setting health and safety standards – including the National Institutes of Health,<sup>28</sup> which reported "clear evidence" of cancer harm from radiofrequency radiation in a National Toxicology Program study published in 2018.<sup>29</sup> The County is also home to the Executive Director of Environmental Health Trust as well as the attorney who represented Environmental Health Trust in its recent, consolidated case against the FCC. In addition, the County is home to professionals who work in fields from law to medicine to marketing/public relations, climate action, government, and academia. These professional constituents have tirelessly provided their knowledge to Councilmembers, but residents' expertise and input were – and continue to be – dismissed. Instead, Councilmembers have proactively and callously exhibited a pattern of consistently deferring to – and speculating about – the desires of the wireless industry, the FCC, and the FDA for input on residential wireless zoning.

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<sup>24</sup> The previous Council filed suit in mid-2018. The current Council, sworn into office in December 2018 for a four-year term, allowed the already-filed lawsuit to proceed. However, when the Ninth Circuit dismissed on procedural grounds the petition regarding exposure limits, the current Council declined to participate in a follow-up petition. However, Environmental Health Trust, as a co-petitioner did file a follow up petition, which led to the previously mentioned August 13, 2021 D.C. Circuit Court decision. For the County's brief see:

<https://ehtrust.org/wp-content/uploads/Montgomery-County-Brief-on-Merits-filed-6-10-2019.pdf>

<sup>25</sup> See Attachment B.

<sup>26</sup> See fn. 24.

<sup>27</sup> See fn. 24 at p. 55.

<sup>28</sup> Other federal agencies with physical headquarters in Montgomery County, Maryland include the Food and Drug Administration, the Consumer Product Safety Commission, the National Cancer Institute, the National Institute of Standards and Technology, and the National Council on Radiation Protection and Measurements.

<sup>29</sup> See [https://ntp.niehs.nih.gov/ntp/htdocs/lt\\_rpts/tr595\\_508.pdf](https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr595_508.pdf).



Despite the access and proximity to these unique resources, and in an about-face from the County's arguments in *Montgomery County v. FCC*, seven members of the current sitting Council voted for the ZTA allowing a rollout of 5G "small cells." Seven Councilmembers made a critical decision to enact a zoning amendment that will impose irreparable, foreseeable, and preventable harm on residents and property values in the County for years to come. This ill-fated decision was irresponsibly made by the Council, relying on the unsupported, and industry-hyped, premise that the FCC has established a standard for radiofrequency radiation exposure for human populations that protects public health, safety, and welfare. Such reliance was based on the unsubstantiated premise that the FDA has established an official position, based on a reasoned explanation, that current FCC exposure limits for radiofrequency protect public health, safety, and welfare. Residents of the County, including children and sensitive populations, will regrettably suffer the repercussions of the Council's "unconscionable" actions.<sup>30</sup>

**SEE FOLLOWING PAGE FOR SIGNATURES**

**Attachments:**

- Attachment A – MC4T.org Presentation to West Montgomery County Citizens Association - October 10, 2018
- Attachment B – Sources and statements
- Attachment C – Letter Dated December 1, 2020 to the Montgomery County Government's Tower Committee

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<sup>30</sup> See fn. 24, page 55. "Unconscionable" was the term used by the County in its own 2019 petition against the FCC.

## **Signatures**

### **MC4T**

Montgomery County Coalition for the Control of Cell Towers (MC4T.org) fights for fair, transparent, and accurate regulation of cell poles and cell towers to minimize adverse impacts to surrounding land uses, respect the harmony and aesthetic character of the communities, and protect the safety of all residents.

### **MocoSafeG**

MocoSafeG.org is a group of residents who value safer technology, safer internet access, and safer cell phone service for people who live, work, shop in, or visit Montgomery County, MD. MocoSafeG values wired and fiber technology infrastructure where available. Our group encourages critical thinking about how 4G and 5G cell antennas, cell poles, and cell towers have been – and will be – placed in environments where human life, animal life, and plant life co-exist.

**For press and other inquiries, please contact MC4T: controlcelltowers [at] gmail.com**

**ATTACHMENT A**

**to the Public Comment by Resident Groups of Montgomery County, Maryland**

West Montgomery County Citizens Association

# Wireless Towers and Cell Poles in Potomac:

What's here and *what's coming...*



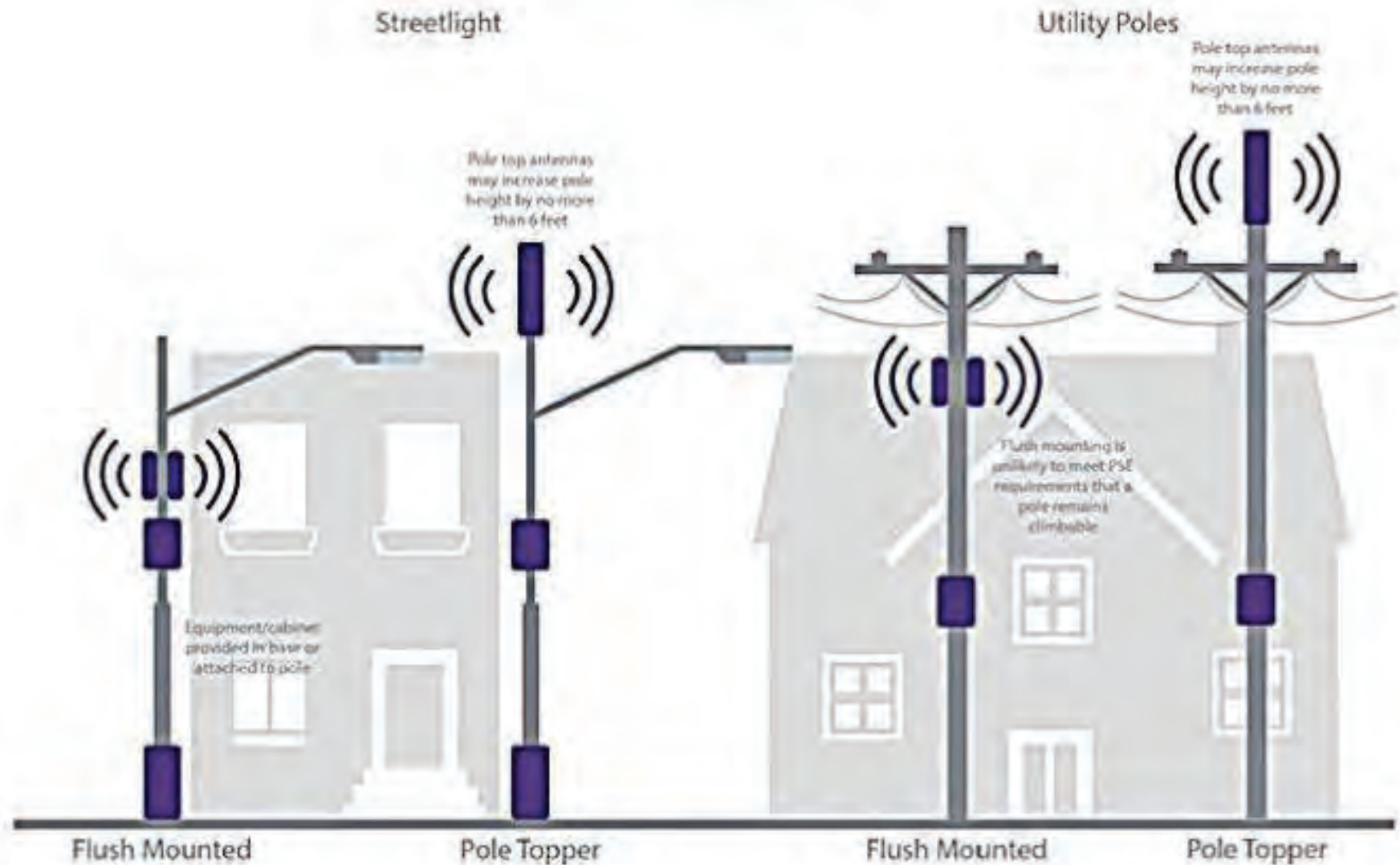
MC4T.ORG



Montgomery County Coalition for the Control of Cell Towers

October 10, 2018

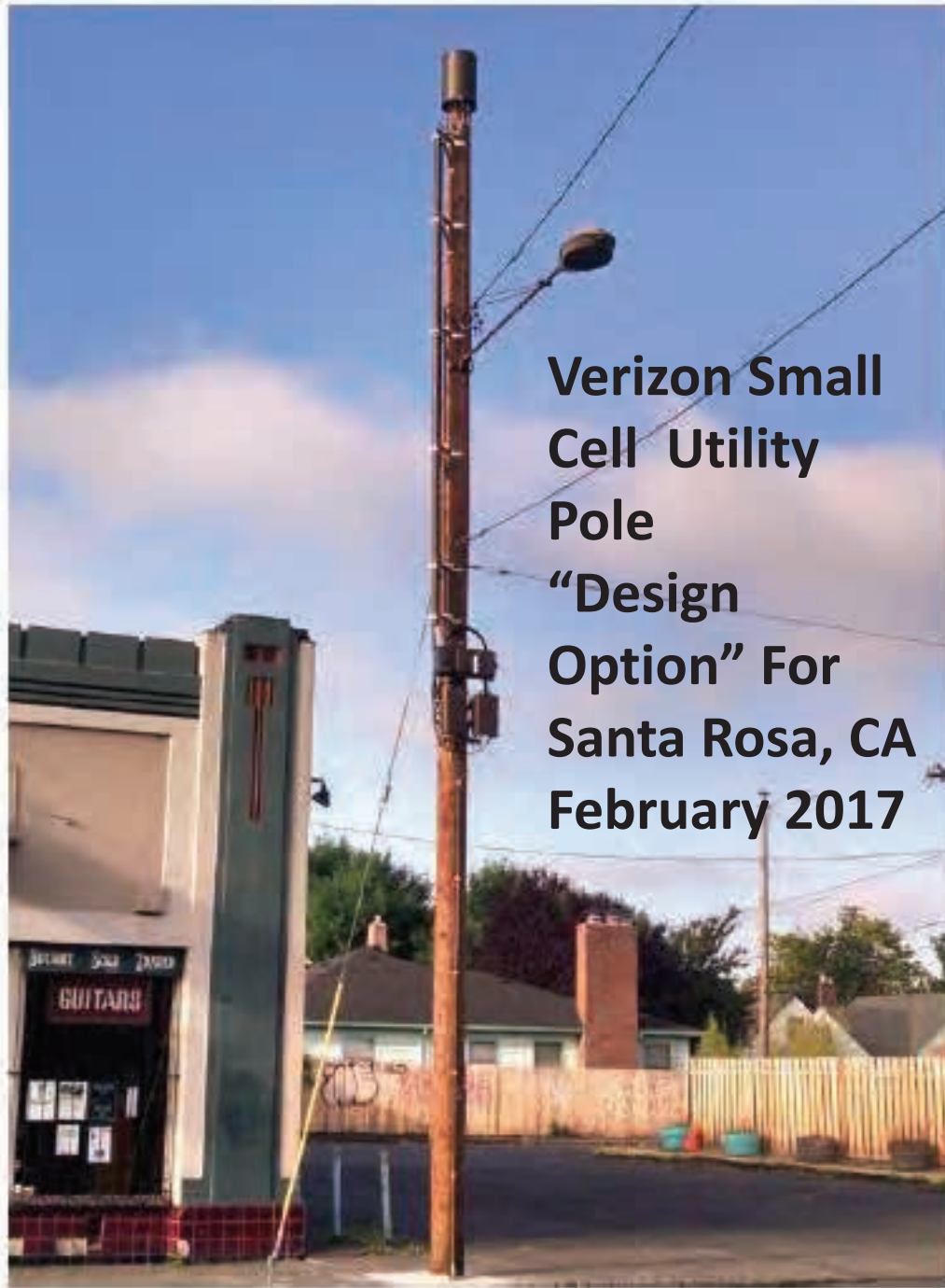
Option A permits:



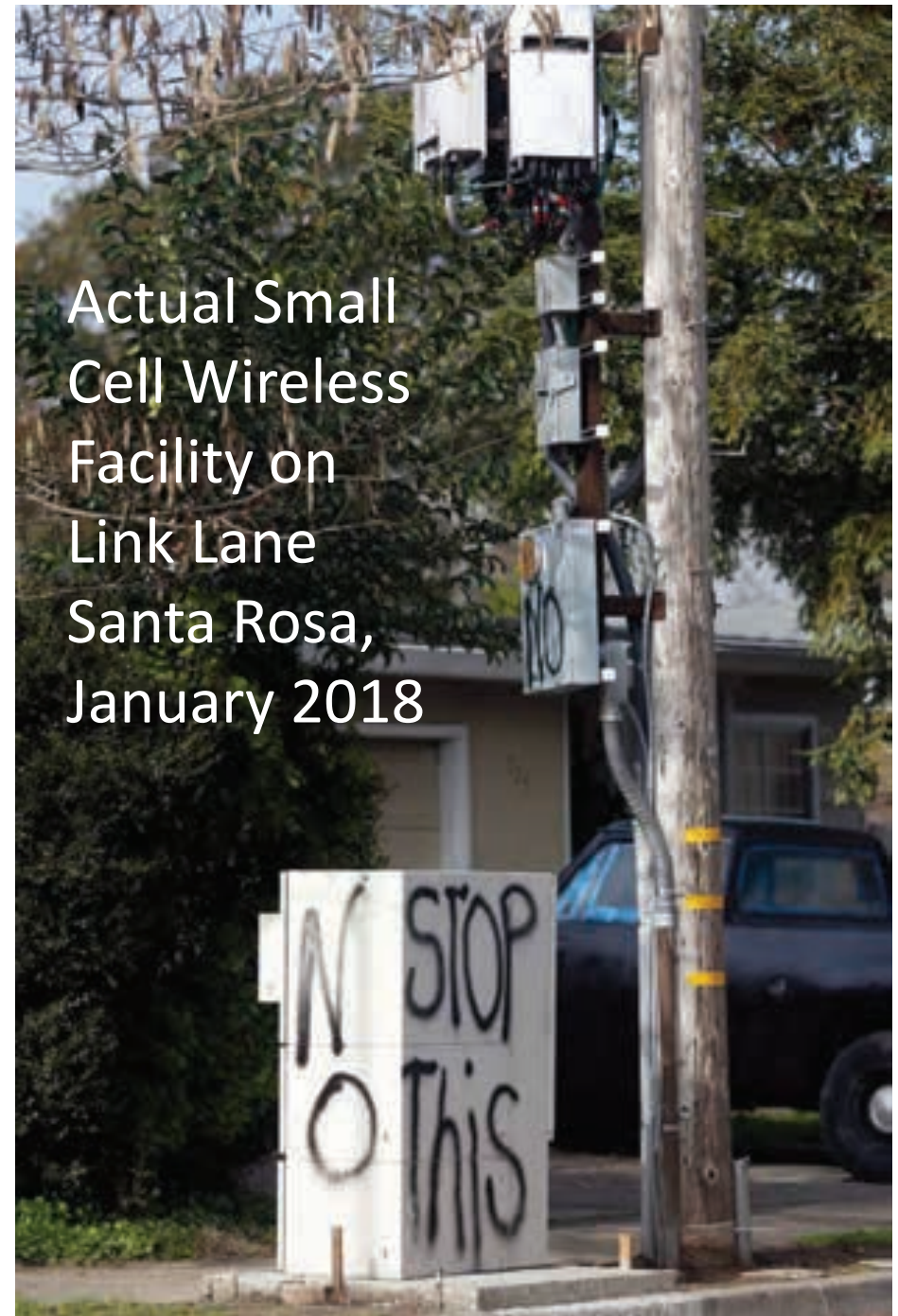
## Wireless Facilities on Utility Poles

### Examples of Pole Designs





Source: Santa Rosa & Verizon Wireless Small Cell Program, Feb 2017



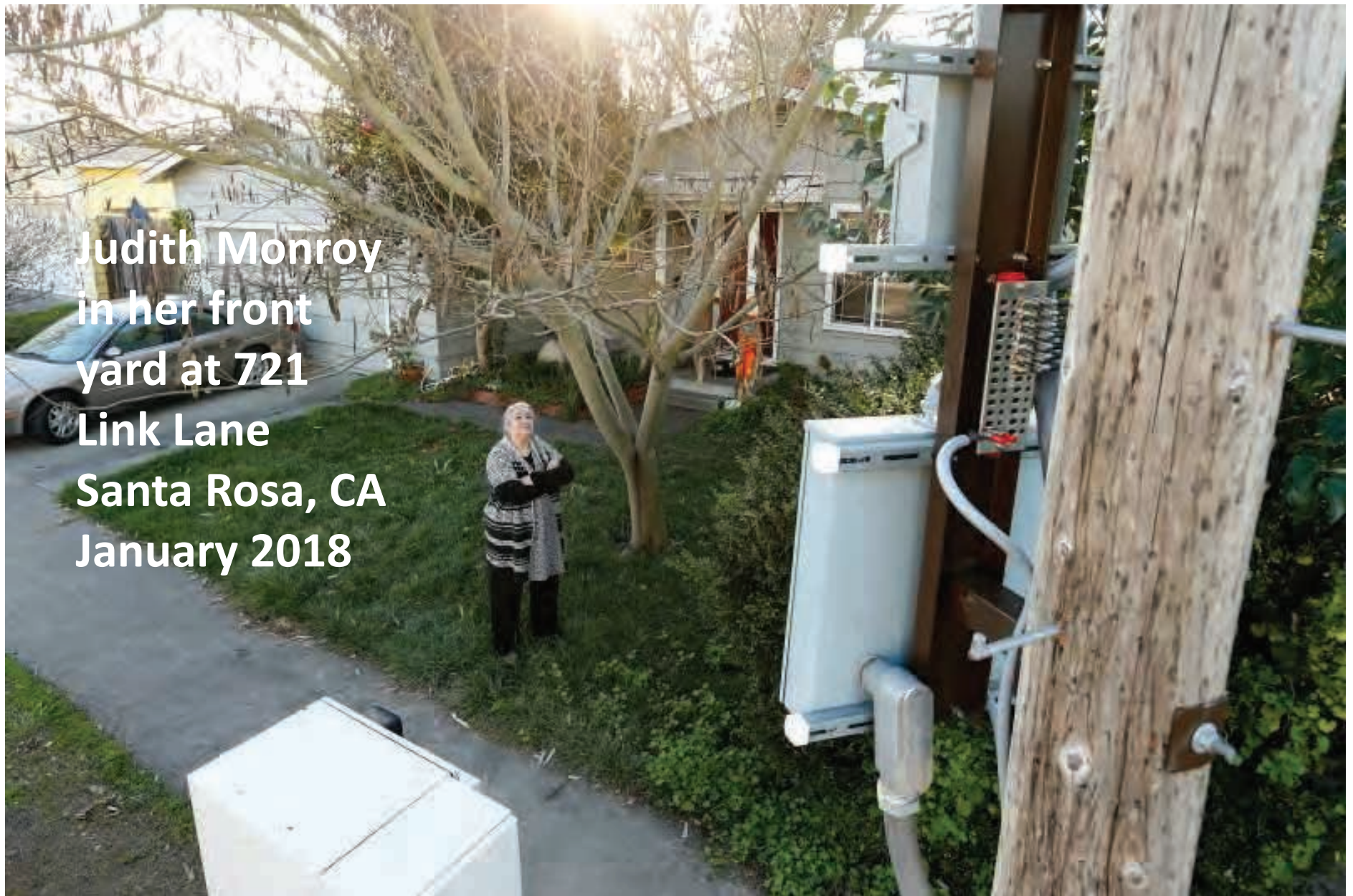
Source: The Press Democrat, Santa Rosa, Christi Warrant, January 12, 2018

The obtrusive impact  
of wireless facilities  
721 Link Lane  
Santa Rosa, CA  
July, 2015



Street view before addition of adjacent ground cabinet, pole mounted equipment, brackets, antennas and exposed cabling.





**2017 Agreement for 72 Small Cell Facilities with 30 on streetlights and 42 on utility poles. 15 of 38 permits actually installed before Verizon “paused” for poor work performance.”**





## 14190 Travilah Road, North Potomac

Application #: 201512-01

- **37' from nearest dwelling**
  - Minimum setback is **60'**
  - *Inadequate setback was clearly shown in diagrams submitted with application.*
  - One of two North Potomac cell poles inside of minimum setbacks
    - (The other on Dufief Mill is 45' from nearest dwelling.)
- **33' recommended total height** with antennas per Tower Cmte action
  - Actual installed height is **47'**

February 2018

**It is also happening here in Montgomery County!!**

Street view  
14190 Travilah Road  
Looking south - June, 2018



**Prime objective: find “stub poles” to keep wireless facilities out of distribution lines**



# 7800 Brickyard Road, Potomac

Application #: 201005-06

MAD-009



One of several Potomac cell poles NOT properly displayed on official Tower Committee maps.

# 7800 Brickyard Road

Potomac, MD

- 68' 4" total height
  - Existing stub pole was ~ **30'** tall
- Cell pole was **NEVER** approved for this location by Tower Committee
  - “Recommended” site was across street, ~150' away in utility lines.
- **42'** from nearest dwelling
  - Minimum setback is **60 ' (after 2014)**
- One of five cell poles “migrated” *without Tower Committee approval* to other locations in Potomac.



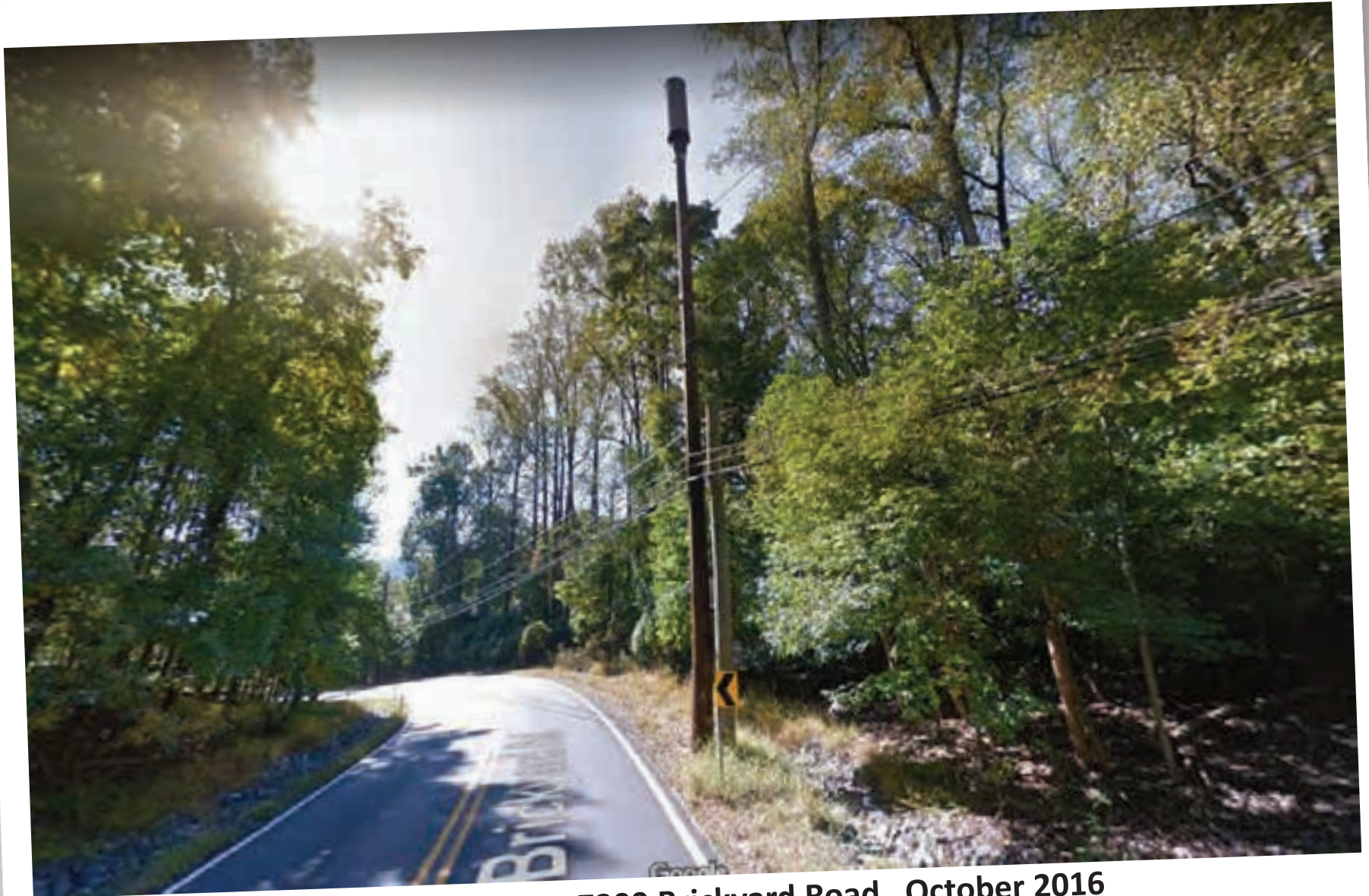


Street view Brickyard Road in June 2012. Recommended pole shown at right. Pole actually installed across road 150' feet away. - outside of distribution lines.  
***“Not permissible inside lines because of NESC safety code....”***



# Small cell inside distribution lines

Application 201408-04



Half mile away...Street view 7300 Brickyard Road, October 2016

# Telecommunications Facilities Coordinating Group (TFCG)

- “Tower Committee” created in 1996
  - COMCOR 2.58E
- Various County employees representing “land-owning agencies.” (Chair is Margie Williams)
- Under auspices of Department of Technology Services. (Sonny Segal). Also, Ultra Montgomery. (Mitsi Herrera)
  - PHED Committee has jurisdiction over wireless/telecom matters
- **NO** notice is required – nor provided of pending tower applications.
- Public may not speak at monthly TFCG meetings,
- Input may be submitted to “land owning agency.”
  - But, most agencies have no procedures for public input...

# Dysfunctional Regulation of Cell Towers

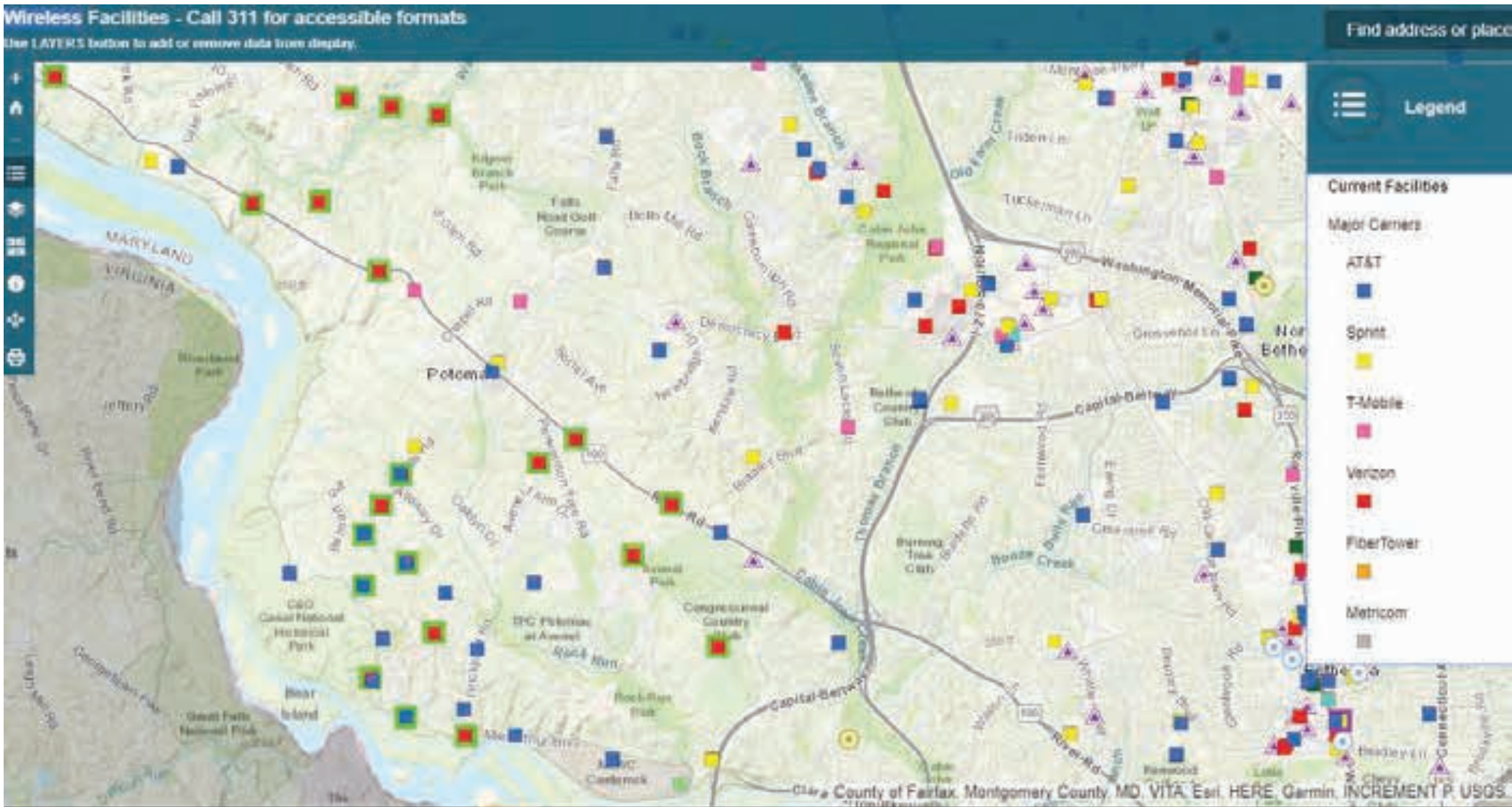
## 7800 Brickyard Road Example

- Application to **Tower Committee** (May 2010):
  - 7801
- Permit issued by **DPS**: (April 2011):
  - 7701
- Actual installation (Dec '11):
  - **7800**
- Crown Castle cabinet ID:
  - 7701
- NO cross matching by DPS of application supplied by Crown Castle to data submitted by PEPCO for permit
- NO zoning review
- NO inspections
- NO enforcement
- NO remediation for non-conformance

**MC4T inventory: +50% of cell poles are non-conforming**



<https://gis3.montgomerycountymd.gov/WirelessAntennasAndTowers/>



Potomac has 50+ wireless facilities, now.  
95% are on utility poles.

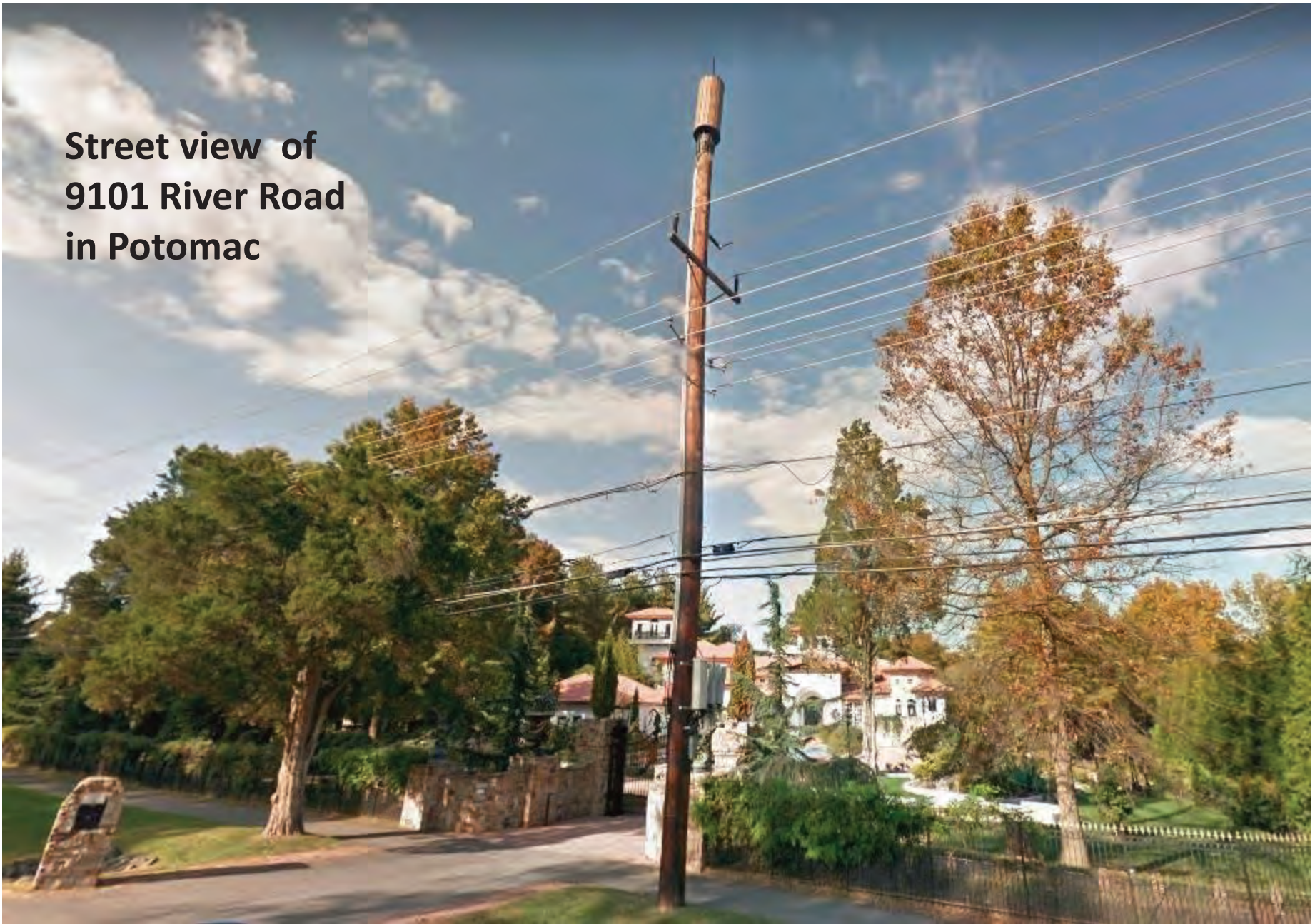
# Summary of Major Findings

## 2018 Inventory of 50+ Cell Poles in PROW

- At least nine, and probably 10 *or more* cell poles, were installed in the wrong locations. Locations that were NEVER approved by Tower Committee. Some do not appear on official County maps.
- Six confirmed and *likely more* cell poles inside of minimum setback requirements.
- Three confirmed - and *probably more* - cell poles were installed without mandated “conditional use” hearings.
- At least 27 cell poles are taller than existing poles they “replaced,” or otherwise are in non-conformance to height limits authorized by the Tower Committee. (Several “replacement” cell poles are double the height of the pre-existing poles.)



Street view of  
9101 River Road  
in Potomac



69' pole *failed* "wind test" for additional antennas. Modified in 2014 to add 7' more height and extra diameter. Batch application of 38 cell poles.



**9101 River Road  
13,090 sq ft. 5 beds 9 baths  
\$6,995,000**



**Value Enhancement? No cell pole shown in any property ads.  
On market 524 days as of 10/10/2018**





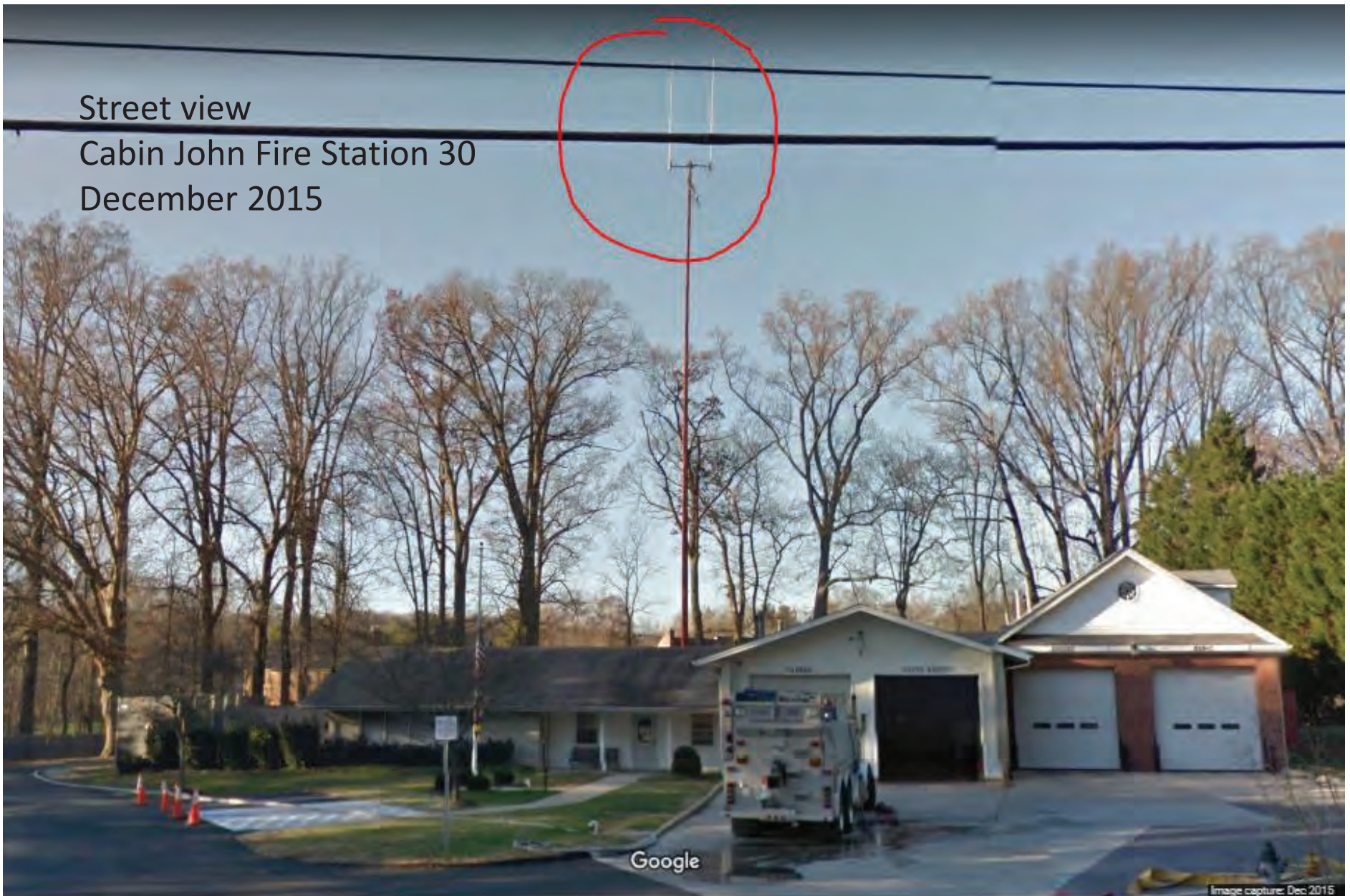
**Aerial View of 150' monopole at Fire Station 33 at 11430 Falls Road.  
Shows homes built after tower erected.**



Street view

Cabin John Fire Station 30

December 2015



**April 2018 - Planning Board denied 189' monopole to replace existing whip pole.  
“Incompatible with surrounding residential neighborhood. Does not meet  
minimum setbacks.”**

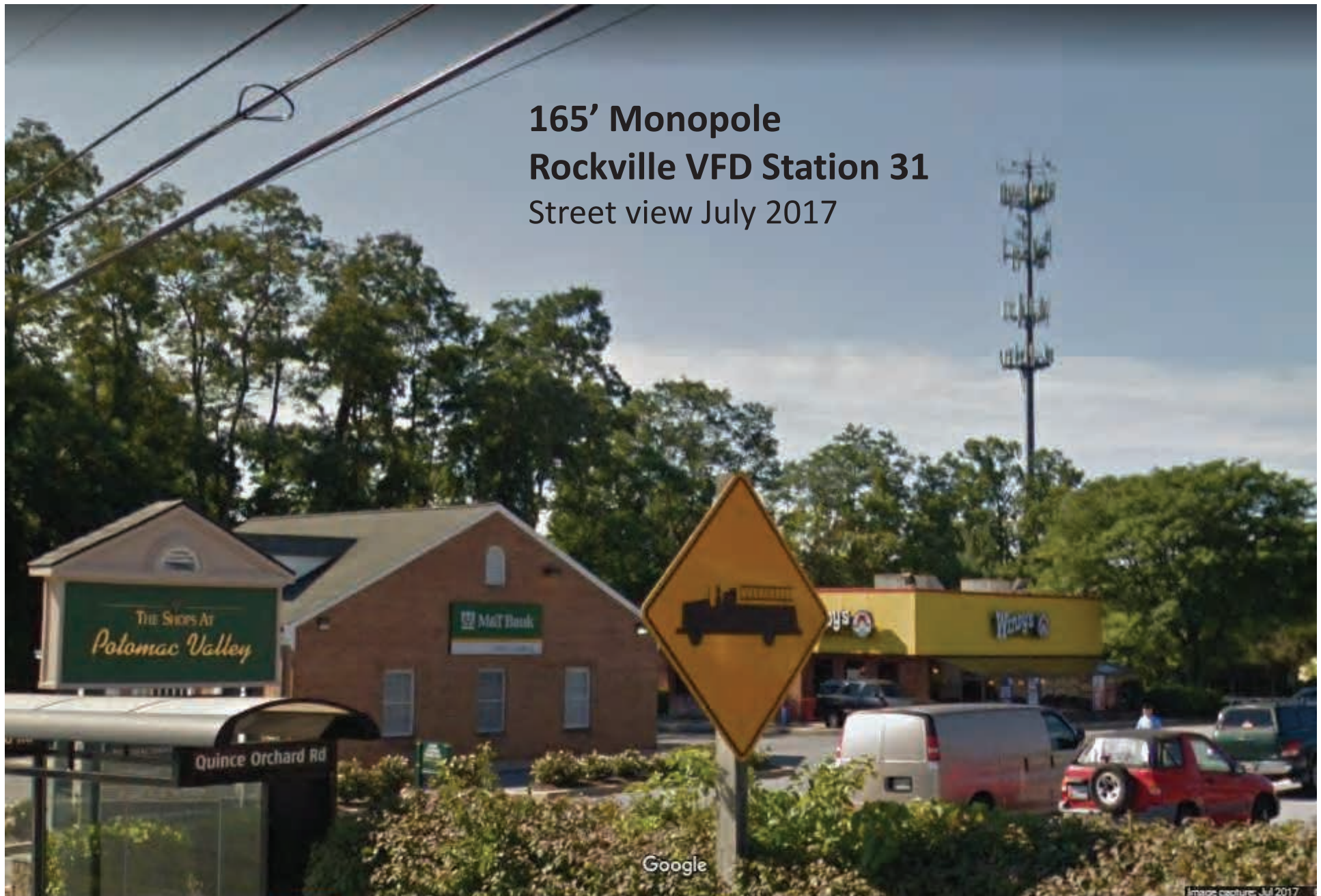




**2017 Aerial image Fire Station 30 and surrounding neighborhood  
Shows residence inside 300' minimum setbacks.**



**165' Monopole**  
**Rockville VFD Station 31**  
Street view July 2017



**Many antennas can be added to monopoles as “minor modifications.”**  
**This 150' tower now has more than 36 six-foot tall panel antennas**



## Aerial view Potomac Village



**What other sites might be under consideration for MCFRS pole?**





***It's happening here!***  
**“Rat’s Nest”**  
**of exposed wires**

**NO design or stealth controls.**  
**NO inspections.**  
**10905 Glen Road**  
**Potomac, MD**



ID sticker on cabinet





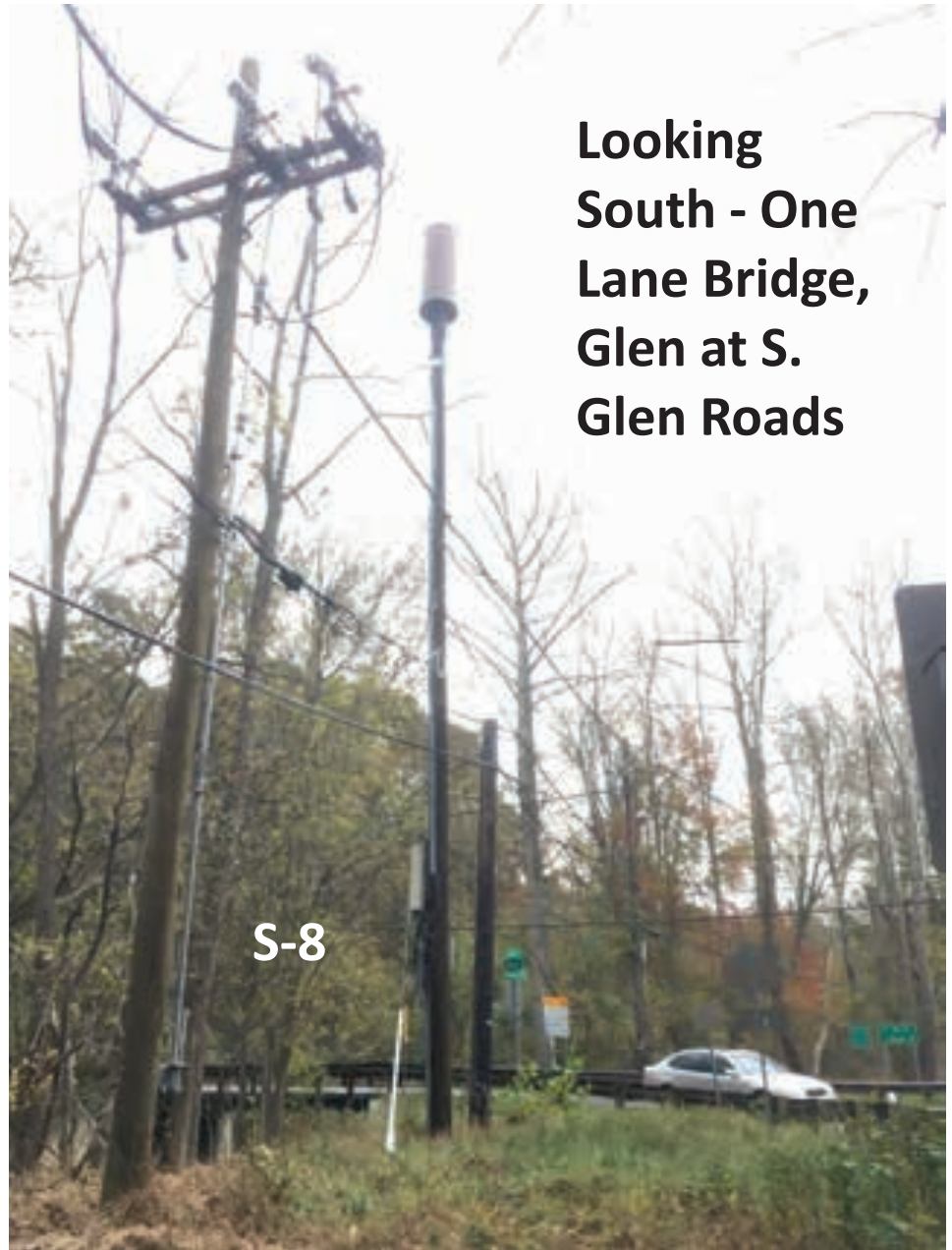
**One Lane Bridge, Glen at South Glen Roads  
Looking North. Whip cell is barely noticeable. - April, 2012**



## Obtrusive cell tower adjacent to park land on rural rustic road



**Whip antenna on pole.  
April, 2012**

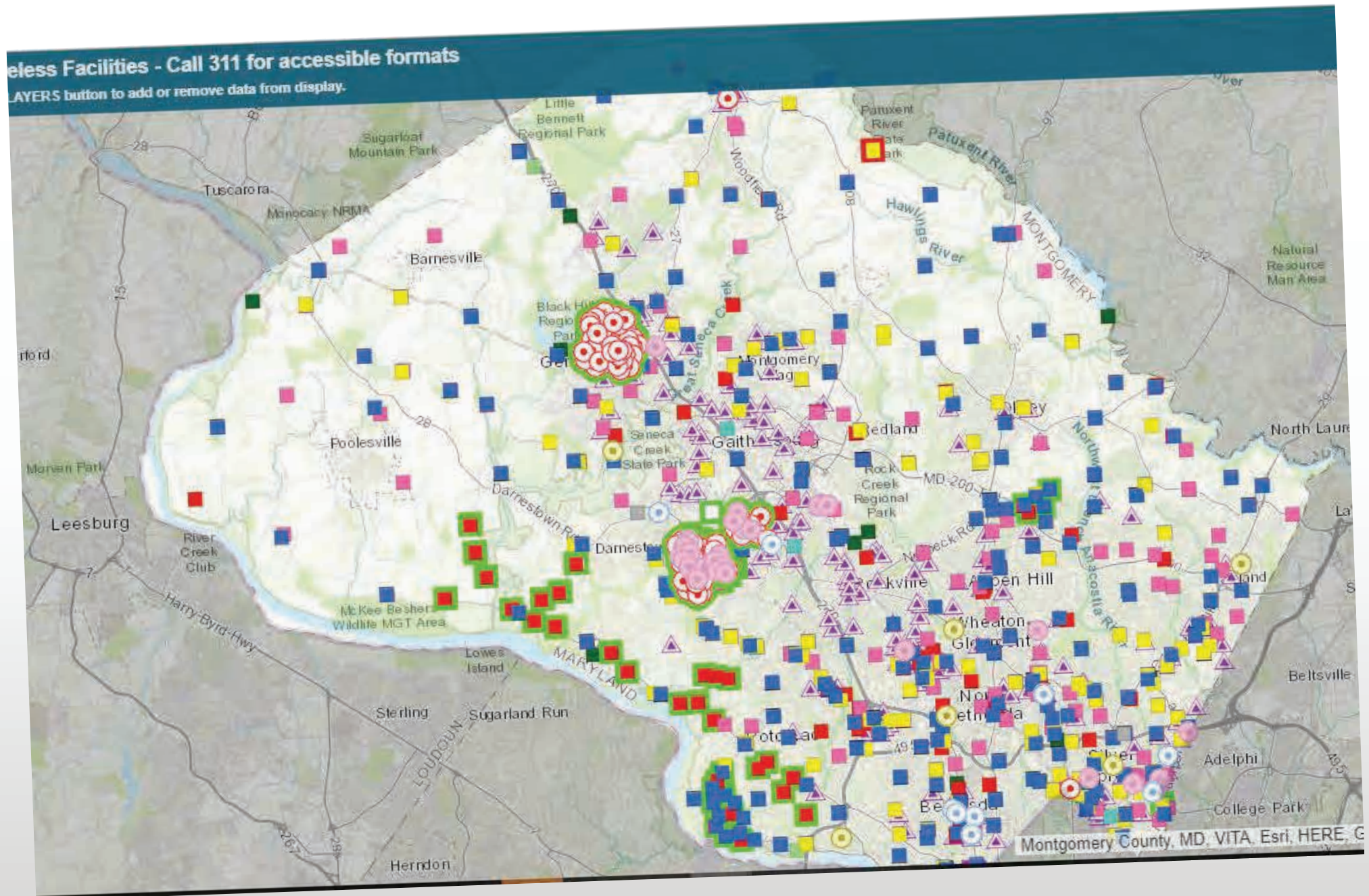


**Replacement ("Modified") DAS Facility  
November, 2017**

# What's Coming?

- 120 pending “tabled” (paused) applications for small cells in rights of way in Montgomery County
- Estimated backlog of **700** potential applications
- To be submitted after updated passage of residential zoning text amendment (ZTA 18-11)
- For immediate installation
- Most are for utility poles in public rights of way
- Other estimates: >1000 cell poles next three years.





Circles represent proposed and/or pending

# ZTA 18-11 “in play” right now...

- **30'** setbacks from front doors
- Neighborhoods with above ground utilities
  - utility poles and tall light eligible for “limited use”
- Neighborhoods with under ground utilities
  - Lights under 22' only modified by “conditional use ”
- Minimal to no design standards
  - 20 cubic foot equipment cabinets (see Santa Rosa)
- No Notice.
- No changes to public input processes.
  - Meaning NO public input.

# ZTA 18-02 passed in May, 2018

- Radical changes to prior zoning for Industrial, Commercial and Mixed use zones.
  - 1 to 1 set backs for towers up to 179' (in lieu of 300")
  - 10 foot setbacks from existing buildings
  - Almost everything eligible for limited use
- Streetlights can be “replaced” with pole up to 15' taller
- Utility poles/Parking lot lights can be “replaced” by pole that is 10' taller
- Antennas allowed on lower roof tops
- Minimal to no design standards.
  - Enlarged allowances for cabinets
- **No Notice.**
- No changes to public input processes.
  - **Meaning NO public input.**

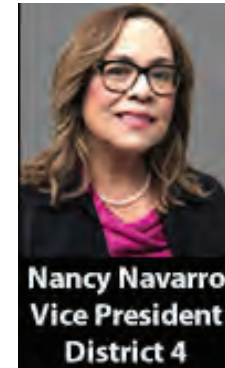


# Results of October 10, 2018 Council Work Session

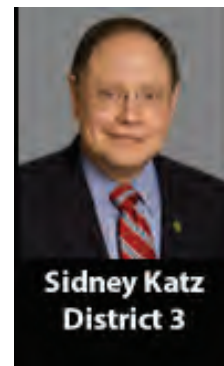
Pass it quick



Amend it



Citizen Task Force  
“Charette”





# MC4T.ORG



Montgomery County Coalition for the Control of Cell Towers

Rick Meyer

President

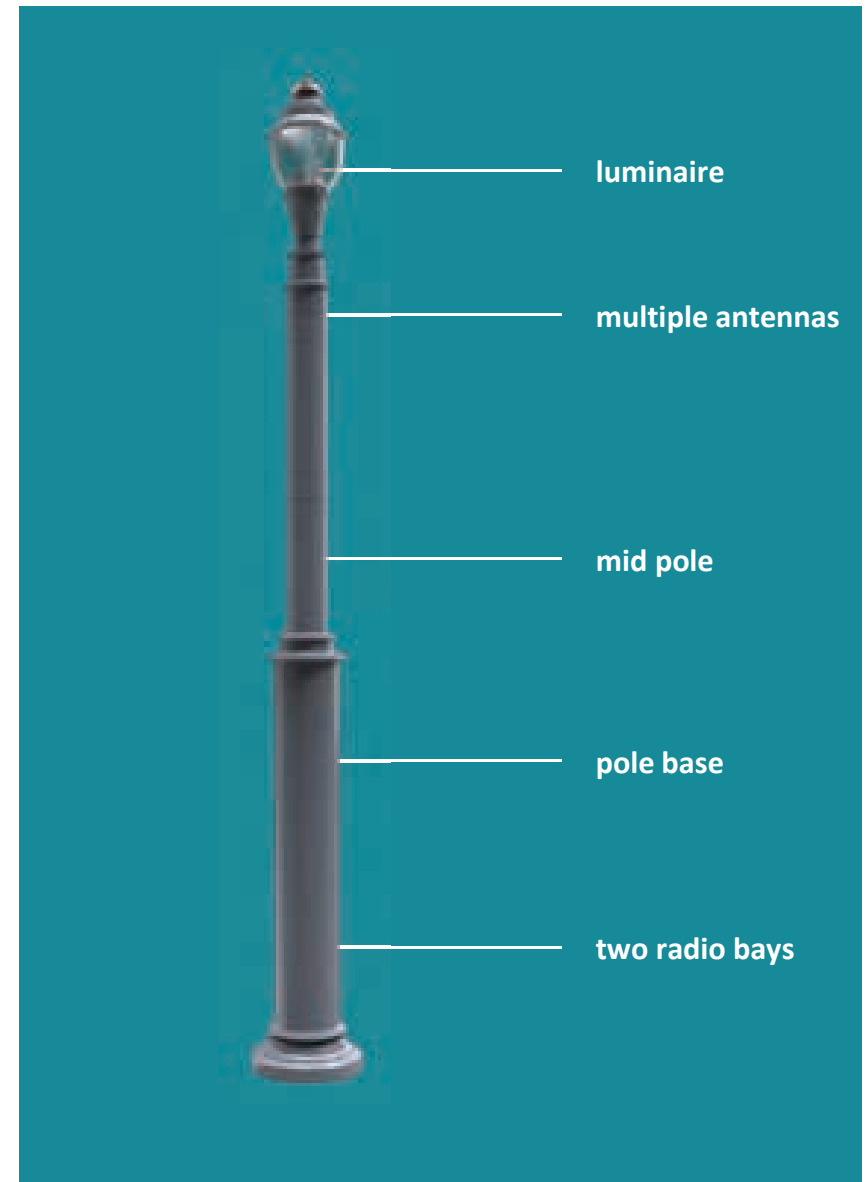
Wemeyer@yahoo.com

MC4T is fighting for fair, transparent and accurate regulation of cell poles and cell towers to minimize adverse impacts to surrounding land uses, respect the harmony and aesthetic character of our communities, and protect the safety of all residents. [Join us!](#)

# **Additional Information**

# The Smart Fusion Pole

- › Prime Locations
  - › Access to hundreds of thousands of street-level sites in urban markets
- › Large-Scale Deployment
  - › Cluster permitting allows the deployment of a large volume of sites at a time
- › Fast and Easy Installation
  - › Plug-and-play flexibility for radio installation, ready access for mobile network operators
- › Future-Ready Access
  - › Capability to host current and future radios and antennas
- › Aesthetic Design
  - › Hides wireless equipment in plain sight and blends into any cityscape
- › Supports Multiple Mobile Network Operators
  - › Shared infrastructure to maximize scale and speed



# Industry-leading aesthetics

High emphasis on aesthetics replacing existing light poles

- › Variety of luminaires available
- › Integrated antennas
- › Universal design to match any traditional or decorative streetlights in the U.S.
- › Base for remote radio heads is a structural part of the pole



## Decorative family

12' Decorative example

8" wide mid-pole

14" wide base

7' tall base



## Cobra Head family

20' Cobra Head example

8" wide mid-pole


14" wide base

7' tall base

**ATTACHMENT B**

**to the Public Comment by Resident Groups of Montgomery County, Maryland**

**Date****Source / Statement**

November 6, 2019	<p><b>Zoning for Our Wireless Future — written by Councilmember Hans Riemer, lead sponsor of the ZTA*</b></p> <p><a href="http://councilmemberriemer.com/2019/11/zoning-for-our-wireless-future.html">http://councilmemberriemer.com/2019/11/zoning-for-our-wireless-future.html</a></p> <p>"But our current zoning code was designed with big cell towers in mind, and requires that any cellular antenna be set back 300 feet from the nearest home...That is why I have joined with my colleagues Gabe Alborno and Craig Rice to introduce a zoning change to allow small wireless antennas to be added to utility or light poles, provided they are not closer than 30 feet to a home. <i>Why 30 feet? Well, the typical home is set 25 feet back from the street. With 30 feet minimum distance required, homeowners whose residences are closer to a pole than average will not bear a disproportionate visual impact.</i> You likely rely upon wireless. <i>Will you have advanced networks at your home if your wireless company can only use utility poles that are farther than 300 feet from your house? The answer is no, because most likely none of the utility poles in your neighborhood are farther than 300 feet from the nearest house. No poles, no network. ... Without this zoning change, however, our wireless providers will not be able to install the new networks. The companies will eventually take us to court, because Congress and the FCC have already established that local governments can't block networks.</i>" [emphasis added]</p> <p>"P.S., <i>You might see some people claim that Radio Frequency emissions cause cancer. Safety always comes first, I agree. But, the American Cancer Society says "Cell phone towers are not known to cause any health effects."</i> Read for yourself what the ACS has to say about cell phones and cell towers, based on input from many scientific studies and expert agencies. Then read this <a href="#">New York Times piece about 5G and health</a>, and <a href="#">this piece about how Russian disinformation agents have targeted Americans with 5G scaremongering.</a>"</p> <p>* <b>Note:</b> This opinion piece above argues in favor of setbacks as low as 30 feet. In November 2019, the proposed version of the ZTA included a minimum setback of 60 feet, which could only be lowered to 30 feet under certain conditions. However, in March 2021, the ZTA was amended to allow towers only 30 feet from homes with no notice, and zero setback after giving notice. See <a href="https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/zta/2019/ZTA_19-07.pdf">https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/zta/2019/ZTA_19-07.pdf</a></p>
January 4, 2020	<p><b>Twitter:</b></p>  <p><b>Hans Riemer</b> @hansriemer</p> <p><a href="#">Jan 4, 2020</a></p> <p>Sorry but FM radio, wifi, 3g, 4g, 5g is all the same and not dangerous. You are peddling junk science like the anti vaxxers.</p>



<p>March 11, 2020</p>	<p><b>Opinion in the Washington Post titled "Montgomery County should not let junk science stop 5G"</b>  <a href="https://www.washingtonpost.com/opinions/local-opinions/the-deployment-of-5g-sparks-a-turf-war-in-montgomery-county/2020/03/05/706510b2-5279-11ea-b119-4faabac6674f_story.html">https://www.washingtonpost.com/opinions/local-opinions/the-deployment-of-5g-sparks-a-turf-war-in-montgomery-county/2020/03/05/706510b2-5279-11ea-b119-4faabac6674f_story.html</a></p> <p>Mr. Riemer was featured in this Opinion piece <b>written by Art Brodsky*</b> as a long-time promoter of small cell deployment. It was noted that a pro small cell 5G speaker was "harassed and harangued by the true believers in junk science with such vehemence.....".</p> <p><i>* Note that MG5Gpartnership.com prominently features a link to a "guest column" that contains this article. Mr. Brodsky is a freelance telecommunications writer who regularly appears in various publications. Similar to Mr. Riemer, Mr. Brodsky also classifies opponents of 5G as peddlers of "junk science."</i></p>
<p>June 29, 2021</p>	<p><b>Council meeting</b>  video — ZTA 19–07 starts @ approx. 2:04:28  <a href="https://youtu.be/Fy98kb_omS4?t=7468">https://youtu.be/Fy98kb_omS4?t=7468</a></p> <p><b>Councilmember Hans Riemer, lead sponsor of the ZTA:</b>  "I think it's really about whether we all and I believe we do have a better understanding of public health, and how the public health system works, and who we would listen to on matters of public health. And we I'm going to want to talk about this very briefly once at the outset, I don't think we really need to spend much time on it. <i>But we're hearing a lot of false claims about health concerns for the waves that come out of our devices, you know, that connect from our device to an antenna that connect from a Wi-Fi router in our house to our laptop, you know, connect, frankly, AM FM radio or all of this is all part of a spectrum. It's called non ionizing radiation. And science has not yet found a health concern with any of it. &lt;&lt; &gt;&gt; It is one of the most extensively studied issues out there. And if we were hearing from people like Dr. Fauci, Dr. Walensky, the head of the FDA that they had a concern like we would all know, if our leading scientific agencies were concerned about this. We do not hear from them.</i>" [emphasis added]</p>
<p>June 29, 2021</p>	<p><b>Council meeting</b>  Memorandum prepared by Council staff attorney as advice to Council, page 12. The dismissal referred to below was in the case of <i>Montgomery County v FCC</i>, which was dismissed on procedural grounds in August 2020 and later followed by a successful petition by <i>Environmental Health Trust et al. v FCC</i>, which was decided August 13, 2021. <i>Environmental Health Trust</i> advanced many of the same arguments that Montgomery County put forward when the County had previously chosen to be a co-petitioner.  <a href="https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210629/20210629_4.pdf">https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210629/20210629_4.pdf</a></p> <p>"Under federal law, local jurisdictions are preempted from regulating telecommunications antennas because of health effects as long as those facilities are operating within FCC-determined power and RF ranges. In its appeal of the FCC order, the County challenged the FCC's failure to address RF emissions. In addition, the County and other jurisdictions asked the FCC to update and complete a 2013 evaluation of the existing RF safety standards. The FCC has refused to review its standards and has disagreed with concerns raised about RF emissions from 5G small cell antennas. The [Ninth Circuit] dismissed the County's challenge as moot, finding that the FCC's additional order considered RF exposure risks of 5G services."</p>

<p><b>July 13, 2021</b></p>	<p><b>Council meeting</b>  Memorandum prepared by Council staff attorney as advice to Council, page 5. The dismissal referred to below was later appealed successfully in <i>Environmental Health Trust v FCC</i>.  <a href="https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210713/20210713_10A.pdf">https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2021/20210713/20210713_10A.pdf</a></p> <p>“In <i>City of Portland v. United States</i>, the United States Court of Appeals for the 9th Circuit ruled on petitions filed by a coalition of local governments, including Montgomery County, challenging multiple FCC orders governing small cell telecommunications facilities. The 9th Circuit also ruled on the County’s separate petition, which argued that the FCC erred by not updating its regulations governing Radio Frequency (RF) emissions before issuing the small cell order. The 9th Circuit dismissed as moot the County’s petition”.</p>
<p><b>July 13, 2021</b></p>	<p><b>Council meeting</b>  video — ZTA 19–07 starts @ approx. 10:36  <a href="https://www.youtube.com/watch?v=TzIFJo358Ow&amp;t=636s">https://www.youtube.com/watch?v=TzIFJo358Ow&amp;t=636s</a></p> <p><b>Council Vice President Gabe Albornoz, co-sponsor of the ZTA:</b>  "I do put a tremendous amount of faith in our federal agencies ... and the systems that we currently have in place, have conducted their own extensive research on a variety of issues that impact us."</p> <p><b>Councilmember Hans Riemer, lead sponsor of the ZTA:</b>  "The National Institutes of Health, the National Cancer Institute, located in Montgomery County, not the only federal agency with oversight here for health, ..., you can see similar information on the <b>FDA</b> website, and is actually an agency called the National Council for Radiation Safety. And it's actually the true scientific agency charged with monitoring the research, it's based in Bethesda, they all say the same thing. The National Cancer Institute's page makes very clear that the waves coming out of our devices are not of health concern, presuming the installations follow federal policy. And that, you know, basically the way you could be injured by these waves is if you were burned by them, they were so concentrated that actually would burn your skin, that the heat would cause some kind of damage to your DNA. I think it's clear to all of us that we are nowhere, nowhere near anything like that. And that's that basic theoretical framework for this entire you know, body of research has been in place for decades. And in fact, it's one of the best understood concerns.... <i>With all existing research. The weight of it all together, clearly establishes it, safety. Research is always ongoing; World Health Organization comes to the same conclusion. So if you don't believe that, you know, there is a health concern, what is the basis of trying to severely restrict these installations? I just ask everyone to think, think about that question, what is the basis of trying to severely restrict these if you actually follow the science and believe the science.</i>" [emphasis added]</p>
<p><b>July 20, 2021</b></p>	<p><b>Council meeting</b>  video — ZTA 19–07 starts @ approx. @ 28:31  <a href="https://youtu.be/QSta29AgP8Y?t=1711">https://youtu.be/QSta29AgP8Y?t=1711</a></p> <p><b>Councilmember Hans Riemer, lead sponsor of the ZTA:</b>  "I have posted several times in the past few days what I think is critically important guidance from the <b>FDA</b>, the National Cancer Institute, the American Cancer Society, the World Health Organization, and many, many of all of the leading scientific institutions that have purview to this issue have weighed thousands of studies conducted over decades. And they are very clear. And their conclusion that they're not seeing evidence of health impacts from our phones."</p>

July 27, 2021

**Council meeting**

video — ZTA 19–07 starts @ approx. 3:07:57  
<https://youtu.be/H4VEoPHedxc?t=11277>

**Councilmember Hans Riemer, lead sponsor of the ZTA:**

"What the scientific agencies do, the National Cancer Institute, the **FDA**, CDC, the World Health Organization, what they do is they look at all the studies, and they add them all up into a ledger. And they say, what is most compelling? What studies bring the strongest evidence? That is the scientific process here. And there's no real argument among those agencies, they all arrive at the same conclusion. There is an Institute based in Bethesda. It's called the National Center for Radiation Safety. It's headquartered in Montgomery County, the scientists there have been working on these issues for decades, I've spoken with them, they are very clear that the radiofrequency emissions on one side of the spectrum are very, very limited risk. And those on the other side have very high risk. That's your x rays and all those other things. *But the spectrum kind of breaks in half. And everything on the non-ionizing side has been found for more than 100 years now not to be dangerous. It's the same thing as AM / FM radio. And when radio was started, people said that birds were dropping out of the sky from radio waves. You know, it's our home Wi-Fi. It's non-ionizing radiation. If you believe it's dangerous, you should turn off your Wi-Fi. And honestly, if we really believed it was dangerous, we should ban Wi-Fi. I mean, do we really believe it's dangerous? Now? If we did, we would act you know. So the scientific method you have to be comfortable with a little bit of more research is needed as a concept. At the same time, trusting and I'm willing to trust in the authorities that are charged with this work. ... colleagues know at times I have taken controversial views, controversial positions on issues like polystyrene, we banned polystyrene, because I was convinced that there was an issue there, we banned lawn pesticides, you know, but chemicals and radio, radio frequency waves are extremely different. And that's something that the chief scientist explained to me. You know, a chemical could have unknown impacts. radio frequency waves generally have very known impacts whatever part of the spectrum they're from, on the non-ionizing side.*" [emphasis added]

"So, in any event, I think with the NIH, the **FDA**, the National Center for Radiation Safety, all headquartered Montgomery County, we would be well advised to follow their guidance. There are 1000s of employees who are our constituents. *And last thing I'll say there is a correlation between the extreme views on this issue and other issues like vaccine criticism, anti facts and anti 5g. There's common ground there. There are 5g conspiracies, about microchips being implanted in vaccines, you've heard about that. This is what our communities are being inundated with, day in and day out is disinformation. And our job is to sift through it all.*"

**Councilmember Craig Rice, Co-Sponsor of the ZTA:**

"So let's not be the alarmist who tries to make it seem as though you know, we're doing something that's going to jeopardize this the health and safety of our community. Many of us have thought about that. And although we can't think about it, in terms of how we vote on this particular ZTA, it doesn't mean that we don't think about it, we're still human beings. These are our families; we have children who will be near these things. So we of course, care about it. *So let's just be real about the fact that yes, we consider this we're the same council who, you know, ban, or who made it mandatory to be radon testing, why? Because radon is proven, right, proven to cause cancer or cause lung cancer.* And so we took steps, I led that effort. So we do care about health, we do care about causing cancer, we are concerned about those kinds of things. So yes, while we can't, in consideration of moving the ZTA forward, say that this is a reason why we shouldn't do it. It doesn't mean that we don't think about it, then we don't care about it. And we wouldn't move forward if we thought we were doing something dangerous, period." [emphasis added]

"Just lastly, when it comes to you know, Councilmember Jawando's comment about the *Environmental Health Trust v. FCC* court case, but there are always going be court cases . . . Now, as more information comes about, obviously, *if a court case comes down and changes where things are not just us here in little Montgomery County, but across the United States of America will have to make adjustments based on what that ruling is.* So this affects more than just Montgomery County." [emphasis added]

<p>July 28, 2021</p>	<p><b>Excerpt from an email from Councilmember Hans Riemer, lead sponsor of the ZTA, to constituents following the Council's passage of ZTA 19-07 allowing cell towers in close proximity to residences</b>  <a href="https://councilmemberriemer.com/2021/07/we-need-better-wireless-service-now-we-will-get-it.html">https://councilmemberriemer.com/2021/07/we-need-better-wireless-service-now-we-will-get-it.html</a></p> <p><b>What do leading public health authorities say about cell phones and 5G?</b>  Safety comes first. Fortunately, the science on wireless waves is compelling. The leading national and international scientific institutes continue to find that cell phones are not linked to health problems. The <b>FDA</b>, which we are proud to have located here, reviews the existing studies and puts them all into a balance. The <b>FDA</b> clearly says, the "weight of scientific evidence has not linked cell phones with any health problems."</p> <p><i><b><u>This has been a tough one. If you've seen some alarmist messages on your local listserve, I hope this email has been helpful. You might also enjoy this article about how the KGB is funding disinformation about 5G</u></b></i> [emphasis added]  <a href="https://www.nytimes.com/2019/05/12/science/5g-phone-safety-health-russia.html">https://www.nytimes.com/2019/05/12/science/5g-phone-safety-health-russia.html</a></p>
<p>Various  <b>MD5GPartnership.com</b>  articles</p> <p><b>* Note: MD5gpartner-ship.com members include such wireless and infrastructure providers as T-Mobile, Crown Castle and Verizon.</b></p>	<p><b>An Overview — Montgomery County's Small Cell Legislation</b>  <a href="https://md5gpartnership.com/wp-content/uploads/2021/05/ZTA-one-pager.5.2.21.2.pdf">https://md5gpartnership.com/wp-content/uploads/2021/05/ZTA-one-pager.5.2.21.2.pdf</a> *</p> <p><b>Excerpts</b></p> <p>Since 2017, the Council has also considered legislation that would permit and streamline small cell antennas in residential zones, with the latest effort beginning in October 2019 when residential ZTA 19-07 was introduced. Following a public hearing in November 2019, Council discussions on ZTA 19-07 were put on hold.</p> <p>ARE SMALL CELLS SAFE? The consensus among the scientific and health communities is that there is no evidence of any adverse effects from exposure to radiofrequency (RF) emissions below <b>FCC</b> exposure limits. RF emissions safety has been studied for more than 60 years and the research is subject to constant review by government health agencies, and standard-setting organizations, like the <b>FCC</b> and <b>FDA</b>. In December 2019, the <b>FCC</b> reaffirmed safety standards on a unanimous and bipartisan basis. RF energy from antennas used in cellular transmissions, including small cells, result in exposure levels well below <b>FCC</b> safety limits.</p> <p>MD5g Partnership Launches in Support of 5G Deployment Throughout Maryland  <a href="https://md5gpartnership.com/md5g-partnership-launches-in-support-of-5g-deployment-throughout-maryland/">https://md5gpartnership.com/md5g-partnership-launches-in-support-of-5g-deployment-throughout-maryland/</a></p> <p>Montgomery County Should Not Let Junk Science Stop 5G  <a href="https://md5gpartnership.com/montgomery-county-should-not-let-junk-science-stop-5g-2/">https://md5gpartnership.com/montgomery-county-should-not-let-junk-science-stop-5g-2/</a></p> <p>Will Montgomery County Fall Behind?  <a href="https://md5gpartnership.com/will-montgomery-county-fall-behind/">https://md5gpartnership.com/will-montgomery-county-fall-behind/</a></p> <p>County Council Amends Bill that Could Allow 5G Cell Antennas, Rejects Further Delay  <a href="https://md5gpartnership.com/county-council-amends-bill-that-could-allow-5g-cell-antennas-rejects-further-delay/">https://md5gpartnership.com/county-council-amends-bill-that-could-allow-5g-cell-antennas-rejects-further-delay/</a></p> <p>Montgomery County: Support for ZTA 19-07  <a href="https://md5gpartnership.com/montgomery-county-support-for-zta-19-07/">https://md5gpartnership.com/montgomery-county-support-for-zta-19-07/</a></p>

**ATTACHMENT C**

**to the Public Comment by Resident Groups of Montgomery County, Maryland**

**Dec. 1, 2020**

**To: Marjorie Williams, Chair, and Members of the Montgomery County Tower Committee**

**Re: Why Did 25 Wireless-Facility Applications with Serious Errors Pass MoCo Tower Committee Reviews?**

Ms. Williams and Members of the Montgomery County Tower Committee,

To protect public safety and prevent racial and social injustices, the Tower Committee must rigorously explore, in all the applications it reviews for proposed wireless facilities, whether they would illegally expose residents and workers to dangerous levels of radio frequency (RF) radiation that exceed limits established under Federal Law. This is a special concern when wireless providers seek to place and replace cell antennas on top of, or on the outside walls of, affordable residential buildings – which provide shelter disproportionately to families of color, immigrants, elders on limited income, and others whose housing choices are limited by their income and/or the effects of systemic racism.

*For this reason, we urge the Tower Committee to immediately launch an investigation into an apparent pattern of serious errors, involving just such questions of public exposure to RF emissions. Those serious errors were revealed in the 25 hastily amended applications on your [December 2 agenda](#), which are scheduled to receive extraordinary “reconsiderations” by you.*

We also urge the Committee to formally request that the County Executive immediately act to initiate independent, on-site RF emission measurements for all residential and other occupied buildings being used as wireless facilities – including measurements on rooftops, at windows and balconies, inside, and around the buildings. The County should ensure that the costs of these studies are covered in full by the applicants at each facility site.

All 25 newly modified applications involve wireless-facility proposals that you previously reviewed and, at meetings from June through October of this year, voted to recommend! (The committee’s recommendation allows applicants to then take the next step – applying to the County Department of Permitting Services for the actual building permit.) You did so apparently unaware of the serious errors in the information you relied on. *In fact, these applications have only been corrected beginning on Nov. 16<sup>th</sup>, 2020.* The 25 sites include nine residential buildings and seven office buildings being used as wireless facilities. Two of the 25 facilities are monopoles at MCPS high schools – including one with antennas directly over bleachers at a sports field.

Before the Committee votes to “reconsider” these applications we request a full public explanation of how these errors occurred, and why they were not caught previously by CTC – the company under contract with the County to provide staff support to the Tower Committee. The errors placed residents and workers at added risk, as they omitted meaningful information that impeded the County's ability to fully evaluate environmental hazards and to verify that the necessary steps for mitigation were properly defined.



We urge you to forego any second vote on whether to again recommend these modifications – or any other projects of T-Mobile, the wireless provider involved in **all** 25 cases – until your investigation is complete, corrective action taken to deal with these and any similar past errors involving T-Mobile or any other wireless provider, and mechanisms are in place to ensure that no application slips past your review again with such potentially dangerous errors.

A preliminary analysis of both the earlier and newly revised versions of the 25 applications re-submitted to you for an extraordinary second review and re-vote, and our understanding of FCC rules, reveal the following disturbing pattern:

- All 25 of the original applications significantly under-reported the Maximum Effective Radiated Power (ERP) of the proposed antennas, thereby understating the potential radio-frequency (RF) radiation that the antennas would emit and also creating the appearance that no Routine Environmental Assessment was required.
- This earlier under-reporting was accompanied by what now appear to have been inaccurate declarations – *on every application* – that the proposed antennas were eligible for "categorical exclusions" to such environmental reporting.
- Applicants then apparently failed *on every single initial application* to attach copies of such assessments – which include projections of whether the proposed antennas will create any areas where the level of RF radiation exceeds federal limits for public exposure or not. Such reports, based on our understanding of FCC rules for antennas that exceed certain Maximum ERP, are required under the County's own application process and by the FCC.
- Environmental reports have now been submitted with all but two of the revised applications. (It is not clear why those two revised applications do not have reports.) The reports that are now provided project that at least nine of the 23 sites at maximum operation could generate areas of RF radiation on rooftops that indeed exceed federal limits for the general public exposure. Those nine sites include one residential apartment building in Rockville where rooftop total RF emissions, from T-Mobile antennas and other antennas at the site, could be *as much as 89 times over FCC limits for the general public*. The FCC allows such excesses only if companies "mitigate" the exposures. And, Routine Environmental Assessments are necessary to determine mitigation steps. Some of these reports were prepared months ago. Others were only dated within the past few days.

At the minimum, we ask the Tower Committee to formally ask CTC and all appropriate parties (and require complete and for the permanent record **written** answers to) the following questions:

1. **How and why did these errors occur?** The files indicate that three separate intermediaries (Advantage Engineers, NB&C and Site Link) all acting on behalf of T-Mobile consistently presented inaccurate information for essentially the same make and models of antennas (and frequency ranges) at 25 sites since May, 2020.
2. **How and when were these errors discovered?** Did the applicants make the discovery and approach the Tower Committee with request(s) for correction – or conversely, did the Tower Committee have to confront the applicants to obtain corroborating documentation

to support the data in their applications? Why was CTC unable to spot and correct these errors in their review of initial applications?

3. **What was the process for correcting the errors and who made the changes to the applications?** It appears that employees of CTC made many/most of the revisions to the files just within the past two weeks, but some recent changes appear to have been made by employees of T-Mobile. Given the significance of these errors, why were applicants not required to present entirely new applications? Will relevant correspondence regarding error corrections for each of the applications be included in the permanent online files?
4. **How will the Department of Permitting Services be engaged in the process of evaluation of these errors?** How many of the Tower Committee's previous recommendations (based on erroneous information) have already been the basis of permits issued by the County Department of Permitting Services? Will DPS be provided with copies of the Routine Environmental Assessments so they may properly inspect the sites (particularly rooftops) to be sure remediation has in fact been performed?
5. **What processes will the Tower Committee and CTC implement to properly verify accuracy of future applications** so as to prevent these errors from recurring? What penalties if any are applicable?
6. **Will there be an audit of files for other wireless providers** to be sure the same pattern of errors has not been repeated at other sites, or at the same sites with other providers? And, will the audit go farther back in time than May 2020? If not, why not?

Thank you. We have attached a summary of the preliminary analysis that was prepared by some of the signers below. We request your immediate attention and response to this letter.

Sincerely,

Eric Meyer, Executive Director,  
Montgomery County Coalition for the Control of Cell Towers (MC4T.ORG)

Colleen Cordes and Karen Lovejoy, signing on behalf of Community Vision for Takoma

Sue Present, Resident of Montgomery County

Anne Ambler, Resident of Silver Spring

Tom Armstrong, Resident of Silver Spring

Cantor Dr. Ramón Tasat, Resident of Silver Spring

Dr. Marsha Coleman-Adebayo, the Bethesda African Cemetery Coalition (BACC)

Lisa Cline, Resident of Gaithersburg

Michael Feldman-Wiencek, Resident of Takoma Park

Molly Hauck, Ph.D., Resident of Kensington, signing on behalf of mocoSafeG

Kenneth C. Ingham, Author, Resident of Garrett Park

Robert Janku, Resident of North Potomac

Kopal Jha, Resident of Takoma Park

Barbara Lenkerd, Ph.D., Resident of Montgomery County  
Patty McGrath, Resident of Potomac  
Louise Mitchell, Member, Montgomery County Faith Alliance for Climate Solutions  
Irene Polansky, Resident of Silver Spring; Member, mocoSafeG  
Anna R. Pritchard, RN., BSN. LMT. CNC. Doctor of Naturopathy; Member, mocoSafeG  
Paul Pumphrey, Member of the Bethesda African Cemetery Coalition (BAAC)  
Natalie Rosser, Resident of Silver Spring  
Nancy Wallace, Co-Chair, Green Party of Montgomery County, MD, and signing on its behalf

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**ADDITIONAL SIGNERS, AFTER DEC. 1<sup>ST</sup>, 2020:**

Rabbi Alana Suskin, Co-Chair, on behalf of the Maryland Poor People's Campaign  
Lee McNair, on behalf of Cedar Lane UUC Environmental Justice Ministry  
Michelle Bailey, Resident of Silver Spring  
Marion Edey, Resident of Montgomery County  
Susan W. Kahn, Ph.D., Resident of Chevy Chase  
Katherine Katzin, Resident of Takoma Park  
Eugene Katzin, Resident of Takoma Park  
Ellen Kirsh, North Potomac  
Anna Olsson, Resident of Silver Spring  
Janice Smith, Resident of Chevy Chase  
Lois Edwards Velsey, Resident of Chevy Chase

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Implementing the Infrastructure Investment	)	GN Docket No. 22-69
and Jobs Act: Prevention and Elimination of	)	
Digital Discrimination	)	

**COMMENTS OF ADVOCATES FOR THE EMS DISABLED  
IN RESPONSE TO NOTICE OF INQUIRY**

Children’s Health Defense, Susan Foster, Medical Writer, Fire & Utility Consultant;  
Odette J. Wilkens, President & General Counsel, Wired Broadband, Inc.; Frank Clegg,  
(formerly, President of Microsoft Canada), Canadians for Safe Technology; Arizonans for Safe  
Technology; 5G Free California; Desiree Jaworski, Executive Director, Center for Safer  
Wireless; Kent Chamberlin, PhD, Former member of the NH Commission to Study The  
Environmental and Health Effects of Evolving 5G Technology; Californians for Safe  
Technology; Coloradans for Safe Technology; Larry Ortega, Community Union, Inc.; Paska  
Nayden, Connecticut for Responsible Technology; Cynthia Franklin, Director, Consumers for  
Safe Cell Phones; Ms. Antonella DiSaverio; Ms. Eva Bortnick; Families for Safe  
Technology.org; Howard Goodman, Esq.; Safe Technology Minnesota; Ms. Karol Kuehn; Keep  
Cell Towers Away, Elk Grove, CA; 5G Free Rhode Island; The Leto Foundation; Maine  
Coalition to Stop Smart Meters; Mrs. Marie Molnar; Mr. Andrew Molnar; Napa Neighborhood  
For Safe Technology; MA for Safe Technology; Mrs. Pamela Wallace, Director, Safe Tech  
Forward Michigan; New Hampshire for Safe Technology; New Yorkers 4 Wired Tech; Oregon  
for Safe Technology; Eugene J. Bazan, PhD, Secretary, PA Smart Meter Work Group;  
Pennsylvanians for Safe Technology; Stephen R Dahl, Director, Rhode Islanders for Safe  
Technology; Safe Tech International, Safe Tech 4 Santa Rosa; Virginians for Safe Technology;



Toxics Information Project; Ms. Anne Wilder, Priest River, Idaho; Ms. Donna Romo; Mark Wahl, Director, Citizen League Encouraging Awareness of Radiation of Whidbey Island, WA; Manhattan Neighbors for Safer Telecommunication; ElectromagneticHealth.org; Lendri Purcell, Founder, Families Advocating for Chemical and Toxics Safety; Ms. Linda Dance; Lex Kisteneff, CEO & Founder, The South Carolina Coalition for Wireless Safety Standards s; mocoSafeG.org in Montgomery County, MD; and Last Tree Laws (hereafter “Advocates for the EMS Disabled”) submit these comments in response to the Notice of Inquiry<sup>1</sup> in the above-captioned proceeding.

### **Introduction and Summary**

Advocates for the EMS Disabled applaud the Commission’s initial effort to “ensure equal access to high-quality, affordable broadband internet access service.” We also fully support the emphasis on “harms experienced by historically excluded and marginalized communities” and the desire for “meaningful policy reforms and systems improvements, as well as a framework for collaborative action to extend digital opportunity to everyone.” NOI ¶1.

The Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021) (“Infrastructure Act”)<sup>2</sup> seeks to “prevent and eliminate digital discrimination” “based on income level, race, ethnicity, color, religion, or national origin.” 47 U.S.C. §1754(b)(1). It demands “equal access” to “broadband services,” e.g., “the equal opportunity to subscribe to an offered service that provides comparable speeds, capacities, latency, and other quality of service metrics in a given area, for comparable terms and conditions.” §1754(a)(1)-(3). As noted in NOI §6 the Infrastructure Act supplemented the Commission’s pre-existing authority to ensure nondiscriminatory universal service for common carrier service and extended many of the same

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<sup>1</sup> Notice of Inquiry, *Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination*, FCC 22-21, GN Docket No. 22-69 (Mar. 2022) (“FCC DEI NOP”).

<sup>2</sup> Section 60506 of the Infrastructure Act is codified at 47 U.S.C. §1754, *Digital Discrimination*.

principles to broadband internet access service, which is part of “advanced telecommunications capability” but currently classified as a non-common carrier information service under the Commission’s current rules.

Advocates for the EMS Disabled also support the Commission’s enunciated goals to advance “equity in the provision of and access to digital communication services and products for all people of the United States, without discrimination on the basis of race, color, religion, national origin, sex, or disability.” NOI ¶7 (emphasis added). Although §1754(b)(1) does not expressly include the disabled community within its coverage, the general “equal access” to “all people” requirements in §1754(a)(2) and (3) implicitly do. Therefore, the Commission should conclude that the “listed characteristics in section 60506(b)(1)” are ***not*** “exclusive (NOI ¶24) and disability status is a protected “characteristic” for purposes of the Infrastructure Act. This interpretation would be fully consistent with existing Commission authority, [Executive Order 13985 \(Jan. 20, 2021\)](#) and the Commission’s [Equity Action Plan](#) responding to Executive Order 13985, which expressly recognizes that “persons with disabilities” “disproportionately lack access to broadband internet service.”

Even if the Infrastructure Act’s listed “characteristics” are fairly viewed as exclusive, the Commission has other general and specific authority to ensure the disabled do not suffer digital discrimination and have equal access to broadband:

- Section 152(18) incorporates the Americans with Disabilities Act definition (42 U.S.C. §12102).
- Section 225 contains special authority for the speech and hearing impaired.
- Section 255 requires that telecommunications equipment, customer premises equipment and telecommunications services be “accessible to and usable by individuals with disabilities” or at least be “compatible with peripheral devices or specialized customer premises equipment commonly used by individuals with disabilities.”

- Section 256 allows the Commission to participate in standards setting activities that “promote access to” “network capabilities and services by individuals with disabilities.”
- Section 1302(a) encourages “deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”
- The FCC is subject to Rehabilitation Act Section 504, 29 U.S.C. §794, and this proceeding along with any rules or policy determinations will be made as part of a “program or activity” as defined in §1.803 of the Commission’s rules. If the rules or policy determinations impact federal assistance the recipients will also be covered by Section 504’s nondiscrimination and access requirements relating to the disabled.
- There are many other codified and non-codified provisions addressing disabled access, universal service and nondiscrimination scattered throughout the Communications Act including, of course, the general and overarching purposes and policies stated in 47 U.S.C. §151.

These comments will make two principal points, one general and the other specific.

First, the Commission must continue to recognize that wireless-based services do not now and likely never will “provide[] comparable speeds, capacities, latency, and other quality of service metrics in a given area, for comparable terms and conditions” (§1754(a)(2)) in comparison to fiber to the premises. Wireless may constitute “advanced telecommunications capability” but it is still a *complement to*, not an adequate substitute for fiber-fed service. A wireless based user will not receive the same speed, capacity, latency or quality of service and the terms and conditions are not comparable to those for wired (fiber) based access. This is especially so for mobile services, but even fixed wireless solutions are inferior to direct fiber-fed service to the premises. The Commission should always prioritize “to the premise” fiber solutions and rely on wireless only when wired is technically or economically infeasible or the main purpose is mobility.

Second, the disability community is diverse. There are many kinds of disabilities due to a host of causes and each kind gives rise to different needs. There is, however, a much-ignored but large and growing part of the disability community that has been specially harmed and suffers

unique digital discrimination: those who cannot be around Radio Frequency Radiation (RF) because it makes them sick or sicker. Some estimates indicate that up to *thirty percent* of the population – almost 40 million people – suffer at least mild symptoms after exposure to RF.<sup>3</sup> Five percent (5%) – around 17 million – suffer moderate symptoms. One and a half percent (1.5%), or almost 5 million people suffer “severe symptoms” and 0.65% (2.16 million) are so disabled they cannot work at all. Those with “severe symptoms” have “physical or mental impairment[s] that substantially limit[] one or more major life activities.” 42 U.S.C. §12102(1)(A). They are the “EMS Disabled” community on behalf of whom these comments are filed. Wireless exposure is the direct cause of or a major contributing factor to the impairment. This technology is making millions of Americans sick, and it is past time that this pan-epidemic<sup>4</sup> be recognized and addressed.

Forcing exposure – even as part of a genuine and kind-hearted effort to afford broadband access – is itself a form of discrimination as a matter of law. More important it is fundamentally inequitable because it leads to great harm. Those with severe symptoms are functionally excluded from public participation since almost all public spaces are flooded with RF – a toxin to them. Those with wireless facilities nearby cannot even take refuge in their own homes; they are driven out and consigned to a more miserable and sometimes hostile and threatening environment.

If the Commission is sincere about achieving “diversity, equity and inclusion” it must recognize this specific problem and take the kind of special measures to address it that are within its regulatory remit. There must be an allowance for RF-free “safe zones” in public spaces and

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<sup>3</sup> The Prevalence of People with Restricted Access to Work in Manmade Electromagnetic Environments, <https://mdsafetech.files.wordpress.com/2019/10/2018-prevalence-of-electromagnetic-sensitivity.pdf>.

<sup>4</sup> “Scientists 5G appeal,” available at <http://www.5gappeal.eu/the-5g-appeal/>.



buildings to ensure inclusion in public life. The Commission can and should establish such zones, or at least allow local and state authorities to do so without threat or fear of litigation on preemption grounds. The attached paper by Susan Foster and Odette J. Wilkins, “Eliminating Digital Discrimination for the EMS Disabled” provides even more suggestions.

Those who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband; otherwise they will functionally be denied access to any broadband at all. The RF-sensitive community in general and especially the EMS disabled community in particular must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being.

## **I. WIRED (FIBER-BASED) BROADBAND SHOULD BE THE PREFERRED MODE OF BROADBAND ACCESS DELIVERY**

The Commission must continue to recognize that wireless-based services do not now and likely will never “provide[] comparable speeds, capacities, latency, and other quality of service metrics in a given area, for comparable terms and conditions” (§1754(a)(2)) in comparison to “fiber to the premises” (“FTTP,” also known as “fiber to the home” or “FTTH”) Wireless may constitute “advanced telecommunications capability”<sup>5</sup> but it is still a *complement to*, not an adequate substitute for fixed service<sup>6</sup> and especially FTTH. A wireless based user will not receive the same speed, capacity, latency or quality of service and the terms and conditions are not comparable to those for wired (fiber) based access. This is especially so for mobile services,

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<sup>5</sup> 47 U.S.C. § 1302(d)(1).

<sup>6</sup> See, *In re Inquiry Concerning Deployment of ATC to All Americans*, FCC 20-50, ¶¶10-12, 35 FCC Rcd 8986, 8991 (Apr. 2020) (“*Fourteenth Broadband Competition Report*”) (“...fixed broadband generally delivers faster speeds, permits higher consumption at a lower price, and has far higher data caps,... While users may substitute between mobile and fixed broadband when accessing certain services and applications, the record indicates that they are not yet functional substitutes for all uses and customer groups. Based on the record before us, we again find that fixed broadband and mobile wireless broadband services are not functional substitutes in all cases.”) (notes omitted).

but even fixed wireless solutions are inferior to direct fiber-fed service to the premises. The Commission should always prioritize “to the premise” fiber solutions and rely on wireless only when wired is technically or economically infeasible or the main purpose is mobility.

1. Fiber to the premise offers higher speeds, better reliability, is more secure and costs less.

FTTP is far superior to all other network architectures, including “fiber to the node” with the last link serviced through copper, coaxial or a wireless link. FTTP offers fully symmetrical multi-gigabit service, less opportunity for congestion because of backhaul limits, better reliability in the face of bad weather, no chance of signal obstruction by vegetation or buildings and lower aesthetic impacts that contribute to visual blight. It is more secure and presents lower risks from electrical fires. FTTP has lower energy needs in relation to wireless, so it has less environmental impact, as explained below. The fiber itself has almost infinite capacity;<sup>7</sup> it is limited only by the capabilities of the equipment at each end. Fiber is futureproof.<sup>8</sup>

Although FTTP does require a physical, tangible link all the way to the premise and often involves higher front-end capital costs and longer construction time, FTTP is far better over the long run. For example, the Total Cost of Ownership (TCO) is far less than the cost of Fixed Wireless Access over the long run. Operations, maintenance and replacement/upgrade costs are lower. The facilities themselves last for a very long time. Some periodic end-link equipment

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<sup>7</sup> Researchers in the Netherlands were able to transmit 255 terabits per second down a single strand in 2014. [255 Terabits/s: Researchers demonstrate record data transmission over new type of fiber](#), Eindhoven University of Technology (Oct. 27, 2014). A single fiber could, in theory, carry all the world’s traffic. [255Tbps: World's fastest network could carry all of the internet's traffic on a single fiber](#), Telepresence Options (Oct. 29, 2014).

<sup>8</sup> Former FCC Chairman Tom Wheeler Testimony to Congress, [https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony\\_Wheeler\\_FC\\_2021.03.22.pdf](https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony_Wheeler_FC_2021.03.22.pdf).

replacement may be required but the cost is relatively low in comparison to the costs associated with required persistent wireless node upgrades.<sup>9</sup> If one looks at long-run “cost per bit” FTTH is almost always the clear winner.

Dr. Timothy Schoechle, PhD, communications technology expert at the National Institute for Science, Law & Public Policy observes that, “[f]iber is unmatched in its speed, performance, reliability, etc. ... Wireless is not a substitute for fiber.”<sup>10</sup> Fiber is more affordable, scalable from symmetrical (upload and download) speeds of 100 Mbps to 1Gbps to 10Gbps, has a longer life span of 25-50 years and is safer and more cybersecure, has lower operational expenses,<sup>11</sup> and is available at more affordable prices. By contrast, wireless typically requires equipment upgrades, constant maintenance and re-investments about every 5 years. An example of fiber deployment, consumers in Hudson County, TN have multiple service options, which include speeds of up to 1000 Mbps (1 Gbps). Pricing and capacity are scalable and provide for 300 Mbps at \$57.99/month and 1 Gbps at \$67.99, in each instance with symmetrical speeds.<sup>12</sup> Wireless technology is not able to effectively compete with similar high-speed Internet, with the FCC only

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<sup>9</sup> A 2020 assessment of the cost to serve a King County, Washington community using FTTP and Fixed Wireless concluded that: “Overall, a fiber investment would have higher capital costs than wireless but much lower operating costs—and would be a better investment over time. Based on engineering and cost-estimation of both a wired (fiber-to-the-premises) and a fixed wireless solution for unserved King County, we conclude that overall, FTTP represents a better broadband solution than fixed wireless for most unserved areas of King County. While FTTP has a higher initial capital cost per passing than a fixed wireless solution, the total cost of operations of FTTP over a 10-year period would be approximately half that of fixed wireless in the same unserved areas—primarily because of the need to replace wireless equipment at relatively short intervals and the cost of leasing space on commercial towers.” Broadband Access Study, p. 21, King County, Washington (Dec. 2019), available at <https://kingcounty.gov/~media/depts/it/services/cable/202002-Broadband-Access-Study.ashx?la=en>.

<sup>10</sup> *Reinventing Wires*, Timothy Schoechle, PhD, National Institute for Science, Law and Public Policy, <https://electromagnetichealth.org/wp-content/uploads/2018/02/ReInventing-Wires-1-25-18.pdf>.

<sup>11</sup> <https://optics.fiberbroadband.org/Full-Article/reduce-network-operating-expenses-choose-ftth>.

<sup>12</sup> <https://bestneighborhood.org/tv-and-internet-hamilton-county-tn/>.

requiring 25 Mbps download / 3 Mbps upload speeds.<sup>13, 14</sup> The Fiber Broadband Association has shown that consumers prefer the symmetrical speeds that fiber provides.<sup>15</sup> As the largest fiber optics trade association in the U.S. states, “If it isn’t fiber, it isn’t broadband.”<sup>16</sup>

Most important, the retail price for FTTP is less expensive on a month-to-month basis than most of the current alternatives, especially mobile broadband. This is particularly so if one considers price using consumption (GB uploaded/downloaded over entire billing period) or using instantaneous demand (MB/GB capacity) as the metric.

FTTP provides the best capacity for remote learning for children and students, and more reliable access to medical and other services for the elderly and disabled during emergencies or severe weather when wireless service is more likely to be interrupted. FTTP would also prevent the exclusion of those disabled or suffering from wireless RFR who cannot be near wireless infrastructure or wireless Internet. These residents should have equal access to broadband – a necessary service – in a manner that does not injure them and that does not otherwise put them in harm’s way. After all, people cannot adopt a technology that is injuring them.

2. Mobile service is technically inferior, has more use limitations, has worse environmental and aesthetic impacts and costs more at retail.

Mobile broadband is technically inferior to FTTH. It may fit the definition of “advanced telecommunications capability in §706,<sup>17</sup> but it does not afford “comparable speeds, capacities, latency, and other quality of service metrics in a given area, for comparable terms and

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<sup>13</sup> <https://www.allconnect.com/blog/internet-speed-classifications-what-is-fast-internet>.

<sup>14</sup> <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2018-broadband-deployment-report>.

<sup>15</sup> [https://www.broadbandworldnews.com/document.asp?doc\\_id=773546](https://www.broadbandworldnews.com/document.asp?doc_id=773546).

<sup>16</sup>

<https://s3.amazonaws.com/files.fiberbroadband.org/download/3555.4237?AWSAccessKeyId=AKIAIZGD7FMLIYLBZNI&Expires=1650065068&Signature=CfFGHmOkZaAovAfuGmXXs2hDpKo%3D>.

<sup>17</sup> 47 U.S.C. § 1302(d)(1).



conditions”<sup>18</sup> when compared to FTTH-based services. Mobile broadband has lower speed, less capacity, often higher latency and lower quality of service, and the terms are far more onerous, especially for data.

Mobile broadband service typically has data caps and other use restrictions that make it less attractive as the primary means to fully engage in and use all the features, functions and services that can be accessed through advanced communications capability.<sup>19</sup> Those with limited means need equal access to these full capabilities, and mobile broadband simply does not suffice as the primary source, especially given pricing differences that make FTTH far less expensive on a capacity and per-bit basis and more amenable to sharing between multiple end user devices.

Environmental justice is a major part of diversity, equity and inclusion. “Climate change is an environmental justice issue because certain groups of people in the United States are disproportionately affected by climate change and are less able than others to adapt to or recover from climate change impacts.”<sup>20</sup> Although the *NOI* does not mention environmental justice, the environmental impact of various communications architectures on the “characteristics” covered by the Infrastructure Act must be considered in this proceeding.

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<sup>18</sup> 47 U.S.C. §1754(a)(2).

<sup>19</sup> *Fourteenth Broadband Competition Report*, ¶11 and nn. 41, 42, citing ADTRAN Comments at 7; Common Cause et al. Comments at 3, 21, 25-26; INCOMPAS Comments at 11-12; NTCA Comments at 2-3; Open Technology Institute & Access Now Comments at 12-13; CWA Reply at 4; Open Technology Institute & Access Now Reply at 10, 12-13. 42 ADTRAN Comments at 7; Broadband Connects America Comments at 10; National Rural Electric Cooperative Association (NRECA) Comments at 5-6; CWA Reply at 4. *See also*, *In the Matter of Communications Marketplace Report*, FCC 20-188, ¶¶137-139, 36 FCC Rcd 2945, 3043-3044 & associated notes (Dec. 2020) (“*2020 Communications Marketplace Report*”).

<sup>20</sup> United States Environmental Protection Agency, *Climate Change, Health, and Environmental Justice* (May, 2016), copy available at <https://www.cmu.edu/steinbrenner/EPA%20Factsheets/ej-health-climate-change.pdf>.

Mobile broadband requires far more energy than does FTTH.<sup>21</sup> The transition to 5G, whether 5G NR (non-standalone) or 5G Standalone NR, will exacerbate this situation until newer and far more efficient equipment can be designed and deployed and 5G networks can fully implement use of their emerging “sleep mode” capability.<sup>22</sup> But even with “sleep mode” the energy consumption profile will still be much higher than that associated with FTTH. Environmental Heath Trust provides an extensive summary of this and much more evidence on the topic, with citation to recent sources, on its website.<sup>23</sup> All this energy consumption will translate into far more greenhouse gas output, thereby contributing to existing climate issues.

Finally, FTTH does not contribute to visual blight or present significant aesthetics concerns. The last mile facilities can be entirely underground or lashed to existing utility infrastructure without much aesthetics ado. One of the most contentious aspects of local permitting for fixed and mobile broadband facilities, on the other hand, is the visual and other aesthetic problems. Simply put, they are ugly and most “concealment” efforts are shockingly

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<sup>21</sup> A 2020 study by the German by the Federal Environment Ministry and the German Environment Agency concluded that “Fiber optic is the most climate-friendly transmission technology” and “Fibre optic video transmission is nearly 50 times more efficient than UMTS.” Joint release by the Federal Environment Ministry and the German Environment Agency, Video streaming: data transmission technology crucial for climate footprint Fibre optic video transmission is nearly 50 times more efficient than UMTS, (Oct. 9, 2020), available at, <https://www.umweltbundesamt.de/en/press/pressinformation/video-streaming-data-transmission-technology>.

<sup>22</sup> The 5G Dilemma: More Base Stations, More Antennas—Less Energy? 5G networks will likely consume more energy than 4G, but one expert says the problem may not be as bad as it seems, Dexter Johnson, IEEE Spectrum (Oct. 3, 2018), available at <https://spectrum.ieee.org/will-increased-energy-consumption-be-the-achilles-heel-of-5g-networks>. For “sleep mode” background see Ericsson, A technical look at 5G energy consumption and performance, Frenger and Tano (Sept. 19, 2019), available at <https://www.ericsson.com/en/blog/2019/9/energy-consumption-5g-nr>.

<sup>23</sup> <https://ehtrust.org/science/reports-on-power-consumption-and-increasing-energy-use-of-wireless-systems-and-digital-ecosystem/>.

ineffective no matter the approach. People just do not want these things near their homes or in scenic areas, and for good reason.

3. Fixed wireless service is technically inferior and costs more from a consumption or demand perspective.

Fixed wireless service is closer to FTTH in terms of performance but still not the same. It too does not afford “comparable speeds, capacities, latency, and other quality of service metrics in a given area, for comparable terms and conditions”<sup>24</sup> when compared to FTTH-based services. Fixed wireless also presents many of the same environmental and aesthetic concerns as mobile, since similar equipment is used. FTTH is the clear preferred solution.

The Commission should always prioritize “fiber to the premise” solutions and rely on mobile or fixed wireless only when fully wired is technically or economically infeasible or the main purpose is mobility.

## **II. THE COMMISSION MUST FINALLY RECOGNIZE THE EXISTENCE OF AND NEED FOR SPECIAL MEASURES TO ADDRESS THE EMS DISABLED COMMUNITY**

The disability community is diverse – there are many kinds of disabilities due to a host of causes. There is, however, a presently invisible and ignored but large and growing part of the disability community that has been specially harmed and suffers unique digital discrimination: those who cannot be around RF because it makes them sick or sicker. Wireless exposure is the direct cause of or a major contributing factor to the very “physical or mental impairment that substantially limits one or more major life activities of” these individuals. 42 U.S.C. §12102(1)(A). Forcing exposure – even as part of a genuine and kind-hearted effort to afford broadband access – is itself a form of discrimination as a matter of law. More important it is fundamentally inequitable because it leads to great harm. Those with this condition are

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<sup>24</sup> 47 U.S.C. §1754(a)(2).

functionally excluded from public participation since almost all public spaces are flooded with RF – a toxin to them. When wireless facilities are nearby they cannot even take refuge in their own homes; they are driven out and consigned to a more miserable and sometimes hostile and threatening environment.

The paper attached to this filing goes into greater detail and provides four stories about EMS disabled individuals. There are millions more just like them – and the Commission itself is a major reason they are suffering today. RF sensitivity is **not** idiopathic. The biological evidence is clear, the science is clear, the medical community is closing ranks on this issue, and the FCC must now either get in front of the problem or get out of the way and let others with more health expertise and compassion begin instituting solutions.

If the Commission is sincere about achieving “diversity, equity and inclusion” it **must** finally recognize this specific problem, accept the blame for the FCC’s part in it and take immediate special measures to remediate the harms. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Those who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband as a matter of right; otherwise they will functionally be denied access to any broadband at all. Those who are RF-sensitive and especially those with EMS disabilities – like all other excluded and marginalized communities – must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being.

## **CONCLUSION**

The Commission should always prioritize “fiber to the premise” solutions and rely on mobile or fixed wireless only when fully wired is technically or economically infeasible or the main purpose is mobility. Those who are RF-sensitive and especially those with EMS disabilities



must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being. They should be able to obtain FTTH as a matter of right. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Those who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

Respectfully Submitted,

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The following groups and individuals have granted permission to counsel to submit these comments on their behalf under the name of “Advocates for the EMS Disabled”:

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## ATTACHMENT TO COMMENTS

Eliminating Digital Discrimination For the EMS Disabled (Susan Foster and Odette J. Wilkins)

## Eliminating Digital Discrimination For the EMS Disabled

According to Amnesty International “discrimination occurs when a person is unable to enjoy his or her human rights or other legal rights on an equal basis with others because of an unjustified distinction made in policy, law or treatment.” “Indirect discrimination is when a law, policy, or practice is presented in neutral terms (that is, no explicit distinctions are made) but it disproportionately disadvantages a specific group or groups.” “Direct discrimination is when an explicit distinction is made between groups of people that results in individuals from some groups being less able than others to exercise their rights.”<sup>1</sup>

“Digital discrimination” usually refers to bias built into algorithmic systems, such as in Internet search engines such as Google or Yahoo, “which gives rise to various forms of ‘digital discrimination.’”<sup>2</sup> The Federal Communications Commission’s Notice of Inquiry<sup>3</sup> uses the phrase in a different sense: it focuses on whether there is systemic discrimination in access to the “high-quality, affordable broadband” that allows people to use and enjoy the Internet. *FCC DEI NOI* ¶¶1, 2. This paper demonstrates that those who are disabled<sup>4</sup> by injuries caused by wireless radiation suffer from both algorithmic and access-based digital discrimination, sometimes directly and sometimes indirectly. The Commission has significantly contributed to this discrimination, at times knowingly so.

There is a large and diverse community of individuals who significantly suffer from wireless radiation exposure from wireless base stations, cell phones and other telecommunications infrastructure and devices. Many have symptoms that give rise to “impairment[s] that substantially limit[] one or more major life activities” 42 U.S.C. §12102(1)(A). Although there are various names for the condition, a common term is electro-magnetic sensitivity (EMS). Those with severe symptoms are “EMS disabled.”

This White Paper addresses:

- The impact of digital discrimination on the EMS disabled
- The EMS disabled are disadvantaged communities

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<sup>1</sup> Amnesty International, Discrimination, available at <https://www.amnesty.org/en/what-we-do/discrimination/>.

<sup>2</sup> “Algorithmic Regulation” by Karen Yeung and Martin Lodge, chapter on “Digital Discrimination” by Natalia Criado, 2019, <https://oxford.universitypressscholarship.com/view/10.1093/oso/9780198838494.001.0001/oso-9780198838494-chapter-4#:~:text=Digital%20discrimination%20entails%20treating%20individuals,automatically%20processed%20by%20an%20algorithm.>

<sup>3</sup> Notice of Inquiry, Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination, FCC 22-21, GN Docket No. 22-69 (Mar. 2022) (“*FCC DEI NOI*”).

<sup>4</sup> A Centers for Disease Control website “[What is disability?](#)” explains that:

A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions). There are many types of disabilities, such as those that affect a person’s:

Vision	Remembering	Hearing
Movement	Learning	Mental health
Thinking	Communicating	Social relationships

Although “people with disabilities” sometimes refers to a single population, this is actually a diverse group of people with a wide range of needs. Two people with the same type of disability can be affected in very different ways. Some disabilities may be hidden or not easy to see.

- Brief history on the disabled community's efforts to end discrimination
- How EMS communities compare to other disabled communities
- The settled science from the FCC, FDA, industry and independent experts on EMF health effects
- Federal agencies creating barriers for relief for the EMS disabled
- Energy consumption and pollution from wireless Infrastructure
- The need to accommodate the EMS disabled, metrics and guidelines
- Adopting Former FCC Chairman Tom Wheeler's "fiber-first" policy: fiber optics broadband is a necessity for disadvantaged communities, is the best solution to bridge the digital divide (although adopting a fiber-first policy would ameliorate but not eliminate discrimination against the EMS disabled)
- Addendum: Stories of the EMS disabled – in their own words

## The Impact of Digital Discrimination on the EMS Disabled

Digital discrimination involving algorithmic bias, e.g., in Internet search engine results, reflects and amplifies discrimination in physical space. The EMS disabled suffer algorithmic bias. Search results belittle and invalidate the sufferings of the EMS disabled. The following provides an insight into algorithmic bias:

"Digital discrimination entails treating individuals unfairly, unethically, or just differently based on their personal data that is automatically processed by an algorithm. Digital discrimination often reproduces the existing instances of discrimination in the offline world by either inheriting the biases of prior decision-makers, or simply reflecting widespread prejudices in society."<sup>5</sup>

For example, the scourge of racial discrimination has existed in the physical world throughout history. Its reflection in digital technologies is a new and emerging problem, arising from algorithms' use of race as a profiling factor.<sup>6</sup> Algorithmic biases also discriminate against the EMS disabled. A simple search on Google, for instance, yield results showing a bias against EMS symptoms caused by electro-magnetic frequencies (EMFs) or wireless radiation, despite settled scientific evidence to the contrary. However, the range of issues to address regarding the EMS disabled is even greater than just digital discrimination and extends to misinformation on the Internet that disadvantages the EMS disabled, though not specifically data run through algorithms.

The EMS disabled also significantly suffer from access discrimination, the subject of the *FCC DEI NOI*. They too need broadband, but exposure to wireless broadband emissions sets off their symptoms, so they cannot use wireless technologies or even be around wireless systems. They must use only wired broadband at home or work. A nearby wireless system can drive them from their own homes – a form of constructive eviction. Further, they must avoid many public spaces, including most government and civic buildings that are pervasively covered with electro-magnetic frequencies (EMFs) and radio frequency radiation (RFR) so they cannot meet in person with their government representatives or gather in public with the rest of society. The EMS disabled are unable to work or participate in society and they are routinely even driven from their homes and into homelessness. They egregiously suffer from direct and indirect digital

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<sup>5</sup> Digital Discrimination, Id.

<sup>6</sup> "Emerging digital technologies entrench racial inequality, UN expert warns," <https://www.ohchr.org/en/press-releases/2020/07/emerging-digital-technologies-entrench-racial-inequality-un-expert-warns>.



discrimination in the physical world, they face significant access discrimination and they are subjected to algorithmic discrimination.

## **The EMS Disabled are Disadvantaged Communities**

President Biden's Justice40 Initiative is designed "to deliver at least 40 percent of the overall benefits from Federal investments in climate and clean energy to disadvantaged communities."<sup>7</sup> The project focused on how disadvantaged communities should be defined<sup>8</sup> and what metrics the Environmental Protection Agency (EPA) should use to achieve the Initiative's goals.

How disadvantaged communities are defined is important and needs to be flexible and inclusive. The *FCC DEI NOI* correctly and properly includes the disabled as a whole, but it entirely ignores those disabled by injuries caused by wireless radiation – the EMS disabled. The *FCC DEI NOI* itself discriminates.

The EMS disabled, however, are disadvantaged communities. As an environmental justice issue, the communities that have been left behind are those injured from wireless radiation from base stations, cell phones, and telecommunications infrastructure facilities placed right next to their homes, businesses, schools, medical facilities and other public locations. These disadvantaged communities are significantly suffering from wireless radiation exposure as a result. Base station antennas are being forced onto residents, without notice, without their consent, and without any consideration to injuries to their health, no matter how much they are injured and despite incontrovertible evidence of those injuries.

Wireless radiation cannot be perceived with the naked eye or by smell (such as gas leaking from a stove) and therefore goes unnoticed until one develops symptoms or is injured by it. Nor is there an alarm, as is required for carbon monoxide detection, which also cannot be perceived with the naked eye or by smell, until it is too late to recover. Because wireless radiation is invisible, so, apparently, are the EMS disabled.

Presenting the information in this white paper is an effort to make visible what is otherwise invisible.

Those suffering from exposure to wireless radiation are known as having electromagnetic sensitivity (EMS), or EMS disabled, electromagnetic sensitivity ((ES), radiation poisoning or microwave radiation sickness. For purposes of this paper, we will use the U. S. Access Board designation of EMS disability going back to 2002.<sup>9</sup> Common EMS symptoms include sleep disturbances, chronic fatigue, chronic pain, poor short-term memory, difficulty concentrating (e.g., "brain fog"), mood disturbances (depression/ anxiety), skin problems, dizziness, loss of appetite, heart palpitations, tremors, vision problems, tinnitus, nose bleeds, asthma, reproductive problems and headaches, to name a few.<sup>10</sup>

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<sup>7</sup> <https://www.whitehouse.gov/omb/briefing-room/2021/07/20/the-path-to-achieving-justice40/>

<sup>8</sup> Native Americans are properly also considered disadvantaged communities. The United Keetoowah Tribe brought suit against the FCC because of the FCC's failure to conduct environmental review of 5G deployment under the National Environmental Policy Act (NEPA). The Court of Appeals for the D.C. Circuit in 2019 found that the FCC acted in an arbitrary and capricious manner in its rule for massive deployment of small cells, particularly with the planned 800,000 locations for 5G deployment in the U.S. To date, there has been no environmental review of 5G, and yet 5G is being deployed unabated.

<sup>9</sup> U.S. Access Board, *Advancing Full Access & Inclusion for All*, "Indoor Environmental Quality Project," <https://www.access-board.gov/research/building/indoor-environmental-quality/>.

<sup>10</sup> "Electrohypersensitivity as a Newly Identified and Characterized Neurologic Pathological Disorder" Int'l Journal of Molecular Sciences, <https://www.mdpi.com/1422-0067/21/6/1915>.

## Eliminating Digital Discrimination For the EMS Disabled (Susan Foster and Odette J. Wilkins)

EMS symptoms have been legally recognized as functional impairments. Sweden was the first country to recognize EMS as a functional impairment in 2002. EMS also became recognized: (a) in 2002 by the U.S. Access Board (the federal agency devoted to accessibility issues for people with disabilities),<sup>11</sup> (b) in 2007 by the Canadian Human Rights Commission,<sup>12</sup> and (c) in 2009 by the European Parliament.<sup>13</sup> Courts have awarded disability claims to people with ES in Australia,<sup>14</sup> France,<sup>15</sup> Spain,<sup>16</sup> United Kingdom,<sup>17</sup> and United States.<sup>18</sup>

Access, digital equity and digital inclusion are vitally important for those disabled or suffering from wireless radiation. The U.S. Access Board (which advises the Justice Department and other state and federal agencies under the Americans with Disabilities Act) notes that a U.S. National Institute of Building Sciences survey of a representative region found that 2-6% of the population are sensitive to electro-magnetic fields.<sup>19</sup> There are other sources showing the proliferation of EMF sensitivities and disabilities.<sup>20</sup>

A 2019 Bevington study,<sup>21</sup> analyzed the prevalence of EMF/EHS within the population:

0.65%	Can't work
1.5%	Severe symptoms
5%	Moderate symptoms
30%	Mild symptoms

Based on a population of 332.4 million people in the U.S., the numbers are shockingly high:

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<sup>11</sup> Johansson O. Electrohypersensitivity: state-of-the-art of a functional impairment. *Electromagn Biol Med.* 2006;25(4):245-58. doi: 10.1080/15368370601044150. PMID: 17178584.

<sup>12</sup> Policy on Environmental Sensitivities, Canadian Human Rights Commission, 2007, Policy Reviewed 2014.

<sup>13</sup> Full recognition of electromagnetic hypersensitivity (EHS) in Europe, European Parliament, 2009.

<sup>14</sup> 'Wi-fi allergies' issue flares up in Australia, iNews, <https://www.itnews.com.au/news/wi-fi-allergies-issue-flares-up-in-australia-356354>.

<sup>15</sup> A Woman Has Been Awarded Compensation For Being "Allergic to Wi-Fi", ScienceAlert, 31 August 2015, <https://www.sciencealert.com/a-woman-has-been-award-compensation-for-being-allergic-to-wi-fi>.

<sup>16</sup> Spain: High Court of Madrid Ruling Recognizes "Electrosensitivity" as Grounds for Total Permanent Disability, August 4, 2016, Maris, <https://www.elettrosensibili.it/2016/09/14/spain-high-court-of-madrid-ruling-recognizes-electrosensitivity-as-grounds-for-total-permanent-disability/>.

<sup>17</sup> Gadget 'allergy': French woman wins disability grant, August 27, 2013, BBC News, <https://www.bbc.com/news/technology-34075146>

<sup>18</sup> JML Law Wins Appeal in 'Unprecedented' Disability Case Against LAUSD For Failure to Accommodate Teacher With Electroma, March 26, 2021, Bloomberg <https://www.bloomberg.com/press-releases/2021-03-26/jml-law-wins-appeal-in-unprecedented-disability-case-against-laUSD-for-failure-to-accommodate-teacher-with-electroma>.

<sup>19</sup> U.S. Access Board – Advancing Full Access & Inclusion for All - "Indoor Environmental Quality Project," <https://www.access-board.gov/research/building/indoor-environmental-quality/>.

<sup>20</sup> Electrohypersensitivity (EHS) Is An Environmentally-Induced Disorder That Requires Immediate Attention, Dr. Magda Havas, *J. Sci Discov* (2019), <http://www.e-discoverypublication.com/wp-content/uploads/2019/03/JSD18020-final.pdf>; Presentation by Karl Maret, M.D., M.Eng., Presentation, 1-17-20, <https://www.youtube.com/watch?v=Xilsy3mcjCY>; "The Bioinitiative Report," <https://bioinitiative.org/>.

<sup>21</sup> "The Prevalence of People with Restricted Access to Work in Manmade Electromagnetic Environments," *Journal of Environment and Health Science*, <https://mdsafetech.files.wordpress.com/2019/10/2018-prevalence-of-electromagnetic-sensitivity.pdf>.

Percentages	Number of U.S. EMF Sensitive/Disabled
Can't work – 0.65%	2.16 million
Severe symptom – 1.5%	4.99 million
Moderate symptoms – 5%	16.6 million
Mild symptoms – 30%	99.7 million

Vulnerable communities are significantly and negatively affected by wireless radiation. Many of the EMS disabled and EMS sensitive are already disadvantaged and/or indigent and the condition only makes things worse. The condition itself often turns even accomplished professionals into indigency. The EMS Disable and EMS sensitive are not able to live, work or visit in spaces or buildings where wireless equipment is deployed. They also cannot successfully participate in virtual remote settings using free wireless connectivity because wireless broadband is a barrier to them: their lives are placed in jeopardy with any exposure to wireless. Children are also a vulnerable community and there is documented research on the adverse effects of wireless radiation as it penetrates even more deeply into the skulls of children compared to adults.<sup>22</sup>

Access to work is critical for disadvantaged communities. The EMS disabled are most affected when they cannot work safely in environments containing wireless radiation inside a building, such as Wi-Fi, or wireless radiation coming from outside a building from nearby base station antennas.<sup>23</sup> This is not a disability that only affects the EMS disabled but given the estimated number of people with EMS symptoms in the U.S., it has the potential of adversely affecting America's workforce. EMS disability can be accommodated by creating wireless radiation free zones that employ only wired facilities in the work environment.

### **Brief History On the Disabled Community's Efforts to End Discrimination**

The Rehabilitation Act of 1973 was a starting point, but the most significant express validation of and protection for the disabled was finally achieved in the U.S. with the passage of the Americans with Disabilities Act of 1990 (ADA). The manner of its passage is noteworthy. Wheelchair-bound Americans took to the Capitol steps, left their wheelchairs behind and crawled up the Capitol steps. Included among them was an 8-year-old disabled girl. This demonstration by these "wheelchair warriors" was captured by the media and called the "Capitol Crawl," as "a physical demonstration of how inaccessible architecture impacts people with disabilities."<sup>24</sup> The ADA extended the prohibition against discrimination beyond federal contractors to employment, public services and accommodations.<sup>25</sup>

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<sup>22</sup> See, <https://ehtrust.org/research-on-childrens-vulnerability-to-cell-phone-radio-frequency-radiation/> and <https://ehtrust.org/science/scientific-imaging-cell-phone-wi-fi-radiation-exposures-human-body/>.

<sup>23</sup> "The Prevalence of People with Restricted Access to Work in Manmade Electromagnetic Environments," <https://mdsafetech.files.wordpress.com/2019/10/2018-prevalence-of-electromagnetic-sensitivity.pdf>.

<sup>24</sup> History Series, "When the 'Capitol Crawl' Dramatized the Need for Americans with Disabilities Act," <https://www.history.com/news/americans-with-disabilities-act-1990-capitol-crawl>.

<sup>25</sup> International Brotherhood of Teamsters, "The Rehabilitation Acts of 1973 and 1974, and the Americans with Disabilities Act of 1990," <https://teamster.org/rehabilitation-acts-1973-and-1974-and-american-disabilities-act-1990/>.

EMS disability is as silent and invisible as the toxin that creates the disability in the first place. The 3% (mild) and 35% (moderate)<sup>26</sup> portion of the population (between 9,975,000 or 115,500,000 million Americans) suffering from EMS, however, cannot travel to Washington DC to potentially sit on the Capitol steps. RF is so pervasive any effort similar to the “Capitol Crawl” to raise awareness would put them at physical risk. These people have been silenced and rejected. They are isolated from play with other children, from study with fellow students, from advancement in the workforce and the financial means to support themselves in anything but subsidized housing. But even federally-subsidized housing is becoming inaccessible since those buildings appear to be a target for wireless tower leases because it is the path of least resistance in increasingly resistant communities.

### How EMS Disabled Communities Compare to Other Disabled Communities

The percentages of the EMS disabled are either comparable to or exceed the percentages of other disabled communities. The percentages of the population with electrosensitivity can range, internationally, from 1.5% to 13.3%. Also, based on Bevington’s 2019 study cited above, percentages in the U.S. can range from .65% to 30%, depending on symptom severity.

Many countries have documented a prevalence rate for electrosensitivity in several population-based studies of: 1.5% in Sweden (Hillert et al, 2002); 3.2% in California (Levallois, 2002); 5% in Switzerland (Huss, 2002); 9% in Germany (INFAS, 2006); 11% in the England (Hallberg & Oberfeld, 2006); 3.5% in Austria (Schröttner, 2008); and 13.3% in Taiwan (Tseng, 2011). The World Health Organization has noted that “approximately 10% of reported cases of EHS were considered severe.” (A similar term to EMS, EHS means electro-hyper-sensitivity.)

Other disabilities now widely recognized in the U.S. include intellectual and developmental disability and mobility disability. According to the Special Olympics, 1.9% of the U.S. population or about 6.5 million people in the U.S. have an intellectual and developmental disability The American Association of Intellectual and Developmental Disabilities notes that this disability can be caused by injury, disease, or a problem in the brain, severe head injury, stroke, neonatal complications, and may include Down Syndrome, Fetal Alcohol Syndrome or Fragile X Syndrome. According to the Centers for Disease Control (CDC), mobility disability (defined by the CDC as “serous difficulty walking or climbing stairs”) affects 13.7% of the population, or 45.2 million people in the U.S.

Location	Percentages of Electrosensitivity
Sweden	1.5%
California	3.2%
Austria	3.5%
England	11%
Switzerland	5%
Germany	9%
Taiwan	13.3%
United States	3.2% - 30%

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<sup>26</sup> C4ST Referencing Havas 2007, <https://c4st.org/what-is-electrosensitivity/>.

United States	Percentages of Other Disabled People	Millions Of People
Intellectual & Developmental Disability	1.9%	6.5 mil
<b>Mobility</b> Disability	13.7%	45.2 mil

## The Settled Science from Industry, Independent Scientists and Experts, and the FCC and FDA On EMF Health Effects

### Industry's Settled Science:

In 2000, the ECOLOG Institute, a research organization founded in 1991 by scientists from the University Hannover, was commissioned by T-Mobile in Germany (parent company to T-Mobile in the U.S.), to study the risks of electromagnetic fields (EMFs) because of the rapidly expanding mobile telecommunications industry. The aim was to evaluate EMF risks and the need for implementing precautionary health protection. The results were twofold: (1) findings of adverse health impacts associated with exposure to EMFs and (2) strong precautions and warnings to significantly lower the power of the EMFs to which the public would be exposed.<sup>27</sup>

This 2000 ECOLOG Institute study was apparently never distributed nor translated into English until a copy was leaked almost a decade later to a nonprofit who commissioned its translation. Here are some of the findings:

1. **Cancer:** “[e]lectromagnetic fields with frequencies in the mobile telecommunications range do play a role in the development of cancer. This is particularly notable for tumours of the central nervous system, for which there is only the one epidemiological study so far, examining the actual use of mobile phones. The most striking result of this study was an obvious correlation between the side at which the phone was used and the side at which the tumour occurred.”
2. **Leukemia:** “Higher risks were also demonstrated for several forms of leukaemia.”
3. **Testicular Cancer:** “The epidemiological findings for testicular cancer also need to be interpreted in conjunction with the results of the studies of fertility problems occurring in relation to high frequency electromagnetic fields.
4. **Cellular Research & Cancer:** “The results of the studies for all stages of cancer development from the damage of the genetic material via the uninhibited proliferation of cells and debilitation of the immune system (see below) up to the manifestation of the illness prove effects at power flux densities of less than 1 W/m<sup>2</sup>. For some stages of cancer development, intensities of 0.1 W/m<sup>2</sup> or even less may suffice to trigger effects.”
5. **Debilitation of the Immune System:** “Damaging effects on the immune system which can aid the development of illnesses were demonstrated in animal experiments at power flux densities of 1 W/m<sup>2</sup> (mouse, exposure duration 6 days, 3 hours per day, SAR (mouse) 0.14W/kg). In in vitro

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<sup>27</sup> Mobile Telecommunications and Health/Review of the current scientific research, ECOLOG Institut, Hannover, April 2000, available at <https://docs.google.com/document/d/1Rd2c900GURf9YYQY-L2MHAFDYGIeT2R1tyMZYQhZTEA/edit>.



experiments on lymphocytes, defects of the genetic material were demonstrated at power flux densities of circa  $10 \text{ W/m}^2$ . The presence of stress hormones, which when permanent can debilitate the immune system, was found to be increased in human experiments from power flux densities of  $0.2 \text{ W/m}^2$ . In animal experiments (rat) a similar effect was observed at a Specific Absorption Rate of circa  $0.2 \text{ W/kg}$ ."

6. **Influences on the Central Nervous System and Cognitive Function:** "Effects of high frequency electromagnetic fields on the central nervous system are proven for intensities well below the current guidelines. Measurable physiological changes have been demonstrated for intensities from  $0.5 \text{ W/m}^2$ . Impairments of cognitive functions are proven for animals from  $2 \text{ W/m}^2$ ."
7. **Electrosensitivity or Electromagnetic Hypersensitivity:** The sensitivity manifests in a variety of symptoms including: nervous symptoms such as sleep disturbances, headaches, exhaustion, lack of concentration, irritability, anxiety, stress, cardiovascular complaints, disruptions of hormones and metabolism, skin complaints. The composition and strength of the complaints varies enormously in different individuals. The correlation of the complaints with electromagnetic exposures and other environmental influences seems to vary strongly not only between affected persons but also in time, a fact that has so far impeded the conclusive scientific proof of a cause-effect relationship in provocation studies. The present results of scientific studies are often not conclusive and partly contradictory. On the other hand, however, there is a wealth of data.

"On the basis of current knowledge it is impossible to estimate the risk of electrosensitive reactions or to make recommendations for guidelines designed to avoid such a risk for the general population, **which is composed of sensitive and non-sensitive persons**". [Emphasis added]

The ECOLOG Institute then went on to emphasize the importance of developing "a strategy for the research of the electrosensitivity phenomenon and its incidence, **which would acknowledge the failure of traditional scientific methods to address the problem and allow the inclusion of the data available from the self-help groups and associations of the affected.**" [Emphasis added]. The ECOLOG study recommended that when the risk is impossible to estimate, precautionary health measures must be implemented:

- "If a security factor of 10 is applied to this value, as it is applied by ICNIRP and appears appropriate given the current knowledge, the precautionary limit should be  $0.01 \text{ W/m}^2$ . This should be rigorously adhered to by all base stations near sensitive places such as residential areas, schools, nurseries, playgrounds, hospitals and all other places at which humans are present for longer than 4 hours."

#### **Exposures of Mobile Phone Users**

- "Given the state of technology now and in the foreseeable future, it is currently technically impossible to apply the recommended maximum value for mobile base stations also to the use of mobile phones. However, a lowering of the guidelines to a maximum of  $0.5 \text{ W/m}^2$  should urgently be considered."
- "A particular problem in this exposure group is posed by children and adolescents, not only because their organism is still developing and therefore particularly susceptible, but also because many adolescents have come to be the most regular users of mobile phones."
- "Advertising towards this population group should be banned. Furthermore, particular efforts should be made to lower the exposures during calls. It would be recommendable to conduct

(covert) advertising campaigns propagating the use of headsets. It would also be important to develop communications and advertising aiming at minimising the exposures created by carrying mobile phones in standby mode on the body.”

In direct conflict with these findings and warnings, 22 years later, T-Mobile (U.S.) states on its website under “**Radio Frequency Safety:**”<sup>28</sup> Wireless phones emit low levels of radio-frequency (RF) energy during use. ***Based on scientific data currently available, T-Mobile has not determined that RF energy from wireless phones causes health risks.*** Nonetheless, we want our customers to be informed as the wireless industry and government agencies continue to monitor the ongoing scientific research on this important subject. [Emphasis added]

T-Mobile has chosen to not just ignore, but went on to purposefully misrepresent, the study results it commissioned.

There may be no better example of misinformation on the Internet that disadvantages the disabled, though not specifically data run through algorithms. Rather, this is an omission of the facts and findings of the ECOLOG Institute. The recommendations were replete with warnings to bring the levels of radiation down, particularly in vulnerable locations “residential areas, schools, nurseries, playgrounds, hospitals and all other places at which humans are present for longer than 4 hours.”

This misinformation has been perpetuated by global health organizations and government agencies: FCC, FDA and National Cancer Institute (NCI).<sup>29</sup> A fourth website is the World Health Organization (WHO) which also has a similar bias (due to conflicts of interests since a number of ICNIRP members are also members of the WHO EMF Project).<sup>30</sup> There appears to be no representation of the EMS disabled population in these institutions.

The damage this misinformation has caused the health and well-being of populations globally and particularly, the invisible and silenced EMS disability population, is unknown. But the outcome is easy to see. Many have been silenced, in very large part, because their friends, family members, physicians and local, state and federal government leaders get their information from the same four biased websites.

### **Facts and Statements by U.S. Preeminent Scientists and Experts In the Area of RFR Research**

As shown by the following facts and statements by the United States’ preeminent scientists and experts in the area of wireless RFR research, it is well established that wireless radiation exposure produces or has the recognized potential of producing biological effects.

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<sup>28</sup> “Radio frequency safety,” <https://www.t-mobile.com/responsibility/consumer-info/safety/radio-frequency-safety>.

<sup>29</sup> The FCC states that “currently no scientific evidence establishes a causal link between wireless device use and cancer or other illnesses.”

The FDA, states that, based on current data, it “believes that the weight of scientific evidence does not show an association between exposure to radiofrequency from cell phones and adverse health outcomes.”

The National Cancer Institute states that “although there have been some concerns that radiofrequency energy from cell phones held closely to the head may affect the brain and other tissues, to date there is no evidence from studies of cells, animals, or humans that radiofrequency energy can cause cancer.”

<sup>30</sup> The World Health Organization states that “to date, no adverse health effects have been established as being caused by mobile phone use,” despite a “large number of studies [that] have been performed over the last two decades to assess whether mobile phones pose a potential health risk.”

1. In 2011, the World Health Organization's (WHO) International Agency for Research on Cancer (IARC) classified wireless radiation as a Group 2B possible carcinogen.<sup>31</sup> This conclusion was based upon an increased risk of malignant brain cancer (glioma) identified in those who used cell phones for over 10 years for an average of 30 minutes per day.

Anthony B. Miller, M.D., Senior Epidemiologist, IARC, states in a 2018 updated assessment to the 2011 IARC classification of wireless radiofrequency radiation (RFR), ***"When considered with recent animal experimental evidence, the recent epidemiological studies strengthen and support the conclusion that RFR should be categorized as carcinogenic to humans (IARC Group 1)."***<sup>32</sup>

2. "Since 2011, the scientific evidence linking wireless to cancer has significantly increased and today several published reviews conclude that the current body of evidence indicates cell phone radiation is proven Group 1 human carcinogen (Miller et al 2018, Peleg et al 2018 Carlberg and Hardell 2017, Belpomme et al 2018)." <sup>33</sup>

3. Christopher J. Portier, Ph.D., former director of the National Center for Environmental Health at the Centers for Disease Control and Prevention (CDC) and a scientific advisor for the WHO, reviewed the most recent body of scientific research and literature to look at the feasibility of RFR causing specific brain tumors in humans and concluded in March, 2021:

- ***"Given the human, animal and experimental evidence, I assert that, to a reasonable degree of scientific certainty, the probability that RF exposure causes gliomas and neuromas is high."***

<sup>34</sup>

4. In 2021, the Court of Appeals for the D.C. Circuit in *EHT et al v. FCC* ruled that the FCC's 2019 decision to maintain their 26-year-old thermal-based exposure "safety" guidelines demonstrated that the FCC was acting in an ***"arbitrary and capricious"*** manner ***"in its complete failure to respond to comments concerning environmental harm caused by RF radiation"*** below the current FCC limits.<sup>35</sup>

The Court further ruled that, ***"The factual premise—the non-existence of non-thermal biological effects—underlying the current RF guidelines may no longer be accurate."*** The Court pointed out that the FCC had ignored scientific evidence documenting biological harm at non-thermal levels (i.e., at levels hundreds and even thousands of times below the current FCC wireless exposure "safety" guidelines). Indeed, 11,000 pages of scientific studies of biological hazards from RFR and hundreds of

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<sup>31</sup> [https://www.iarc.who.int/wp-content/uploads/2018/07/pr208\\_E.pdf](https://www.iarc.who.int/wp-content/uploads/2018/07/pr208_E.pdf)

<sup>32</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0013935118303475>

<sup>33</sup> <https://ehtrust.org/science/whoiarc-position-on-wireless-and-health/>

<sup>34</sup> <https://www.saferemr.com/2021/03/expert-report-by-former-us-government.html?m=1>

<sup>35</sup> *Env'tl. Health Tr., et al. v. FCC*, 9 F.4th 893 (D.C. Cir. 2021). For overview of the case, see generally <https://ehtrust.org/in-historic-decision-federal-court-finds-fcc-failed-to-explain-why-it-ignored-scientific-evidence-showing-harm-from-wireless-radiation/>.

personal accounts of injuries from RFR were in the FCC docket. The Court of Appeals admonished the FCC that it could not ignore all this scientific evidence.

5. Ronald Melnick, Ph.D., retired NIEHS senior toxicologist who won the American Public Health Association's 2007 David P. Rall Award for public health advocacy states:

***"I strongly feel health and regulatory agencies should promote policies that reduce cell phone radiation exposure, especially for children and pregnant women. The agencies in the U.S. say, "if you are concerned" rather than "we are concerned." Agencies should be clear and straightforward educating the public on "here is what you should do."***

***"The risk can be greater for children than adults due to the increased penetration of the radiation within brains of children and the fact that the developing nervous system is more susceptible to tissue damaging agents."***<sup>36</sup>

6. The American Academy of Pediatrics, a non-profit professional organization of 60,000 primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists, stated in a letter to the FCC on July 12, 2012:

***"Children ... are not little adults and are disproportionately impacted by all environmental exposures, including cell phone radiation. In fact, according to IARC, when used by children, the average RF energy deposition is two times higher in the brain and 10 times higher in the bone marrow of the skull, compared with mobile phone use by adults."***<sup>37</sup>

7. New Hampshire formed a State Commission to examine whether wireless radiation is harmful to human health. The majority of that New Hampshire State Commission came to the conclusion that exposure to wireless radiation is harmful to human health and the environment. The commission was convened through bipartisan legislation<sup>38</sup> that was signed by the governor. Commission membership included unbiased experts in fields relating to health and radiation exposure, and they issued their Final Report in November 2020.<sup>39</sup> A quote from that report (taken from Recommendation 1) provides the Commission findings with regards to the effectiveness of FCC regulations:

***"The majority of the Commission believes that the FCC has not exercised due diligence in its mission to manage the electromagnetic environment by not setting exposure limits that protect against health effects. They have failed to support technical means and investigations aimed at reducing human exposures to electromagnetic radiation (EMR) in telecommunications systems and optimize wireless modulations to reduce biological and health impacts."***

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<sup>36</sup> [https://www.youtube.com/watch?v=zSx\\_yDzxvM8&t=2295s](https://www.youtube.com/watch?v=zSx_yDzxvM8&t=2295s)

<sup>37</sup> <https://ehtrust.org/wp-content/uploads/American-Academy-of-Pediatrics-letter-to-the-FCC-July-12-2012.pdf>; see also images of cell phone usage by children and the penetration of wireless radiation into the brain <https://ehtrust.org/research-on-childrens-vulnerability-to-cell-phone-radio-frequency-radiation/>.

<sup>38</sup> <https://legiscan.com/NH/text/HB522/2019>.

<sup>39</sup> <http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>.

8. Experts from the technology industry have also spoken out about the hazards of wireless radiation, e.g.: Frank Clegg, former President of Microsoft Canada,<sup>40</sup> and Jeromy Johnson, who holds an advanced degree in Civil Engineering and worked in Silicon Valley's financial industry for over 15 years<sup>41</sup> and who was personally impacted by wireless radiation.
9. Physicians, scientists and engineers have documented the adverse effects of wireless radiation. See, e.g. the statements of 57 physicians, 19 scientists and an engineer in a smart meters case brought in Pennsylvania's Supreme Court, and supported by an amicus brief in 2021 of 80 organizations, based on the adverse effects of wireless radiation.<sup>42</sup>
10. EMF researchers and physicians have authored more than 20 position papers and resolutions cautioning about EMF health risks (e.g. in 2016, 220 scientists from 42 countries signed an International Appeal directed to the United Nations and the WHO, calling for protection from non-ionizing EMF exposure).<sup>43</sup>
11. The European Parliament has recognized "The European Parliament ... calls on Member States to follow the example of Sweden and to recognise persons that suffer from electrohypersensitivity as being disabled so as to grant them adequate protection as well as equal opportunities."<sup>44</sup>

You can also hear directly from grassroot communities of the health problems that they have been experiencing from RFR radiation. An example is in Pittsfield, MA where long-time residents and their children suffered from serious physical ailments, including vomiting in their beds, after the installation of a wireless cell tower near their homes, and from which they had to evacuate.<sup>45</sup> The Pittsfield, MA Board of Health recently issued an emergency order to a telecommunications carrier to show cause why a cease and desist order should not be issued against the carrier to turn off a cell tower based on express findings of

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<sup>40</sup> <https://www.youtube.com/watch?v=h4TdY344Now>.

<sup>41</sup> <https://www.youtube.com/watch?v=F0NEaPTu9oI>.

<sup>42</sup> *Povacz v. Pennsylvania Public Utility Commission*, <https://childrenshealthdefense.org/wp-content/uploads/Brief-and-Addendum-Submitted-9-14.pdf>, starting on p.64; for an overview of the case, see <https://childrenshealthdefense.org/defender/chd-amicus-brief-supreme-court-pennsylvania-reject-smart-meters-mandate/>.

<sup>43</sup> EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses, Belyaev et al, Rev Environ Health 2016, DOI 10.1515/reveh-2016-0011, Received March 16, 2016; accepted May 29, 201, available at <https://www.diagnose-funk.org/download.php?field=filename&id=363&class=DownloadItem>.

<sup>44</sup> "Digitalization Challenges for Europe," <https://www.eesc.europa.eu/sites/default/files/files/ge-01-19-295-en-n.pdf>; "European Parliament, Health Impact of 5G," <https://ehtrust.org/the-european-parliament-panel-health-impact-of-5g/>; European Parliament – Policy Recommendations On Cell Phones, Wireless Radiation & Health, May 10, 2017, <https://ehtrust.org/european-parliament-policy-recommendations-cell-phones-wireless-radiation-health/>; European Parliament resolution on the health problems associated with electromagnetic fields (2008/2211), [https://www.europarl.europa.eu/doceo/document/TA-6-2009-0216\\_EN.html](https://www.europarl.europa.eu/doceo/document/TA-6-2009-0216_EN.html).

<sup>45</sup> <https://ehtrust.org/statement-by-courtney-gilardi-after-pittsfield-board-of-health-votes-to-send-cease-and-desist-order-for-verizon-cell-tower/>.



injuries sustained by residents as a result of the cell tower.<sup>46</sup> There have been other reports of health effects from cell towers.<sup>47</sup>

**Federal Communications Commission:** The FCC admitted in 2019 that at least some RFRs can cause instantaneous non-thermal adverse effects with radio-frequency radiation (RFR) frequencies ranging between 3 KHz and 10 MHz.<sup>48</sup> However, the FCC averages exposure levels over 30 minutes, which completely obscures the effects of the pulsating nature of RFR and does not account for 24/7 exposure to RFR or its constant pulsations by the population.

**Food and Drug Administration:**

Linda Birnbaum, Ph.D., former Director of the U.S. NIEHS and former Director of the National Toxicology Program (NTP) spanning across the Department of Health and Human Services organizations which involves NIH, FDA and CDC, has stated:<sup>49</sup>

- *“Effects from [wireless] radiofrequency radiation (RFR) such as genetic toxicity, immunotoxicity, oxidative stress, changes in gene and protein expression, changes in cell differentiation and proliferation, and increased permeability of the blood brain barrier were reported in these [scientific] publications.” (pg. 8).*
- *“The phase I [NTP] studies established that non-thermal levels (<1°C or no detectable change in temperature) of RFR exposure had toxicological implications in biological systems.” (pg. 9).*
- *“The NTP found and published evidence of DNA damage after only 90 days of exposure.” (pg. 9).*
- *“Overall, the NTP findings demonstrate the potential for RFR to cause cancer in humans. The independent peer review of the entire proceedings carried out by toxicologists, pathologists and statisticians independent of the NTP staff conducted March 26-28, 2018, concluded that there was ‘clear evidence of cancer,’...exposure to RFR is associated with an increase in DNA damage.” (pg. 11).*

**NOTE:** NTP refers to the National Toxicology Program.<sup>50</sup> Since completion of the \$30 million NTP study (originally sponsored by the FDA to research possible biological effects of RFR), the results have been replicated by the Ramazzini Institute<sup>51</sup> in another study using exposures below the FCC thermal thresholds<sup>52</sup> (simulating emissions from cellular base stations and wireless transmitters).

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<sup>46</sup> <https://ehtrust.org/wp-content/uploads/Pittsfield-Health-Board-Cell-Tower-Order-to-Verizon-April-11-2022-FINAL-REDACTED.pdf>; see also, <https://ehtrust.org/the-first-cease-and-desist-order-against-verizon-cell-tower-to-be-sent-on-friday-by-by-board-of-health-pittsfield-ma/>.

<sup>47</sup> Cell Tower Health Effects <https://www.saferemr.com/2015/04/cell-tower-health-effects.html>, Center for Family and Community Health, School of Public Health, University of California, Berkeley.

<sup>48</sup> *Proposed Changes in the Commission’s Rule Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, 34 FCC Rcd 11687, 11743-11745, ¶¶122- 124 & nn. 322-335 (2019). It also noted that these harms occur instantaneously. The FCC currently averages exposure levels over 30 minutes, which completely obscures the acknowledged instantaneous response.

<sup>49</sup> <https://ehtrust.org/wp-content/uploads/20-1025-Amicus-Brief-Joe-Sandri.pdf>.

<sup>50</sup> <https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html>.

<sup>51</sup> <https://pubmed.ncbi.nlm.nih.gov/29530389/>.

<sup>52</sup> <https://ehtrust.org/worlds-largest-animal-study-on-cell-tower-radiation-confirms-cancer-link/>.

## **Federal Agencies Creating Barriers For Relief For The EMS Disabled**

The U.S. Department of Housing and Urban Development (HUD) has issued guidance to its agency not to recognize any EMS claims.<sup>53</sup> This has created bias within the agency and other agencies:

“The Department of Energy and Department of Justice have also received numerous complaints dealing with these issues and have informed HUD that they will not open investigations under Section 504 based on these allegations. Based on advice from HUD’s Office of General Counsel, FHEO will not accept as jurisdictional allegations dealing with Smart Meters, RF and/or EMF issues, and any complaints already accepted will be closed... HUD reimburses only for cases that are jurisdictional under the federal Fair Housing Act. Where such complaints are accepted by a FHAP, they will not be accepted by HUD for payment.”<sup>54</sup>

The FCC has continued, unabated, to deploy 5G and other wireless technologies, despite the known dangers of wireless radiation and despite recent court rulings against the FCC. The FCC’s claim of pre-emption on radiofrequency emissions has fueled the unfettered deployment of wireless infrastructure, the exacerbation of adverse health impacts on the EMS disabled, and the continued bias against the EMS disabled.

### ***Would you board a plane whose safety guidelines have not been updated since 1996?***

- In 2019, the Court of Appeals for the D.C. Circuit ruled against the FCC’s failure to engage in environmental review of small cell deployment. To date, there has been no environmental review of small cells in general or 5G in particular, yet 5G is being deployed unabated. There has been no safety testing of 5G, as Senator Blumenthal established during Senate testimony by telecommunications executives in 2019.<sup>55</sup> The FCC has declined to update its wireless “safety” emission guidelines since 1996, and in 2019 decided that the guidelines did not need to be updated.
- The FCC received 11,000 pages of scientific studies of proven wireless harms and hundreds of people reporting their injuries from wireless radiation. The FCC ignored all of those submissions.
- After the FCC ignored those submissions, in August 2021, the Court of Appeals for the D.C. Circuit again ruled against the FCC and remanded its wireless emission guidelines back to the FCC for reconsideration. It called out the FCC for “its complete failure to respond to comments concerning environmental harm caused by” wireless radiation below the current FCC guidelines. The FCC has so far ignored the Court’s remand order.
- Despite these two court decisions, the FCC’s Technical Advisory Council (TAC) continues to discuss the unfettered deployment of wireless technologies. Indeed, there is a scheduled June 9, 2022 meeting of TAC to discuss “6G, artificial intelligence, advanced spectrum sharing technologies, and emerging wireless technologies, including new tools to restore Internet access during shutdowns

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<sup>53</sup> Maine Human Rights Commission, April 25, 2017.

<sup>54</sup> Letter addressed to “Fair Housing Enforcement Partners” by Joseph A. Pelletier, Director, Fair Housing Assistance Program, U.S. Dept. of Housing and Urban Development; obtained from Maine Human Rights Commission, 2017.

<sup>55</sup> <https://mdsafetech.org/2019/02/13/no-research-on-5g-safety-senator-blumenthal-question-answered/>.

and other disruptions." Those serving on TAC are mostly from the telecommunications industry. There is no representation for the EMS disabled or for any of the grassroots organizations or non-profits representing the interests of the EMS disabled.

The New Hampshire Commission examining EMF health effects extended an invitation to provide comment or participate. It went unanswered. The New Hampshire Commission concluded.

***"The FCC, using the science that they receive from other agencies and scientific/engineering associations, has set the allowable power intensity that can be emitted from these antennae. Testimony shows these limits are set well above many other industrialized nations. There are concerns by many Washington, DC watchers that the FCC is a captive agency whose Commission members come from the industry they are overseeing."***

It was recently announced that the FCC is considering deploying Wi-Fi in school buses.<sup>56</sup> No accommodation is being contemplated for EMS disabled children who will have no other safe school transportation alternative.

## **Energy Consumption and Pollution from Wireless Infrastructure and Devices**

Another objective of the Justice40 Initiative is clean energy. Wireless is not clean energy.

What is emitted from wireless infrastructure, cell towers and cell phones is referred to as wireless radio-frequency radiation (RFR), electro-magnetic radiation (EMR), electro-magnetic fields (EMF), microwave radiation or wireless radiation. "ElectroSmog refers to all man-made electromagnetic radiation created and present in our surrounding environment."<sup>57</sup>

The environmental footprint of wireless infrastructure contributes more to global warming than it does in preventing it.<sup>58</sup> Wireless is not so "green."<sup>59</sup> As far back as 2013, it was predicted that the "wireless cloud" would produce "an increase in carbon footprint from 6 megatonnes of CO<sub>2</sub> in 2012 to up to 30 megatonnes of CO<sub>2</sub> in 2015, the equivalent of adding 4.9 million cars to the roads," with up to 90% of this consumption "attributable to wireless access network technologies ...".<sup>60</sup> More recently, energy consumption for wireless infrastructure has been reported at ten times that of fiber optics (with 5G requiring 2 to 3.5 times the energy needed for 4G towers).<sup>61</sup> Energy consumption from 5G "is expected to increase 61x between

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<sup>56</sup> "FCC Chairwoman Rosenworcel Pushes for E-Rate Funding of School Bus Wi-Fi," May 11, 2022, <https://stnonline.com/news/fcc-chairwoman-rosenworcel-pushes-for-e-rate-funding-of-school-bus-wi-fi/>.

<sup>57</sup> <http://www.emfrf.com/electrosmog/>.

<sup>58</sup> <https://ehtrust.org/wp-content/uploads/5G-and-Climate-Change-Flyer-EHT.pdf>.

<sup>59</sup> Environmental Health Trust, "5G is Not So Green ..." <https://myemail.constantcontact.com/Studies-Confirm-5G-4G-Will-Increase-Radiation-Exposure.html?soid=1116515520935&aid=2ptEVCn03-U>.

<sup>60</sup> <https://ehtrust.org/wp-content/uploads/5G-and-Climate-Change-Flyer-EHT.pdf>.

<sup>61</sup> <https://www.emfacts.com/2020/09/5g-base-stations-use-up-to-three-and-a-half-times-more-energy-than-4g-infrastructure/>.

## Eliminating Digital Discrimination For the EMS Disabled (Susan Foster and Odette J. Wilkins)

2020 to 2030 due to the energy demands of powerful network elements like massive MIMO<sup>62</sup> and edge servers [and] the proliferation of 5G cell sites ...”<sup>63</sup>

In terms of pollution, even the telecommunications industry has referred to wireless as a pollutant in their product protection plans for which they disclaim liability for personal injury. For example, an industry brochure for consumers for cell phone insurance protection states:

***"Pollutants means any ... gaseous, or thermal irritant or contaminant including ... artificially produced electric fields, magnetic field, electromagnetic field, sound waves, microwaves and all artificially produced ionizing or non-ionizing radiation ..."***<sup>64</sup>

Similar definitions for pollution are in the product protection plans for other telecommunications companies.<sup>65</sup>

Two of the largest insurance companies in the world (i.e., Lloyd's of London and Swiss Re) have declined to insure telecom companies for any liability for personal injury that results from RFR exposures.<sup>66, 67, 68</sup>

Insurance companies, reviewing potential RFR injuries to the public from a risk analysis perspective, have assessed RFR as “high” risk and is, therefore, excluded from coverage as a general matter. The insurance industry clearly acknowledges the high potential of claims of RFR injuries from the public arising from RFR exposure.

Minority and rural communities have historically been affected by environmental hazards. Those mistakes should not be amplified by their exposure to wireless RFR in close proximity to their homes, schools and businesses. Fiber optics to the premises (FTTP) is the superior choice for these communities, where digital inclusion and environmental equity are needed to bridge the digital divide. Fiber optics has “[l]ower energy consumption, reduced waste and sustainable architecture, characteristics that make fiber infrastructure an environmentally advantageous choice.”<sup>69</sup> “Fiber has a minimal ecological impact, reduces waste, consumes very little energy and helps decrease greenhouse gas emissions.”<sup>70</sup>

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<sup>62</sup> MIMO means Multiple-Input Multiple-Output and “is a wireless technology that uses multiple transmitters and receivers to transfer more data at the same time” by combining “data streams arriving from different paths” in contrast to Single-Input Single-Output (SISO) technology which “can only send or receive one spatial stream at a time.” See, <https://www.intel.com/content/www/us/en/support/articles/000005714/wireless/legacy-intel-wireless-products.html>.

<sup>63</sup> <https://ehtrust.org/report-5g-to-increase-energy-consumption-by-61-times/>.

<sup>64</sup> <https://ehtrust.org/wp-content/uploads/device-protection-brochure-nationwide.pdf>.

<sup>65</sup> <https://ehtrust.org/key-issues/electromagnetic-field-insurance-policy-exclusions/>; , <https://ehtrust.org/wp-content/uploads/ATT-Multi-Device-Protection-Pack-Insurance.pdf>, <https://ehtrust.org/wp-content/uploads/Sprint-Insurance-Terms-and-Conditions-Downloaded-2019.pdf>.

<sup>66</sup> <https://5gtechnologynews.com/insurance-companies-can-refuse-claims-related-to-electromagnetic-radiation-illnesses/>.

<sup>67</sup> <https://ehtrust.org/wp-content/uploads/Swiss-Re-SONAR-Publication-2019-excerpt-1.pdf>, pg. 29.

<sup>68</sup> <https://ehtrust.org/key-issues/reports-white-papers-insurance-industry>.

<sup>69</sup> <https://www.cablinginstall.com/cable/fiber/article/16465844/how-fiber-can-help-make-your-network-greener>.

<sup>70</sup> Fiber Optic Broadband, A Greener Internet Solution, <https://www.otelco.com/a-greener-internet-solution/>.

## **The Need to Accommodate Disadvantaged Communities of EMS Disabled, Metrics and Guidelines**

The EMS disabled is a disadvantaged community that requires affirmance and accommodation. The Fair Housing Act (“FHA”)<sup>71</sup> and Americans with Disabilities Act (“ADA”)<sup>72</sup> require accommodations relating to a “physical or mental impairment” that “substantially limits one or more of the major life activities.” See, e.g., 42 U.S.C. §12102(1)(A) and 28 C.F.R. §36.105.

Residents in disadvantaged communities must be given the right to be heard and to choose the method of broadband access (wired or wireless), by providing them with sufficient notice and the power to consent to wired or wireless access, particularly given the proven hazardous nature of wireless technology. Appropriate accommodation must be made for those who are disabled or suffering from wireless radiation. Residents should have veto power over any wireless infrastructure in their neighborhoods or at least those right outside their homes or bedrooms, especially given that insurance companies will not insure for any injuries from wireless radiation.

The perspective of those EMS disabled as stakeholders who are suffering or disabled from wireless radiation is particularly important in establishing digital equity and inclusion, and the EMS disabled should be given a voice. This would ensure that those otherwise suffering or disabled from wireless radiation are given accommodation by (1) being given access to fiber, rather than wireless, to access the Internet for medical attention, education and other uses; (2) being given equal access as everyone else to the Internet and (3) ensuring a far enough distance from wireless technology with minimum setbacks of 500 meters, or any greater amount of setback or relocation of wireless technology that the disabled require to live safely within their homes.

Making accommodation for the EMS disabled is a necessity. To ensure that the EMS disabled are included in digital equity and digital inclusion, the EMS disabled need access to broadband; otherwise, not having these minimal accommodations would totally exclude this EMS disabled population from having public access to the Internet in their home and in anchor institutions. More specific guidelines are delineated by the [Building Biologists](https://buildingbiologyinstitute.org/), an organization whose mission is to help create healthy homes, schools, and workplaces free of toxic hazards, including those posed by electromagnetic radiation.<sup>73</sup>

### **Accommodation in Public Anchor Institutions**

Accommodation for the EMS disabled should be made in public anchor institutions, such as libraries, schools and medical facilities, so that a portion of each such institution would not expose the EMS disabled to wireless radio frequency radiation. Wi-Fi/wireless free zones, e.g., areas in a building that do not have Wi-Fi or other wireless connectivity and are free of any wireless frequency of any kind, including, but not limited to, that generated by cell phone devices or any other type of wireless transmitting or receiving devices such as smart meters. This zone would be designed to accommodate broadband and telecommunications access for the EMS disabled and to provide safe access to all anchor institutions that they use.

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<sup>71</sup> 42 U.S.C. §3601, et seq.

<sup>72</sup> 42 U.S.C. §12101, et seq.

<sup>73</sup> <https://buildingbiologyinstitute.org/>.



Here are some examples of accommodations needed for the EMS disabled. The EMS disabled need landline corded phones in community anchor institutions (e.g., libraries, schools, medical facilities) and family dwellings. They cannot use or be dependent on cell phones. A portion of each community anchor institution should have accommodation for the EMS disabled so as not to expose them to wireless frequency radiation.

Accommodation for EMS disabled would include creating a Wi-Fi/[wireless free zone](#), which would include a way to terminate all wireless transmitting signals originating from within the zone and attenuate all wireless receiving signals penetrating into the zone. Transmitting signals can be terminated with a combination of a hard wire shut-off, permanent Wi-Fi free software deactivation that does not reset itself or just by using FTTP and cabled modems / routers / computer / telecommunications equipment. Received signals can be lowered with a combination of RF attenuation building materials, equipment and products that reduce the RFR penetrating into the zone. The objective is to create an “as low as reasonably achievable” level of RFR for receiving signals.

All telecommunications access should be provided by telecommunications equipment (e.g., modems or routers) connected only by copper wire, cable or fiber optics. Any connectors for fiber optics and other hard-wired alternatives must be secured and ensure a leak-free connection. The zone would have a means to terminate all wireless transmitting signals originating from within the zone and attenuate all wireless receiving signals penetrating into the zone. Transmitting signals can be terminated with a combination of a hard wire shut-off, permanent Wi-Fi free software deactivation that does not reset itself. Alternatively, telecommunications equipment could simply be permanently connected to fiber optics or cable for an even faster, more secure and healthier experience. Received signals can be lowered with a combination of radio frequency attenuation building materials, equipment and products that reduce the radio frequency penetrating into the zone. The objective is to create an “as low as reasonably achievable” level of radio frequency receiving signals.

The zone could also be “flexible,” by equipping it with an easily accessible and visible “off” switch and robust software that does not permit wireless signals and prohibits these software settings from being automatically overridden or reset. Those needing a connection for their cell phones would simply turn off their Wi-Fi and cellular connections and plug into the hardwired connections that would be made available to them at various locations within the zone, without any attenuation in service and with the possible advantage of even faster and more reliable service without expense to their health.

In order for the EMS disabled to reach these zones, any wireless frequency within these institutions would be easily attenuated by simply placing a “Signal Tamer”<sup>74</sup> over the wireless telecommunications equipment which significantly reduces the amount of wireless frequency emitting from that equipment without affecting wireless connectivity.

Since the EMS disabled cannot use cell phones, they would need landline corded phones in these public anchor institutions. For example, when an EMS disabled person would otherwise be required to notify a medical facility by cell phone that they are arriving for their appointment, an accommodation would simply be a buzzer at the door to announce their arrival.

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<sup>74</sup> See a sample Signal Tamer on Amazon, with photos of how it greatly reduces wireless frequencies while the router continues to work; [https://www.amazon.com/Microwave-Shielding-Headnet-Radiation-Exposure/dp/B07P3J6J9C/ref=sr\\_1\\_3?crid=133JJDZDT48I9&keywords=signal+tamer+router+shield&qid=1652294074&sprefix=signal+tamer%2Caps%2C183&sr=8-3](https://www.amazon.com/Microwave-Shielding-Headnet-Radiation-Exposure/dp/B07P3J6J9C/ref=sr_1_3?crid=133JJDZDT48I9&keywords=signal+tamer+router+shield&qid=1652294074&sprefix=signal+tamer%2Caps%2C183&sr=8-3).

### **Accommodation in Home Dwellings**

“A man’s [or woman’s] home is his [her] castle.” This has been a maxim for centuries and is no less relevant here. Since the proliferation of wireless infrastructure, wireless frequencies have been intruding into people’s homes, without their consent, and harming them. If frequencies were not invisible, the intrusion and harm would rise to the level of the common law crime of assault and battery. Accommodation is required to ensure that those already harmed from wireless frequencies are protected from any further intrusion and harm. Indeed, these frequencies are life threatening for the EMS disabled.<sup>75</sup>

To that end, the EMS disabled require hard wire, either fiber optics, cable or copper wire, to the premises and hard wire, either fiber optics, cable or copper wire, through the premises. The EMS disabled require prior notice of planned nearby facilities, their consent to the placement and there must be a minimum setback of at least 500 meters so that the EMS disabled can live safely within their homes.

In addition, the EMS disabled require access to medical assistance and emergency services in case of any acts of God, access to which, incidentally, may also become interrupted with wireless infrastructure. The EMS disabled should have equal access to broadband -- a necessary service -- in a manner that does not injure them and that does not otherwise put them in harm’s way. They cannot adopt a technology that is injuring them, especially when wireless technology is intruding into their homes from the outside or from within their own homes.

### **Accommodation for Emergencies**

The EMS disabled require hardwired connections in the event of any emergency or natural disaster, such as heavy weather conditions or a tornado. An example of how fiber optics made possible the restoration of service during an emergency is in Chattanooga, TN. In November 2012, a tornado ripped through Chattanooga. Because of the fiber optics installation, the system was able to either prevent or automatically restore service from 23,000 customer outages.<sup>76</sup> The EMS disabled require access to services in such emergencies.

### **Digital discrimination cannot be remedied without digital literacy.**

Digital literacy requires educating the public, businesses, schools, states, municipalities about the important of hardwired connections. Educational materials along with links to experts in this area (such as the [Building Biology Institute](#)) can provide crucial information on how to hardwire equipment, along with the health, environmental, economic, quality of communications, and security reasons for doing so. The digital literacy program should include, e.g., (1) guidance on the safe use of technology at home, school, work, medical facilities, etc;<sup>77</sup> (2) how to use ethernet cords, adaptors for every device in which to

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<sup>75</sup> See the various situations of the EMS disabled provided in this paper.

<sup>76</sup> “Smart Grid Helps Keep Lights Burning,” May 19, 2017 Editorial, Hamilton County Herald, <https://www.hamiltoncountyherald.com/Story.aspx?id=8646&date=5%2F19%2F2017>.

<sup>77</sup> Protecting Babies from EMF <https://ehtrust.org/> and <https://ehtrust.org/?s=baby+safe>; How to Hard-Wire Schools (see, <https://www.techsafeschools.org/>; “Hardwire Options | TechSafe Schools” <https://www.techsafeschools.org/hardwire-options>.

plug the ethernet cords;<sup>78</sup> (3) how to use a “Signal Tamer” or its equivalent, so as not to cause electrosmog pollution in other people’s spaces (similar to not polluting people’s spaces with second-hand smoke); (4) how distance from any wireless device or infrastructure is their friend; (5) how to protect babies from wireless frequency radiation and (6) how to hard-wire schools so as not to expose children to wireless frequency radiation.

## Historical Context

There is precedent for creating “safe zones” for the disabled. Zones would be created to reduce crime by implementing new principles of housing construction to provide for greater public surveillance rather than constructing areas that were recessed where crimes could more easily occur. This is known as “defensible space” and the architect was Oscar Newman, Director of the Institute of Planning and Housing, New York University. He advised the Department of Justice on creating defensible space. Newman and his colleagues undertook a three-year study on the effects of the physical layout of residential environments on the criminal vulnerability of inhabitants. The project involved both statistical analyses and extensive modifications to the existing plant and grounds of housing projects to test the efficacy of hypotheses. Through the creation of “safe zones,” the security and safety of adjacent streets and neighborhoods benefit through a reduction in crime.

In Missouri a Travel Safe Zone (TSZ) has been implemented to improve highway safety by implementing more clearly defined roadway segments, particularly in areas where the number of fatal or disabling injury crashes exceeds a “predicted safety performance level for comparable roadways,” as stated in Missouri Revised Statutes 304.590.

As a temporary solution to homelessness, the United States Interagency Council on Homelessness (USICH), the only federal agency tasked with preventing and ending homelessness, has coordinated with 19 federal agencies, state and local governments and the private sector to create “safe zones” or “sanctioned encampments.” The goal is to help people stay in a safer and more sanitary environment, without the risk of being arrested or legally cited. Sometimes these settings feature sheds or other structures or provide areas for people to stay in their cars or recreational vehicles. Others simply provide places for people to sleep in their own tents or on mats. Some communities have created these environments as a voluntary option for people that would otherwise live in unsafe situations.

The need for “safe zones” in the wireless-free context are being discussed with regularity among the EMS disabled community and those who attempt to provide services for them. On May 12, 2022, the National Council on Disability (NCD) took testimony, both written and oral, from the EMS disability community. NCD is an independent federal agency charged with advising the President, Congress and other federal agencies regarding policies, programs, practices, and procedures that affect people with disabilities.

## Present-Day Context

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<sup>78</sup> “How to Hardwire a Cell Phone to Ethernet Step by Step,” Environmental Health Trust <https://ehtrust.org/how-to-hardwire-a-cell-phone-to-ethernet-step-by-step/>; “You Can Hard Wire iPhone to the Internet With Ethernet Cable! – Tech Wellness,” <https://techwellness.com/blogs/expertise/hard-wire-connect-phone-tablet-laptop-internet/>; “EMF Medical Conference 2021 Talk: Reduce EMF in Your Home Office,” YouTube <https://www.youtube.com/watch?v=FFFdAsTks8>).

To provide some context as to why such accommodations are important, here are just a few examples of people suffering from wireless radiation: a New York police lieutenant,<sup>79</sup> an 81-year old elderly woman who lived in New York,<sup>80</sup> both of whom are referenced in **Stories of the EMS Disabled** in this paper, as well as a Texas resident.<sup>81</sup> The police lieutenant, who was otherwise healthy before exposure to radiation from wireless transmitters placed in close range to his house, caused him to suffer heart arrhythmias and sleep deprivation. He was compelled to evacuate his own home to live elsewhere in a safer environment, while still shouldering the financial burden of a substantial mortgage on his original house.

The 81-year-old elderly woman, after wireless transmitters were placed on the rooftop of her apartment building directly over her ceiling, suffered from debilitating radiation related symptoms, including severe tinnitus, bilateral hearing loss, sleep deprivation, major headaches and persistent nausea and vomiting. She could not find refuge anywhere in her studio apartment, where she has lived for 44 years. In her own words, “It’s brutal.”

A Texas resident has been seeking accommodation, suffers from life-threatening EMS: swelling of vital organs (face, head and eyes), heart attack, stroke, rashes and loss of skin, extreme fatigue, internal bleeding and breathing problems.

There should be a metric to measure in EMS disabled communities, on the ground (1) the level of electrosmog generated, or that would be potentially generated, from wireless infrastructure (2) the amount of fiber optics deployed, and needed to deploy, to provide accommodation to the EMS disabled communities and (3) the extent of accommodation for those disadvantaged communities with injuries from wireless exposure. These metrics should be accessible and transparent to the public.

### **Adopting Tom Wheeler’s “Fiber-First” Policy: Fiber Optics Broadband is a Necessity for Disadvantaged Communities and is the Best Solution to Bridge the Digital Divide**

Digital inclusion and digital equity are important for disadvantaged EMS disabled communities. ***The only way that the promise of diversity and digital equity and digital inclusion can come true for EMS disabled communities is to ensure wired connection to the home and at work and ensure they can achieve exposure avoidance - the only recognized treatment/lifestyle alternative.***

Tom Wheeler, former FCC Chair, advocates a “***fiber first***” policy as he testified in Congress in March 2021.<sup>82</sup> “To prioritize symmetrical 1 gigabit capacity ... is to prioritize a ‘fiber first’ policy. (Such a policy is consistent with the hybrid fiber-coax (HFC) strategy of cable systems’ [DOCSIS 4.0](#) and its 10 Gbps down/6 Gbps up capability.)” Wheeler stated that “[f]iber’s benefits are driven by the combination of increased processing power at the ends of the fiber and the ability to handle that increasing capacity... [A]pplying increased

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<sup>79</sup> <https://childrenshealthdefense.org/wp-content/uploads/otard-amicus.pdf>.

<sup>80</sup> Id.

<sup>81</sup> <http://www.wirelesswatchblog.org/wp-content/uploads/2022/03/Statement-of-Physical-Disabilities-1.pdf>.

<sup>82</sup> Tom Wheeler’s Testimony to Congress, [https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony Wheeler FC 2021.03.22.pdf](https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony%20Wheeler%20FC%202021.03.22.pdf).

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processing to the data flowing through a conduit that itself has increasing capacity is the definition of futureproofing.”

Another factor to consider for purposes of ensure digital equity and broadband inclusion is affordability, capacity and scalability to meet increasing user demands over the local network’s economic life, including performance, speed, low latency, capacity and reliability. Fiber best meets these demands. Wireless is less reliable and less scalable to meet future customer demands and has higher operational expense.<sup>83</sup> As Tom Wheeler testified, wireless should be used only as a last resort.

Fiber broadband would provide access, adoption, affordability, digital equity and digital inclusion.

Fiber optics broadband to and through the premises is a necessity for disadvantaged communities and is the best solution to bridge the digital divide. It provides the best capacity for remote learning for children and students who are part of disadvantaged communities, and more reliable access to medical and other services for the elderly and disabled during emergencies or severe weather when wireless service is more likely to be interrupted or out of service. Fiber would also prevent the exclusion of those disabled or suffering from wireless radiation who cannot be near wireless infrastructure or wireless Internet.

Disadvantaged, unserved, and underserved communities are disproportionately affected by lack of, or insufficient access to, broadband access. Middle mile fiber optics infrastructure has been built in many areas with middle mile fiber running past rural communities without serving them, hence the “digital divide.”

Fiber to and through the premises (FTTP) is the superior service for bridging the digital divide and providing appropriate accommodation for the EMS disabled, so that these communities are not left behind. Former FCC Chair Tom Wheeler called fiber “future proof,” and said that wireless should be used only as a last resort, not a first resort, in his March, 2021 Congressional testimony.<sup>84</sup> Wheeler stated that despite approximately \$40 billion of government subsidies “over the last decade,” those subsidies “have failed to deliver the goal of universal access to high-speed broadband ... because it failed to insist on futureproof technology, ... and focused more on the companies being subsidized than the technology being used or the people who were supposed to be served.”<sup>85</sup>

FTTP will provide the best capacity for remote learning for children and students, particularly those who are already EMS disabled, and more reliable access to medical and other services for the elderly and disabled during emergencies or severe weather when wireless service is more likely to be interrupted. FTTP will also prevent the exclusion of the EMS disabled who cannot be near wireless infrastructure or wireless Internet.

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<sup>83</sup> “To Reduce Network Operating Expenses, Choose FTTH,” Masha Zager, July 2020, <https://www.bbcmag.com/broadband-applications/to-reduce-network-operating-expenses-choose-ftth>.

<sup>84</sup> Tom Wheeler’s Testimony to Congress, [https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony\\_Wheeler\\_FC\\_2021.03.22.pdf](https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony_Wheeler_FC_2021.03.22.pdf).

<sup>85</sup> Id.



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Wheeler's statements point to the fact that wireless and fiber are not equivalent broadband media – they are not substitutes; wireless is and should be a complement, not the primary access method. Fiber is “futureproof” while wireless is not. A policy paper of the National Institute for Science, Law and Public Policy, “Re-Inventing Wires: The Future of Landlines and Networks”, authored by Timothy Schoechle, PhD, communications technology expert, similarly states that “[f]iber is unmatched in its speed, performance, reliability, etc. ... Wireless is not a substitute for fiber.”<sup>86</sup>

Fiber is more affordable, scalable from symmetrical (upload and download) speeds of 100 Mbps to 1Gbps to 10Gbps, has a longer life span of 25-50 years and is safer and more cybersecure, has lower operational expenses,<sup>87</sup> and is available at more affordable prices. By contrast, wireless typically requires equipment upgrades, constant maintenance and re-investments about every 5 years. An example of fiber deployment, consumers in Hamilton County, TN have multiple service options, which include speeds of up to 1000 Mbps (1 Gbps). Pricing and capacity are scalable and provide for 300 Mbps at \$57.99/month and 1 Gbps at \$67.99, in each instance with symmetrical speeds.<sup>88</sup> Wireless technology is not able to effectively compete with similar high-speed Internet, with the FCC only requiring 25 Mbps download / 3 Mbps upload speeds.<sup>89</sup>

<sup>90</sup> The Fiber Broadband Association (FBA) has shown that consumers prefer the symmetrical speeds that fiber provides.<sup>91</sup> As the largest fiber optics trade association in the U.S. states, “If it isn't fiber, it isn't broadband.”<sup>92</sup> The FBA also shows the superior technology of fiber in its white paper, “The Market Has Spoken.”<sup>93</sup>

Fiber deployment has also been an economic boon to Hamilton County.<sup>94</sup> A study calculated the realized economic value of fiber optic infrastructure in Hamilton County and the city of Chattanooga, over about a 10-year period from 2011 to March 2020. The economic value exceeded \$2.69 billion and 9,516 jobs over the study period, with the value exceeding the costs of the fiber optic project by over \$2.20 billion, and about 40 percent of all jobs created. It found that about 52% of the value of the fiber infrastructure was reflected in local economic development – “over \$1.4 billion in new investments, startup funding, real

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<sup>86</sup> “Reinventing Wires: The Future of Landlines and Networks,” National Institute for Science, Law and Public Policy, authored by Timothy Schoechle, PhD; <https://electromagnetichealth.org/wp-content/uploads/2018/02/ReInventing-Wires-1-25-18.pdf>.

<sup>87</sup> <https://optics.fiberbroadband.org/Full-Article/reduce-network-operating-expenses-choose-ftth>.

<sup>88</sup> <https://bestneighborhood.org/tv-and-internet-hamilton-county-tn/>.

<sup>89</sup> <https://www.allconnect.com/blog/internet-speed-classifications-what-is-fast-internet>.

<sup>90</sup> <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2018-broadband-deployment-report>.

<sup>91</sup> [https://www.broadbandworldnews.com/document.asp?doc\\_id=773546](https://www.broadbandworldnews.com/document.asp?doc_id=773546).

<sup>92</sup> <https://s3.amazonaws.com/files.fiberbroadband.org/download/3555.4237?AWSAccessKeyId=AKIAIZGD7FMLIYLBZNI&Expires=1650065068&Signature=CfFGHmOkZaAovAfuGmXXs2hDpKo%3D>.

<sup>93</sup> <https://www.fiberbroadband.org/p/cm/ld/fid=978>.

<sup>94</sup> “Ten Years of Fiber Optic and Smart Grid Infrastructure in Hamilton County, Tennessee,” Bento J. Lobo, Ph.D., CFA First Tennessee Bank Distinguished Professor of Finance, The University of Tennessee at Chattanooga, August 31, 2020, [https://www.researchgate.net/publication/352221978\\_Ten\\_Years\\_of\\_Fiber\\_Optic\\_and\\_Smart\\_Grid\\_Infrastructure\\_in\\_Hamilton\\_County\\_Tennessee](https://www.researchgate.net/publication/352221978_Ten_Years_of_Fiber_Optic_and_Smart_Grid_Infrastructure_in_Hamilton_County_Tennessee).

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estate development and payments-in-lieu of taxes.” “Each county resident is estimated to have benefited by about \$646 per year due to the incremental value generated by the fiber optic infrastructure.”

Another example of substantial long term cost savings using fiber broadband is Chanute, KS which “operates a 10 Gbps fiber-optic broadband ring.” This fiber network “connects schools and other community anchor institutions with gigabit networks ... The network generates \$600,000 per year for Chanute’s Electric Utility ... This ... has demonstrated that communities can meet their own telecommunications needs with smart public investments — they did not wait for national corporations to solve their problems.” City Manager J.D. Lester refers to municipal broadband as ‘the great equalizer for Rural America’ ...”<sup>95</sup>

An example of a rural area which achieved access, digital equity and digital inclusion is rural eastern Kentucky. Peoples Rural Telephone Cooperative (PRTC) completed a 100% all fiber-to-the-premises buildout in 2014, a Gigabit-capable internet available to every home and business in the counties of Jackson and Owsley, Kentucky.<sup>96</sup>

In light of Tom Wheeler’s “fiber-first” policy and the enormous advantage fiber provides over wireless, the FCC should consider the recommendations in the policy paper “Reinventing Wires ...” of the National Institute for Science, Law and Public Policy (NISLAPP), in what former President of Microsoft Canada, Frank Clegg, calls “a reasonable voice for our turbulent world.”<sup>97</sup>

NISLAPP explains that, first, the public needs publicly-owned and controlled wired infrastructure that is inherently more future-proof, more reliable, more sustainable, more energy efficient, safer, and more essential to many other services. Wireless networks and services, compared to wired access, are inherently more complex, more costly, more unstable (subject to frequent revision and “upgrades”), and more constrained in what they can deliver.

Secondly, NISLAPP recommends preserving, renewing, or expanding the use of existing (or new) copper wiring (and rights-of-way). Thirdly, there should be a policy of resorting to wireless access only at endpoints, **primarily for things that move**, or in situations where wiring is not possible or practical—but not relying on wireless for basic access.

These recommendations are preferable to reliance on privatized or semi-privatized (e.g public-private partnerships) providers for Internet access, whether wired or wireless. Rather, the discussion should shift toward Internet as a basic public utility and a re-commitment to the Internet’s founding principles of open networks, interoperability and equal access to all:

- High-speed optical fiber-based Internet access networks should be available to every community and every member with a direct hard-wired connection to every household and workplace.

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<sup>95</sup> In Kansas, Rural Chanute Built Its Own Gigabit Fiber and Wireless Network,” Christopher Mitchell 10-2-21, <https://ilsr.org/chanute-rural-gigabit/>.

<sup>96</sup> <https://www.soar-ky.org/prtc/>.

<sup>97</sup> “Re-inventing Wires: The Future of Landlines and Networks,” by Timothy Schoechle, PhD, Timothy Schoechle, PhD, Senior Research Fellow, National Institute for Science, Law & Public Policy (NISLAPP), <https://gettingsmarteraboutthesmartgrid.org/pdf/Wires.pdf>.

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- The Internet has become a basic public good vital to our society (a public commons), and it should be available to all in a safe, reliable, fair, affordable, and energy-efficient manner.
- Wireless access service is not an adequate substitute for wires and should be considered only as an adjunct or complement to wired access service.
- Thus, in principle, community networks should be financed, constructed, and managed in a manner analogous to such public infrastructure as municipal water systems, sewers, streets, or libraries.

## CONCLUSION

The disadvantaged communities include the EMS disabled who need accommodation.

Therefore, a major metric to measure compliance with President Biden's Justice40 Initiative, is measurement of EMS disadvantaged communities, on the ground: (1) the level of electrosmog generated, or that would be potentially generated, from wireless infrastructure (2) the amount of fiber optics deployed, and needed to deploy, to provide accommodation to the EMS disabled communities and to achieve the Initiative's goal of clean energy for these disadvantaged communities and (3) the extent of accommodation for those disadvantaged communities with injuries from wireless exposure. Fiber optics deployment for FTTP would ensure the best connectivity, digital inclusion, environmental equity, as well as safety for the environment and for the health of the communities. These metrics would help "to deliver at least 40 percent of the overall benefits from Federal investments in climate and clean energy to disadvantaged communities."

As Chair Brenda Mallory of the White House Council on Environmental Quality has stated, the goal to "help Federal agencies ensure that the benefits of the nation's climate, clean energy, and environmental programs are finally reaching the communities that have been left out and left behind for far too long."<sup>98</sup> The EMS disabled "have been left out and left behind for far too long." Now with the Justice40 Initiative, the FCC has the opportunity to rectify this inequality for the disadvantaged communities of the EMS disabled. It can serve a significant role by prioritizing fiber as the access method of choice, and encouraging the development of RF-free zones in public areas and near residences so the EMS disabled can once again have a safe home environment and rejoin the rest of society.

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<sup>98</sup> <https://www.whitehouse.gov/ceq/news-updates/2022/02/18/ceq-publishes-draft-climate-and-economic-justice-screening-tool-key-component-in-the-implementation-of-president-bidens-justice40-initiative/>.

## **Addendum: Stories of The EMS Disabled**

### **In Their Own Words**

#### **GEORGE S., NEW YORK CITY**

George S. was a healthy New York/New Jersey Port Authority Police Lieutenant with a good job, good health, and a three-story house in Astoria, Queens in New York City. George purchased the home in 2013 and refurbished it. He moved in a year later and in 2020 his younger sister, 31 years old, moved into the third story of the house. George was on the second floor. He had tenants on the first floor.

In September 2020, George returned from Europe where his father just had a quadruple bypass. He had been caring for him for five weeks. In his front yard was a cell tower. He doesn't know if you'd call it a small cell or a macro tower. He doesn't really know the difference. But it was a 35' to 40' tall tower with a canister on top that appeared to be omnidirectional and two antennas facing in opposite directions but seeming to cover almost 360° at a slightly lower level than the canister itself. George's front yard lined up perfectly with the 1000-unit apartment building across the street which was probably the target of the wireless carrier. He had received no notice, no warning. He simply came back to find what appeared to be a multidirectional antenna on a big pole had placed atop the old utility pole that was a fixture in the easement of his yard.

George's sister had just completed seven months of chemotherapy at Sloan-Kettering when the antenna was installed. She had been diagnosed with non-Hodgkin's Lymphoma, a type of cancer that affects the lymphatic system.

Even though her chemotherapy was behind her, George's sister started experiencing headaches and nausea after the cell tower was installed. She told her doctor about the new tower and the doctor cautioned that RF radiation could aggravate her condition. The oncologist advised that it was essential she avoid all radiation including RF (wireless) radiation during treatment.

George, for the first time in his life, started suffering from heart arrhythmias and sleep deprivation. He went to a cardiologist for an evaluation and was fitted with a halter containing a cardiac monitor to wear for two weeks. The results showed multiple arrhythmias. They were PVCs or premature ventricular contractions. These are the most common of the irregular heart rhythms. The heartbeat is created by electrical signals that originate in cells in the heart's upper chamber, the right atrium. That electrical signal moves down through the heart to the lower chambers where the electrical current arrives in the ventricles, causing them to contract and pump oxygen-rich blood out to the body. For George this meant that a critical heartbeat came too early, disrupting the heart's normal rhythm.

The sudden onset and the severity of the arrhythmia caused George's new cardiologist to suggest an invasive procedure where they placed a catheter through an artery into George's heart. The doctor tried to replicate the arrhythmia to see if they could perform a cardiac ablation to stop the electrical charge between heart chambers. Ablation is a procedure in a small area of the heart tissue that is causing rapid and irregular heartbeats. Yet the doctor, to his surprise, was not able to replicate arrhythmia.

George did not have arrhythmia when outside of his home environment, only when in his house. The arrhythmia returned when George returned from the hospital procedure to his home. The doctor then did a second procedure to perform a cardiac ablation, but again, they found nothing wrong.

Increasingly, the level of radiation in the home was beginning to look like the culprit. In addition to the never before experienced cardiac arrhythmia, George had experienced headaches, lack of mental clarity, and insomnia that had come out of nowhere, noticeable when he first returned from caring for his father in September 2020. George had never even considered that cell towers could trigger symptoms. He used the technology and he liked it. He wasn't prone to conspiracy theories. He was a Police Lieutenant. and he relied on facts.

George decided to try an experiment. Even though his girlfriend rented one room in NYC, he started staying over there just to see if he slept better. There was a noticeable difference in all his symptoms. The symptoms simply did not occur away from home. In part to address his symptoms and part to protect his sister, George and his sister moved out of the house. He was living in a rented home, all the while paying a significant mortgage on the home he owned – the one with the cell tower in the front yard. George had bought the house across from the East River with every bit of savings he had from over 20 years of extremely hard work. He redid the house from top to bottom. He created four apartments in one three-story home and had a plan mapped out for his financial future. Then the cell tower came.

"They should have safe zones," explains George. "They should have a buffer zone from houses. What's fair is fair. We should have input on where these towers go. I came back to find my sister sicker than when I had left, and everybody I called at the city was either abrasive or they didn't have any information or they didn't know anything. The lack of empathy and the lack of control – like all of our freedoms are taken away with these towers – is like nothing I've ever seen before. It doesn't make any sense."

"I've been a public servant all my life. I was a full paramedic at 19 – the youngest in New York City. A police officer at 20. I worked my way up doing every beat that you can do," says George, and then he pauses. Silence follows, and there's good reason for that somber silence as he reflects. George and his partner were working near the World Trade Center on 9/11. They ran to help and in tandem they pulled people out. George would pull a victim out and as he pulled the person to safety, his partner would run back in. Then they would switch. It was during one of those exchanges, as George was pulling another victim to safety, that his partner ran back in and then the tower collapsed. George's partner was later found in the rubble.

"I was finally a police lieutenant in charge of 300 people," George continues, "and suddenly they put this tower in my front yard and I couldn't sleep at night. I wasn't a great boss at that point because I was so sleep deprived. My heart was racing at night, and I was one of these people who believed that there was no harm from these towers. I use the technology. I like the technology. But you can't put these towers in people's yards with no notice, no negotiation, no room for compromise. Why not put the tower in the flat surface parking lot by the 1000-unit apartment complex the carrier was trying to service? I guess they liked the angle from my front yard because they probably made more money. It was a more direct line of radiation at more apartments. But I paid the price."

"I am \$250,000 in debt because I took my entire life savings and put it into the house and then spent years fixing the house up and was finally able to rent out the extra apartments." George states the facts matter-of-factly, not defeated, yet clearly not knowing how he can dig out of this hole. He has an unmarketable home, and his entire life savings is serving as a base station for a wireless carrier. "I was in Europe taking care of our dad and I came home to find my sister, who was finally done with her cancer treatment, was incredibly ill for no apparent reason. Her bedroom window was parallel with the tower. The doctor said if we stayed, her cancer could come back.



## Eliminating Digital Discrimination For the EMS Disabled (Susan Foster and Odette J. Wilkins)

George S concludes "The FCC is betraying their responsibility...The FCC is not doing their job. If I'm not doing my job, I get indicted. If the FCC doesn't do their job, nothing happens to them. Aren't they supposed to be protecting us? So what happens to them? Nothing."

### LILY MARIE, HELL'S KITCHEN, NYC

Lily Marie was an 81-year-old actress, model, writer, member of the Screen Actors Guild living on the top floor of a high-rise in the West Side of Midtown Manhattan in New York City, *also known as Hell's Kitchen*. Lily Marie had been working hard since she was 17, putting herself through college working as a secretary and waitress. The breakthrough in acting in New York City came after college. She doesn't consider herself a celebrity though others would. She's walked the runway in the top designer's clothes. Her favorite was Oscar de la Renta. She sang, "did the soaps," television shows and has a list of movie credits that include The French Connection, Stiletto, A Lovely Way to Die with Kirk Douglas, and Reflections in a Golden Eye with Elizabeth Taylor and Marlon Brando. For 45 years, Lily Marie loved her apartment at the top of a NYC high-rise, and her view of the city that had brought her opportunity and an exciting career of hard work and tremendous joy.

Everything in her world changed on September 30, 2020. That was the night wireless transmitters were activated after installation on the rooftop right above Lily Marie's apartment. There was no notification to the residents. Five antennas simply appeared on the rooftop, three of them directly above her apartment. She recalls she instantly felt different, with sudden, severe headaches and a high-pitched constant tinnitus, what Lily Marie refers to as "screaming in her ears." It was worse at night. She would lie in bed, exhausted yet unable to sleep, experiencing heart palpitations, IBS (irritable bowel syndrome), diarrhea, nausea, dizziness, a feeling of electrical sensation running from her neck to her head, forgetfulness, and general cognitive dysfunction, or "brain fog." As the days went on, her symptoms worsened. She developed bilateral hearing loss, and persistent nausea and vomiting. Lily Marie experienced these symptoms 24/7 for 26 months. In her own words: "It's brutal."

Lily Marie had to evacuate her apartment of 45 years and move to a more rural setting to escape from the transmitters above her apartment, and increasingly throughout New York City. Unfortunately, there are now wireless transmitters outside of her apartment in a more rural setting that are causing similar issues, although not as severe as the 26 months of hell she experienced in the penthouse floor overlooking New York City. Lily Marie's EMS disability remains a constant. She wears protective clothing when possible and it seems to help. When explaining this syndrome of neurological symptoms she experiences to a new doctor in her new setting, that physician referred to the described symptoms and the attributions to cell towers as "a theory."

Lily Marie told the dismissive doctor he was dismissed. She now has a new physician who is aware of the neurological symptoms that can result from radiofrequency electromagnetic radiation exposure (RF-EMF). But this physician is at a loss about how to help Lily Marie.

The new managers in her current location will not making any accommodation for her EMS disability, as they know nothing about the condition. They are kind, but without the appropriate instruction for how to minimize overall Wi-Fi exposure in the new assisted living facility, they are at a loss as to how they can help. Lily Marie would love to have hard wiring in the room she now rents at an assisted living facility so she could plug in a wired computer. She wants to communicate with her friends and those she worked in the business with for decades.

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The woman who used to strut Oscar de la Renta down the runway now wraps her head in a protective fabric ski cap to stop the throbbing pain and lessen the ringing in her ears.

### **ROGER M., LOVELAND, COLORADO**

“It was a Friday afternoon when we were noticed. All the notice said was that Verizon was coming to install several small antennae on the rooftop. The workmen arrived on Monday. They came every day from 7 AM to 7 PM and worked for three or four weeks. It was more than a few antennae. They even had a crane to lift the concealment wall that shielded the wireless equipment they put literally above my head,” recalls Richard M.

Richard lived on the top floor of ArtSpace, a not-for-profit four-story building. The residents were all artists of some kind. The subsidized housing provided a place to live and work at one’s craft in Loveland, Colorado. A musician and composer, Roger M. had played freelance gigs along the Front Range for years. A versatile musician, Roger was known as someone who was available for touring groups who needed a backup player. He played for theater productions, cruise ships and was frequently found at his piano, writing jazz. His top floor apartment in Loveland doubled as home and studio, he had steady work performing and life was good.

Roger went from living his dream to living in his car to just trying to survive.

He is torn when apportioning blame. Roger doesn’t know whether ArtSpace made a deal to lease out the rooftop of his building without seriously investigating the possible health consequences for the residents. Yet without doubt, he feels Verizon has told the residents too many carefully crafted lies to be doing anything other than purposeful concealment. And he is angry at the FCC for what Roger refers to as “gaslighting and failing to protect the public.”

In the 1944 film *Gaslight* starring Ingrid Bergman, a husband uses deceit to convince his wife that she is delusional so he can steal from her. The term is commonly used to describe someone being manipulated into questioning their own reality, usually so it advantages the person or entity doing the manipulating.

“Verizon tells you that they are operating at just 2% of what the FCC allows,” explains Roger, “at least that’s what the first couple of flyers said. They had an apartment building full of sick residents and they were trying to tell us that we were fools to be concerned.

“They throw your life into chaos,” Roger continues, “and amidst that chaos they deny any harm is coming from the tower. So when they told us what we were being exposed to was just a fraction of what the FCC allowed, I called the FCC. They told me the base station was well within the regulatory limits and then they quickly shifted to their default position: ‘The FCC is not a health and safety agency.’

“They are playing us for fools – *both* Verizon and the FCC,” says Roger, with special emphasis on the word *both*. “It’s all smoke and mirrors. Verizon’s lies wouldn’t work without the FCC’s and vice versa. That Verizon base station on our rooftop may be emitting 2% of what the FCC allows, but how can the FCC allow a level so high that at 2% every single person who lived in that ArtSpace building was feeling the effects either neurologically or they were sick all the time.

“My position is that the FCC should just stop talking because if their default position is they aren’t a health and safety agency, what are they doing regulating the amount of radiation everybody in this country

## Eliminating Digital Discrimination For the EMS Disabled (Susan Foster and Odette J. Wilkins)

receives? They say they rely on other agencies, like the FDA. So you go to the FDA website and they say the same thing the FCC does. They say ‘no known adverse health effects.’

“It’s just a scam,” surmises Roger. “This is one big shell game being played by a federal agency and a wireless carrier. They are joining together to gaslight anybody who gets sick.”

Verizon had begun construction on the rooftop in January 2021. The residents think the tower was activated around April but they were unsure. Many were not feeling well but were trying to write their symptoms off to other things. No one wants to lose their home. But in August it became undeniable to all that the base station on the roof was a problem. Everybody was feeling sick or suffering debilitating headaches and insomnia. By October, Roger was paying rent to house his piano and other instruments and sleeping in his car.

Yet this was Colorado and when winter came, Roger was forced to go into his savings to pay for a hotel. He was unable to find alternative housing. The waiting list for subsidized housing was years long, and he couldn’t find an apartment he could afford. The man who could fit in anywhere as a musician suddenly had no place to go. He was still paying rent at ArtSpace and the hotels throughout the area were not cheap. He couldn’t get out of his lease until finally, in an act of desperation or perhaps inspiration, Roger bought a meter that allowed him to do RF radiation measurements in his apartment. He videotaped the meter walking down the hallway toward his apartment. The readings were high but suddenly as he opened the apartment door, the meter jumped in multiples of 100  $\mu\text{W}$  per meter squared. Then Roger walked to various well-known places in Loveland, including coffee shops where people could come and use their laptops. Nothing came close to approximating the readings in Roger’s apartment. He sent the video to the management company and ArtSpace. They let him out of his lease.

Roger explains that almost everyone moved out or at least they wanted to, but the problem for all was the rents which had skyrocketed since the pandemic, and there was really no place to go. Living in subsidized housing so they could do their craft – whether it was music or painting or pottery, had been appealing. In the beginning the building had quickly filled with artist-residents. Roger had been the first to move in and that was 2015. This was his community. This was everyone’s community within ArtSpace. Now, as soon as they could get out of their leases, residents were leaving for cars, relative’s homes, and the few able to afford other apartments.

“I don’t know a person in the whole building who wasn’t affected,” recalls Roger. “Those of us closer to the rooftop probably got hit the hardest. I was like a zombie. It was the lack of sleep, I’m sure, but it was the lack of clarity of thought that went above and beyond sleep deprivation.

“Friends would come over and I wouldn’t say anything because I didn’t want to predispose them to thinking they didn’t feel well,” he explains. “But every single person who came over to visit would complain of a headache and body chills. I knew it wasn’t some sort of ‘mass hysteria’ for those of us who lived in the building. It affected every single one of our friends.

“People stopped calling for gigs because I wasn’t working, I couldn’t perform, I couldn’t compose, I couldn’t think. I was just trying to survive,” Roger states, a tired bluntness in his voice.

“I didn’t move out capriciously. Who wants to leave their home, their personal possessions, and for me, my love and my profession – music.”

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The symptoms of electrosensitivity have not left Roger, even though he improved when he moved out of ArtSpace. The brain fog is still with him, he is without savings, and without income. After sharing his story, Roger pauses and then shares one final thought.

“What I want to say to Verizon and the FCC is ‘Quit lying and quit killing us.’”

### THE GILARDI FAMILY, PITTSFIELD MASSACHUSETTS

It was Earth Day, 2021. Based on the children’s classic *Alexander and the Terrible, Horrible, No Good, Very Bad Day*, Amelia Gilardi rewrote and retitled, for purposes of Earth Day, the story based on a challenge faced by her family and her community in which the environment plays a central role. “5G Earth Day Countdown: Children — Amelia’s Terrible, Horrible, No Good, Very Bad Cell Tower Days” was an ode to her community and in so many ways, it spoke to a much broader audience.

*My name is Amelia and I am 13 years old.*

*A Verizon cell tower blindsided my Pittsfield, Massachusetts neighborhood and made us sick. This is my story.*

*Last March, we were sent home from school due to the pandemic. The ice skating show that we had worked so hard practicing for was canceled. Auditions for my school musical were cancelled. My weekend nature program was cancelled. Everything was cancelled.*

*Everything except the construction happening in my neighborhood.*

*Trucks were rolling by our house – big ones, flatbed ones, trucks carrying other trucks. When trying to clear the corner between Plumb and Alma Street, the weight of the truck was so much it crushed the water main beneath the road. We couldn’t get the car out past the repair crew and went without water for the day. No one knew why.*

*Because we were home with no plan to return to school, we tried to keep busy. For Christmas, my sister and I got mountain bikes and we went riding up our street like we always did. But this time, at the top of the street, we saw parked trucks and the cleared trees. Where there was forest that was once part of the Herman Melville Farm, a land called “Arrowhead” after Melville having found them in the fields, was now a big, open clearing.*

*Trees by the dozens had been chopped down and were lying on the ground. Some had been wood chipped and spread from Alma Street to the clearing. None of the neighbors waking their dogs or out for a jog or pushing their children in strollers had any idea why.*

*Mom called our City Councilor and he didn’t know why. He said he would call the Department of Public Works and put some calls into the city to find out. When he got back to mom, he said no one knew anything about the construction. Mom came out for a walk with us and took a photo of the trucks. She called the construction company and asked what they were doing. That is when we learned it was a cell tower.*

Amelia Gilardi is an amazing 13-year-old playing the leading teen role in a theater she never tried out for, with some adults in roles she never dreamed she would witness.

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Amelia Gilardi is Courtney Gilardi's daughter. That explains a lot.

The startling news that a 115-foot tall, 12-antenna cell tower was being constructed in their neighborhood in the section of Pittsfield historically known as Shacktown concerned Amelia's mother, Courtney. Construction had already begun. Twenty of the 22 neighbors had not been noticed as was required by the local zoning ordinance, and none of them had been noticed within the period of time allotted for an appeal of permit approval. In the ensuing months Courtney Gilardi and her neighbors struggled to understand how this could happen without notice in their community.

After the tower was activated symptoms were, for most, immediate. Courtney dove into the research. She contacted experts around the country, in Canada and in Europe. Verizon did not inform the residents when the tower was turned on. They knew because their bodies told them. They stopped sleeping through the night if they could get to sleep at all. They were plagued with headaches, vertigo, nausea, brain fog, skin rashes and within the next 18 months there would be two diagnoses of cancer and one recurrence of cancer. Family pets would die, and even the moles did not return to family gardens as the ground started to thaw after winter had passed. Bees and other pollinators began to disappear.

Courtney Gilardi and her husband have two girls, one Courtney refers to as "my little one" for the sake of privacy, and 13-year-old Amelia who has accompanied her mother to every Pittsfield City Council and Board of Health meeting, speaking publicly each time, imploring them month after month to help them find some relief from the injurious Verizon tower. Many of the neighbors joined the fight but few made it their mission to contact experts internationally and invite them to virtual town halls to educate residents and community leaders about the health impacts associated with RF (wireless) radiation.

What sets this story apart what residents all over the country are starting to experience an intrusion of cell towers into residential neighborhoods and on school grounds at an alarming pace is the fact the Gilardis are fighting back. The relentless drumbeat by Courtney and Amelia began to include more neighbors as the months went by. Under longstanding Massachusetts law Health Boards have strong and extensive authority to require that injurious commercial operation be eliminated, so the Gilardis asked the Board to step in and provide relief. On February 2, 2022 the Pittsfield, Massachusetts Board of Health unanimously voted to require that Verizon and the landowner to appear and show cause why the Board should not issue a cease and desist order. The Board took almost two years reviewing the extensive scientific, medical and personal evidence and expressly found that the cluster of illnesses was caused by the tower's operation. The Board encouraged Verizon to work with the city and residents to reduce the impact on these families but indicated Verizon would be required to cease operations if it persisted in its position that the city was powerless to protect Pittsfield residents from harm. This is the first known cease-and-desist by a state/local Board of Health against a wireless carrier in the United States.

Verizon refused to appear or negotiate. It responded to the Board of Health's issuance of the cease-and-desist with a [federal lawsuit](#), filed May 10, 2022, in a Massachusetts U.S. District Court. The carrier asked the court to rule that the Board is indeed powerless to protect Pittsfield residents even after an expert medical agency finding of both injury and causation. Verizon claims that state and local health authorities are completely preempted by [47 U.S.C. §332\(c\)\(7\)\(B\)\(II\)](#), which prohibits state and local [zoning authorities](#), from "regulat[ing] the placement, construction, and modification of [personal wireless service facilities](#) on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the [Commission's](#) regulations concerning such emissions." The tower looming over the Shacktown section of Pittsfield was tested and found to be within the regulatory limits set by the FCC, so Verizon contends it can operate even if the resultant emissions lead to severe injury or even death and in the face of traditional state police powers.



Courtney Gilardi has been working tirelessly to educate her own community, and simultaneously educating communities across the country, that this practice of wireless carriers bringing their cell towers into residential areas and next to schools has to stop. The fact that this tower is at least arguably within regulatory limits set by the FCC may make Verizon feel they have the upper hand, but it is clearly making a very wide swath of neighbors in the vicinity of the tower sick.

“My little one had headaches, dizziness, and felt like her head was ‘buzzy,’ explains Courtney. “She also suffered from the sensation that her skin was crawling and was itchy when she was in her room, which was on the side of the house closest to the cell tower. She complained of stomach aches and a once voracious eater and a like-clockwork sleeper could do neither. Since the tower was activated she has lost her appetite for food and complained she couldn’t fall asleep. Those were never issues in the past. She also suffered with horrible nightmares. She would toss and turn and scream out. I only realized how often she did this after we moved to the cottage and she slept peacefully through the night.”

The cottage Courtney is referring to is the unheated cottage they have rented so they can escape their home which they hope and pray they can return to, but much of that depends on a federal judge’s decision. The cottage does not have hot water so Courtney and her family return to their “tower home” for a hot shower, but it is a place they can sleep through the night.

“When we would spend too much time at home, my little one would ask to leave and go to the cottage,” explains Courtney, describing how they would return to the house to get clothes, take a hot shower, and be with their toys and amenities they enjoyed and never contemplated leaving until Verizon became their unwelcome neighbor.

“She would say, “I’m ready now” and we knew despite mentally wanting to stay in her own room with her toys, ‘lovies’, fort, books and the only home she had ever known, that physically she knew her body felt better spending time in a rundown cottage where the only thing she had was a mattress on the floor and many mice for company.

At our home by the tower, she would lay down on the kitchen bench with her legs curled up to her stomach with red, puffy eyes, looking miserable, sleep deprived and not feeling herself. She would be so nauseous that she missed school, which led to her losing confidence as she felt she was falling behind in her studies,” describes the mom of two. “Despite being one of the top students in the class, she felt like she had missed so much and felt ill so often and felt that reflected in her work, that she chose to not take the 5th grade MCAS testing.”

Courtney pauses for a moment as she describes what her “little one” has gone through, and then continues. “One day, within 10 minutes of going to school, she vomited into her face mask. It wasn’t the first time it would happen. She would sleep with a bucket besides her bed and both her dad and I would take turns holding her hair back.

“Amelia, at our first in person Board of Health meeting, shared what our routine was like. She reminded me that we needed to ‘show’ not ‘tell’ what life by the tower was like.” So, with her mother by her side, 13-year-old Amelia Gilardi sat behind the table testifying with her mom showing the various medications Amelia now takes, and the pan she would keep at the side of her bed when the waves of nausea were intense and sudden.

## Eliminating Digital Discrimination For the EMS Disabled (Susan Foster and Odette J. Wilkins)

"Amelia would get dizzy. She is my ice skater and gymnast with great balance, and I would watch her walk into walls," describes Courtney. "Sometimes she would vomit in the middle of the night and I'd hear her little voice besides me in the dark by my bedside saying, 'Mama, I'm sick. I just threw up in the sink.'

"Sometimes she would get headaches. She would be dizzy. I remember her schooling from home and having missed several days and realizing that I should check in with the school nurse and tell her why. I remember wondering what she would say, and to my surprise, she actually knew about the [cell tower harms] issue and was supportive."

"For Amelia, sleep had never come easy, but once she fell asleep, she was a sound and solid sleeper. After the tower, that wasn't the case," Courtney explains, describing the sudden onset symptoms of classic electromagnetic sensitivity. "She not only had a hard time falling asleep and was often still up at midnight. She just couldn't stay asleep. She was up at 1:00 AM, 2:00 AM, 3:00 AM in the morning. She testified at the City Council getting as few as two to three hours of sleep a night. Often around 4:00 AM or 5:00 AM she would fall asleep, only to be woken by the alarm at 6:00 AM. She never felt or looked rested. She had dark circles under her eyes which always looked tired.

"She had headaches and would ask for Tylenol. We hardwired everything and bought her blue light glasses and tried to spend as much time away from home as possible." Courtney describes trying to juggle their lives and adjust everything, sometimes on a daily basis. Watching her daughters' misery was the hardest part. As she was trying to empower her neighbors she sometimes felt powerless herself. In describing Amelia's struggle, Courtney shares, "Sometimes she would vomit, sometimes she would just retch, and watching that was even worse, because it was like something wanted to come out, but couldn't, and she couldn't get any relief. We tried Tums, papaya enzyme, chamomile, mints, ginger chews and ginger tea and a relaxing lavender spray. We tried everything, but nothing really worked besides distance, which meant leaving our home."

When Amelia Gilardi wrote her own version of the children's classic about Alexander's horrible day, she ended with the following. The only factual change is that the Health Department has, indeed, sided with the Gilardis against Verizon. Now it's up to a federal judge in a country with increasing numbers of residents extremely unhappy to have cell towers invading their neighborhoods and marking the school grounds at their children's schools.

From Amelia:

### ***The really bad, worst, no good bad part –***

*We learned that we were not the only ones harmed by cell towers. We were put in touch with Noah Davidson's family in Sacramento California. Both their girls, like us, got sick when a 5G tower was placed outside their bedroom window. No one listened to them either.*

*Mom learned about a boy, my age in Canada, also harmed by wireless radiation since he was 5 years old. They made a movie about him and others who were harmed, called Prisoners without Walls. We talked and I learned he liked the same book series. He loved playing video games. He spoke French and liked making videos.*

*We started meeting families from all over with everyday kids, like us, who had been harmed from wireless radiation either from cell towers or mobile devices. Why, if so many people were being hurt from this, was no one helping them?*

## Eliminating Digital Discrimination For the EMS Disabled (Susan Foster and Odette J. Wilkins)

*So the truly bad, no good part is that the science is here but our legislators simply are not responding fast enough. Dr. Paul Heroux, Dr. Martha Herbert, Dr. Magda Havas, Dr. Cindy Russell, Dr. Sharon Goldberg, Theodora Scarato, Cecelia Doucette and many others have tried to educate Pittsfield about these issues. They have been silenced at meeting, and any letters from them or offers to present information or assist with an investigation have fallen on deaf ears.*

*My mom would ground me if I was told not to do something and I kept doing it over and over. I've heard my grandma say, "When we know better, we do better."*

*Big people, we know better. Please, do something. We never thought this could happen to us so please, don't wait until it happens to you.*

*I'm asking everyone who is reading this to **advocate for cell tower setbacks away from schools and homes**. I'm asking everyone to require the FCC standards that fail to protect us from biological harm to be updated. I'm asking you restore my neighborhood to the safe, residential place it was before the tower, and I am asking for each and every person to care about the wireless safety issue.*

*Our people, our pollinators and our planet depend on you.*

*Amelia*

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Implementing the Infrastructure Investment	)	GN Docket No. 22-69
and Jobs Act: Prevention and Elimination of	)	
Digital Discrimination	)	

**REPLY COMMENTS OF ADVOCATES FOR THE EMS DISABLED**

Children’s Health Defense, Susan Foster, Medical Writer, Fire & Utility Consultant;  
Odette J. Wilkens, President & General Counsel, Wired Broadband, Inc.; Frank Clegg,  
(formerly, President of Microsoft Canada), Canadians for Safe Technology; Kent Chamberlin,  
PhD, Former member of the NH Commission to Study The Environmental and Health Effects of  
Evolving 5G Technology; Californians for Safe Technology; Julie Levine, 5G Free California;  
Coloradans for Safe Technology; Larry Ortega, Community Union, Inc.; Paska Nayden,  
Connecticut for Responsible Technology; Ms. Eva Bortnick; Howard Goodman, Esq.; Safe  
Technology Minnesota; 5G Free Rhode Island; ; Napa Neighborhood For Safe Technology;  
Massachusetts for Safe Technology; New Hampshire for Safe Technology; New Yorkers 4  
Wired Tech; Pennsylvanians for Safe Technology; Stephen R. Dahl, Director, Rhode Islanders  
for Safe Technology; Safe Tech International; Sidnee Cox, Windsor, CA; Safe Tech for Santa  
Rosa; Virginians for Safe Technology; Mark Wahl, Director, Citizen League Encouraging  
Awareness of Radiation of Whidbey Island, WA; Lendri Purcell, President, FACTS (Families  
Advocating for Chemical and Toxics Safety); Ms. Linda Dance, Engineer; Lex Kisteneff, CEO  
& Founder, The South Carolina Coalition for Wireless Safety Standards; mocoSafeG.org in  
Montgomery County, MD; Kirstin Beatty, Director, Last Tree Laws Massachusetts, Holyoke,  
MA; Josh Hart, Director, StopSmartMeters.org; Pittsfield Cell Tower Injured and Concerned

Citizens; Liberty Goodwin, Director, Toxics Information Project (TIP); Richard Thom; Tracey Roizman, DC, Asheville, NC; Hank Allen, Idahoans for Safe Technology; Margaret Phillips, MA, MPH; Flo Mitchell Kosik; Grace Shen, Physical Therapist; Shawn Hutchens, CEO of Green Fields Trading Co Inc., Lake Station, Indiana; Friends of Merrymeeting Bay (FOMB); Maine Coalition to Stop Smart Meters; William Now, Carmichael, CA; Barbara Payne, President, Electromagnetic Pollution Illnesses Canada Foundation (EPIC); Keldwyn Teves, Artist & Writer, Fletcher, NC; Janet FitzGerald, Sharon MA; Patricia Burke, EHS Disabled, Journalist/Advocate, Millis, Massachusetts; Monique Maisenhalter, SWORT Board Member, SW Ohio for Responsible Technology; Nancy Perlman, Glen Ellyn, Illinois; Diane Douglas, Licensed Occupational Therapist, Fairview, NC; Sharon Behn, Arden, NC; Tais Howard LAC, MAOM, Dipl. O.M. (NCCAOM); Natalie Sadler, MD, Holistic Psychiatry; Nancy Van Dover BA, DVM, OMD, Dipl Acup; Cynthia Franklin, Director, Consumers for Safe Cell Phones; Andrea Mercier, Mother; Cheriel Jensen; Mark Graham, Keep Cell Towers Away, Elk Grove, CA; Michael Muadin, President of AMRA, Alliance for Microwave Radiation Accountability, Inc., East Chatham, New York; Malibu For Safe Tech; Shannon Shine, Rocky Mountains for Safe Technology; Ann K. Friday, Relocate the Cell Tower Group, Prescott, AZ; Stephanie Thomas, Phoebe Ann Thomas Sorgen (Co-Founder), Soula Culver, Sarah Aminoff, Meaveen O'Conner, Sandy Nixon, Connie Anderson, Members, WiRED, Berkeley, CA; Luanne Moore, Boynton Beach, FL; Glen Ellyn VHP, Glen Ellyn, IL; Debra Green, Safe Tech Hawaii, Kihei, Hawaii; Shane Riley, 5G Free Oregon, Portland, OR; Keep Oregon for Safer Technology; Ellen Marks, California Brain Tumor Association, Indian Wells, CA; Frederick P. Sinclair, Jr., Alfred, NY; Cynthia Rahav, Berkeley, CA; Susan Jennings, SW Pennsylvania for Safe Technology, Mount Pleasant, PA; Lisa C. Smith, Safe Tech Tucson, Tucson, AZ; Linda Smith, EMF



Wellness Tucson, Tucson, AZ; Scott Tips, President & General Counsel, National Health Federation (hereafter “Advocates for the EMS Disabled”) submit these Reply Comments in in the above-captioned proceeding.

The Advocates for the EMS Disabled made two principal points in their Comments. First, the Commission should always prioritize “to the premise” fiber solutions and rely on wireless only when wired is technically or economically infeasible or the main purpose is mobility. Second, if the Commission is sincere about achieving “diversity, equity and inclusion” it **must** recognize the specific and profoundly deleterious effects of Radiofrequency Radiation (RFR) on the EMS Disabled and take immediate, full force-measures within its regulatory remit to address and solve this growing plight. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. The Commission can and should establish such zones, or at least allow local and state authorities to do so without threat or fear of litigation on preemption grounds. To fail to seek accommodation for this growing population of EMS Disabled is to facilitate, albeit unintentionally, the direct opposite of the stated goal of achieving diversity, equity and inclusion.

To illustrate the need for accommodation, the Advocates for the EMS Disabled offered in their May 16, 2022 filing with the FCC four (4) real-life accounts of individuals who have suffered EMS disability as a result of exposure to wireless radiation. Two of these cases were individuals who had cell towers placed in front of or within close proximity of their homes, one a macro tower and one a small cell. The other two individuals suffered disabling EMS symptoms after rooftop antennas were placed on the apartment buildings in which they lived. With these Reply Comments, the Advocates for the EMS Disabled summarize and highlight a sample of filed comments from individuals who have experienced Electromagnetic Sensitivity (EMS) – the

malady comprising a constellation of neurological symptoms, also referred to as Electrosensitivity (EHS).

As of June 28, 2022, there were 333 comments listed by ECFS the FCC in GN Docket No. 22-69. Among those 333 comments, 50.15 percent, more than 50 percent of the respondents, requested fiber to the premises (FTTP). More than 62 percent advocated that the EMS Disabled be accommodated with fiber to the premises and wireless-free zones. 65.17 percent stated they suffered from EMS disability or their family members and/or friends experienced symptoms of Electromagnetic Sensitivity.

### **FIBER TO THE PREMISES AS A SOLUTION**

More than 50 percent of the commenters took the time to argue for a “fiber first” preference, similar to that recently adopted by NTIA in its Broadband Equity, Access and Deployment (BEAD) program Notice of Funding Opportunity.<sup>1</sup> Here are a few excerpts:

Prioritize fiber to the premises (FTTP) solutions. The goal should be to bring fiber as close to the user as possible, to use a copper tail for short distances where necessary, and to resort to wireless technology as a last resort due to health implications of wireless. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Individuals who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband. Discriminating against vulnerable populations, such as those with EMS, is unconscionable and is not consistent with the goal of achieving “diversity, equity and inclusion.” I urge the FCC to do everything in its power to halt any further discussion of expanding wireless services, recognize this specific problem and take special measures that are within its duty/regulatory authority to effectively address it and use fiber as an alternative.

[Tracy C Schlanser, June 6, 2022](#)

Please do all you can to enable fully WIRED TECHNOLOGY for all places, private and public, including Schools, Libraries, Hospitals, Universities, and more. This is a CRUCIAL matter to very many people.

[Martha Glaser, June 9, 2022](#)

Hello Thanks for the opportunity to comment. Science begins with our collective experiences (what is known) combined with logic & reason. As an engineer in the

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<sup>1</sup> The BEAD NOFO is available at <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf>.

telecom industry, I spent about 7 years (in the 1990s) designing & testing telecom equipment to meet the industry's requirements. The operating companies require equipment to limit RF emissions as well as be resistant to RF energy. The only reason for this is to not interfere with other electronics and intentional RF transmissions, including those in telecom. To pass the resistance tests the traffic must not have any bit errors when bombarded with RF at various frequencies & power. I learned that cell phones could create bit errors if the equipment could not pass the tests. It was at that time I realized that if cell phones could impact these shielded electronics which function at milliamp and low voltages (3v/5v/12v), how could they not impact living organisms where our electrical systems are in the millivolt & microamp range. Simple logic dictates that there must be some effect on living organisms without the shielding of the telecom equipment. In addition, RF was also known for its ability to excite molecules (one result is creating a heating effect). This could not be good for organisms either. Science dictates RF must have a negative effect on humans. While our experience can give us some good ideas of these negative effects, only research could give us the actual details of what these effects are. I came to learn there was a good deal of research from other countries during the early days of radar and in recent decades a great deal more research has been added. The FCC must be aware of this, no? Being exposed to so much RF humans are being harmed in many ways, so it's time to finally acknowledge this. You can no longer ignore the growing amount of evidence by many reputable scientists & organizations around the world. It's time to put fiber optic communications first, ahead of RF and 5G!

[Anthony P Notos, June 27, 2022](#)

Please build a broadband network with fiber optic cable to homes and businesses, rather than 5G. Fiber optic is better and safer in every respect. Fiber optic is faster, uses less energy, does not emit potentially hazardous radiation, and does not create a visual blight in our cities with ugly 5G transmitters located on every telephone pole. Please be smart and implement a fiber optic broadband system!

[Eben Fodor, June 7, 2022](#)

I am extremely concerned that the FCC is making wireless rollout the chosen way to go instead of wired (fiber-based) broadband which should be the preferred mode of broadband delivery.

[Bibi Caspari, June 21, 2022](#)

People have a right to choose what forms of technology they use. It should not be forced by removing choices. Every person, especially the EMS-disabled, should have access to fiber-based /wired broadband. The 5G rollover was done with our money & without our consent.

[Cindy Kortlever, June 2, 2022](#)

Please stop the buildout of more towers and infrastructure now so that people like me can escape to rural areas (the only places we can feel normal and well again) and invest money in creating hardwired schools and public spaces.

[Jennifer Manzler, June 1, 2022](#)

Prioritize fiber to the premises (FTTP) solutions. The goal should be to bring fiber as close to the user as possible, to use a copper tail for short distances where necessary, and to resort to wireless technology as a last resort.

[Manuela Seitz-Hipkins May 31, 2022](#)

As someone who suffers from a wide variety of sensitivities, I urge the FCC to take into consideration all those with EMS and keep fiber first when doing the vital work of providing everyone with broadband services. Please always prioritize “fiber to the premises (FTTP)” solutions. The FCC should rely on fixed wireless only when fully wired is technically or economically infeasible, keeping the main purpose of mobile wireless as supporting mobility--not to be a substitute for wired fixed arrangements. Please also consider allowing for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Those who cannot be around RF must have the ability to obtain wired (fiber-based) broadband so that they may maintain equal access to technology as well. Thank you for ensuring everyone can safely make use of the technology we all need to participate in our current electronic society.

[Aleks Kosowicz May 30, 2022](#)

I am writing today to advocate for fiber to the premises (FTTP) solutions. The goal should be to bring fiber as close to the user as possible and to resort to wireless technology as a last resort. People who are RF-sensitive, especially those with EMS disabilities, must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being. Individuals who cannot be around RF must have the ability to obtain wired (fiber-based) broadband.

[Karol Olson, June 6, 2022](#)

While studies are still being conducted in this area, we know enough to use caution - since the long-term effects won't likely be known for many years. I am asking the FCC to protect our children - the future generation - through the use of fiber-based broadband, as opposed to running the risk of harming Americans by promoting wireless connectivity.

[Julie Ann Blowers, June 17, 2022](#)

Wired (fiber-based) broadband should be the preferred mode of broadband delivery and to finally recognize the need for special measures to address the electromagnetic sensitivity (EMS) disabled community.

[William Brobeil, June 17, 2022](#)

I must express my concern and demand for the option of wired broadband not only for the EMF DISABLED but for all those involved given the known risks of exposure.

[Roy Monsour, June 1, 2022](#)

The FCC should always prioritize “fiber to the premises (FTTP)” solutions. FTTP is the installation of optical fiber directly to individual homes, multi-dwelling units, schools, municipal buildings and businesses to provide high-speed broadband access. The FCC should rely on fixed wireless only when fully wired is technically or economically infeasible. The main purpose of mobile wireless is to support mobility, not to be a substitute for wired fixed arrangements. Those who are RF-sensitive and especially those

with EMS disabilities must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Those who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

[Dr. Carol Taccetta, June 17, 2022](#)

## **THE NEED FOR ACCOMMODATION OF EMS DISABLED TO FULFILL PROMISE OF DIVERSITY, EQUITY AND INCLUSION**

Some 62.16 percent advocated that the EMS Disabled be accommodated with fiber to the premises and wireless-free zones.

There must be an allowance for RF-free safe zones in public spaces and buildings to ensure inclusion in public life. Individuals who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband. Discriminating against vulnerable populations, such as those with EMS, is unconscionable and is not consistent with the goal of achieving diversity, equity and inclusion. I urge you to do everything in your power to halt any further discussion of expanding wireless services, recognize this specific problem and take special measures that are within your regulatory authority.

[Brent Rudolph, June 8, 2022](#)

Yes to access for everyone, but it must be #fiberfirst [t]o protect the health of the vulnerable. We oppose the cheaper, wireless rollout which emits toxic radiation 24/7. Medical literature has shown it to cause a variety of neurological and cognitive symptoms, oxidative stress, metabolic, hormonal and sleep disruptions among many other serious adverse reactions. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Those who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

[Erica Comerford, June 27, 2022](#)

There have to be WiFi/Cell and “smart” free zones set up as accommodations for people who are ElectroSensitive-Aware, ES-Injured, and ES-Sensitive. I believe I have been injured by being in a 2021 car purchased for newly driving family members, so cars also need to be able to be purchased that can be fully disconnected from Bluetooth, WIFI, Hotspots, and Cellular Data. The same will have to be true for train and airplane travel. I believe that forcing RF radiation exposure – even as part of a genuine effort to afford broadband access – is itself a form of discrimination as a matter of law. More importantly, it is fundamentally inequitable because it leads to great harm: people with severe symptoms are functionally excluded from public participation since almost all public spaces are flooded with RF, and those with wireless facilities nearby cannot even take refuge in their own homes. Please do all you can to enable fully WIRED



TECHNOLOGY for all places, private and public, including Schools, Libraries, Hospitals, Universities, and more. This is a CRUCIAL matter to very many people. Thank you.

[Martha Glaser, June 9, 2022](#)

There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Individuals who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband. Discriminating against vulnerable populations, such as those with EMS, is unconscionable and is not consistent with the goal of achieving diversity, equity and inclusion.

[Erik Harper, June 7, 2022](#)

People who are RF-sensitive, especially those with EMS disabilities, must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being.

[Carlos Ralat, May 30, 2022](#)

I believe that forcing RF radiation exposure – even as part of a genuine effort to afford broadband access – is itself a form of discrimination as a matter of law. More importantly, it is fundamentally inequitable because it leads to great harm. People with severe symptoms are functionally excluded from public participation since almost all public spaces are flooded with RF, and those with wireless facilities nearby cannot even take refuge in their own homes.

[Miriam Eckenfels-Garcia, May 27, 2022](#)

I’m urging you to formally recognize electromagnetic sensitivity and set a firm precedent whereby high speed wired connections are the preferred means of installation.

[Michael Kaminsky, June 17, 2022](#)

People who are RF-sensitive, especially those with EMS disabilities, must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Individuals who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

[George and Donna Machen, June 7, 2022](#)

I [] plead with the FCC to make accommodations for EMS-disabled citizens by creating and including ‘wireless-free zones’ in public places.

[Melia James, June 1, 2022](#)

Please have schools and daycares use fiber/wire for internet and not WiFi. The EMF levels in classrooms where children are for 7 hours a day are so high! They need to be protected from the range of symptoms that can come with EMF sensitivity.

[Jennifer, May 30, 2022](#)

Discriminating against vulnerable populations, such as those with EMS, is unconscionable and is not consistent with the goal of achieving diversity, equity and inclusion. I urge the FCC to do everything in its power to halt any further discussion of expanding wireless services, recognize this specific problem and take special measures that are within its duty/regulatory authority to effectively address it.

[Julie Ranieri, May 30, 2022](#)

The FCC should always prioritize “fiber to the premises (FTTP)” solutions. FTTP is the installation of optical fiber directly to individual homes, multi-dwelling units, schools, municipal buildings and businesses to provide high-speed broadband access. The FCC should rely on fixed wireless only when fully wired is technically or economically infeasible. The main purpose of mobile wireless is to support mobility, not to be a substitute for wired fixed arrangements. Those who are RF-sensitive and especially those with EMS disabilities must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Those who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

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[Paul Rauh, June 17, 2022](#)

It is fundamentally inequitable because it leads to great harm: people with severe symptoms are functionally excluded from public participation since almost all public spaces are flooded with RF, and those with wireless facilities nearby cannot even take refuge in their own homes. It should be enough that people don’t want to be exposed to RF pollution with unknown harms. I am left wondering if my family’s health problems are caused or worsened by all the RF pollution, and we can’t opt out even to test whether it makes a difference.

[Kari Olsen, June 02, 2022](#)

This technology is making millions of Americans sick, and it is past time that it be recognized and addressed. I applaud the Federal Communications Commission’s (FCC) initial effort to place emphasis on “harms experienced by historically excluded and marginalized communities” and the desire for “meaningful policy reforms and systems improvements, as well as a framework for collaborative action to extend digital opportunity to everyone. There must be an allowance for RF-free safe zones in public spaces and buildings to ensure inclusion in public life. Individuals who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

[Greg Fedak, June 1, 2022](#)

Discriminating against vulnerable populations, such as those with EMS, is unconscionable and is not consistent with the goal of achieving “diversity, equity and inclusion.” I urge the FCC to do everything in its power to halt any further discussion of expanding wireless services, recognize this specific problem and take special measures that are within its duty/regulatory authority to effectively address it.

[Kitt E Stevens, June 27, 2022](#)

There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Individuals who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

[Angela Dicianno, June 6, 2022](#)

I am an EMS disabled individual who would like to make it known that broadband/hardwired internet should be available, accessible, and the norm and having WiFi free zones, workspaces and SCHOOLS needs to happen. My son has an insanely enormous WiFi tower on his schools property. This can't be what children have to have. This can't be what is happening. Everything is being harmed by this.

[Patience Pecoraro-Nead, June 1, 2022](#)

We cannot commit to stakeholder expectations nor our mission statements without safe places for EMS people, I feel that is including myself. My workplace is a place for alleged healing and EMS people have a right to be protected as do staff and visitors. Transparency is key. People first then things then money. Your entire plans will go south when too many people are sick from your lack of due process. Thank you for taking these matters seriously and involving and including experts in matters like this.

[Sam Filer, Don Hall, June 1, 2022](#)

Many people's lives are being destroyed by the mass use of RF. The FCC “acceptable limits” are not based on biological effects, only thermal. Most countries have far lower limits. These EMFs can eventually cause permanent disability and leave a person with no means of participating in society. We need access to safe, wired technology and wi-fi free zones in public spaces. And you must stop putting wireless transponders into things that come into our homes that we cannot escape. I have Direct TV and even though it is completely hard-wired, there is a powerful transponder within the receiver that is impossible to shut off that makes me very dizzy and unable to concentrate. It took years to find out why I couldn't be near it. Many more items, like appliances, will soon contain these for Smart Homes, making life impossible, so we'll have to live without many staple items we've enjoyed since the beginning of the Industrial Age. The only reason it is being done is for money and profit, but the welfare of the people must come first.

[Beckie Takacs, June 1, 2022](#)

EMS is a real problem making people sick and disabled. There should [] be wireless free zones in public areas. This technology emits a toxin that significantly impacts the brain and other organs, triggering disabling headaches, ‘brain fog,’ vertigo, difficulty sleeping, skin rashes and a host of other symptoms. We should not ignore EMS because it is a

health threat to all of us including animals. There should be guidelines and safety measures and warnings for the public.

[Nancy Bender, June 1, 2022](#)

People who are RF-sensitive, especially those with EMS disabilities, must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Individuals who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

[Fariha Husain, May 27, 2022](#)

### **EMS DISABLED – IN THEIR OWN WORDS**

65.17 percent of the commenters stated they suffered from EMS disability or their family members and/or friends experienced symptoms of Electromagnetic Sensitivity. Their stories are compelling, and they cry for acceptance, equity, inclusion and relief from their suffering. In their own words:

I am a teacher and recently had to change schools due to reactions I was having from 2 cell towers put up in a community park right next to the school I work at. These towers are within 150 meters from my classroom. I understand the demand for better connectivity for the public but at what cost. I have experienced headaches, dizziness, brain fog, memory loss, and rash since in the classroom I am leaving this year. I also have students complain about headaches daily. Please look into the harmful effects these towers and the wifi in the classrooms may have on the teachers and students.

[Cheri Rose, June 1, 2022](#)

I am someone who has been diagnosed with Electromagnetic Hypersensitivity (EHS). This happened to me about 5 years ago when a SmartMeter was installed outside my bedroom window and I became very sick, unable to sleep at night (waking every hour suddenly), nerve pain, numbness, and cramping in my hand every time I held my cell phone, terrible tinnitus in my ears, anxiety and headaches, and nerve pain in my entire body. I have spent the past few years and a lot of money taking mitigation measure in my own home (hard wiring with ethernet connections, installing silver fabric screens over walls and windows, and purchasing shields to protect my body from the harmful wireless radiation waves) in addition to not using a cell phone except in emergencies and staying out of public wifi places. I have a difficult time even being in close proximity to someone using a newer stronger 5G compatible phone. Please recognize this condition that is making people sick and affecting more and more Americans every day because of the density of wireless radiation in our country and the proliferation of 4G/5G towers in our communities.

[Jennifer Manzler, June 1, 2022](#)

As a nurse with a diverse background of clinical experience, I, along with 3500 members of our group, "citizens for 5g awareness" are imploring you to take into account the disabilities and adverse symptoms that are a direct result of involuntary wireless radiation exposure, and act to remove and reduce cell panels, towers, and other impacting technology that is at fault along with the companies that have allowed this to continue. I myself have developed debilitating PVC's and subsequent weakening of the ventricles of the heart after a small cell was constructed down the block from my home. While it has severely impacted my life, I want to use the opportunity to educate and advocate on behalf of myself, others going through similar experiences, and those who do not yet have symptoms but soon very well may, as exposure continues unchecked.

[Sara Lobato, June 1, 2022](#)

Because of where I live, I must use a 5g device from T-Mobile. This device when turned on, within minutes induces headaches, ear ringing, and nausea to name a few. I can't work from home or connect to the outside world with this.

[Jason Diponio, June 1, 2022](#)

I am EMS-disabled. My symptoms started "years ago" & long before I even knew what EMS meant or was. The roll-out of 5G has literally, physically sickened me to the point that in the near future I will be forced to barely leave my home. I suffer from nausea, sometimes extreme, headaches, sometimes "stabbing" headaches while traveling past cell towers, tingling in my brain, tinnitus, difficulty sleeping at night, rapid heartbeat & now joint pain in hips & hands when exposed to WiFi in public places where I'm shopping including but not limited to: COSTCO (bad symptoms) Whole Foods (bad symptoms), Folsom City Zoo (they added new antennas inside zoo!), Church, Crunch Fitness, 24 Hour Fitness, my car dealership for service (WiFi antennas everywhere), coffee shops & even movie theaters! I feel like my life has been stolen from me. I was very active in Church, Gym, regular movie goer, restaurants, Folsom and Sacramento City Zoo memberships and much more. I believe in my local city economy which I've supported until recently. Since the roll-out of 5G approx 3+ months ago, I've been robbed of enjoying church, movies (gone to movies 60 yrs---a passion), and if gym is crowded I have to leave. I no longer attend Church & this is extremely upsetting to me! I'm even being WII's from all my neighbors, their devices & antennas on houses in my neighborhood! I want to move somewhere where my body can heal & be away from all the electro-smog that I'm convinced will ultimately kill me based on how badly I feel at times. I have been "an above average" active person & exercised "above average" my entire life starting in elementary school. This has been extremely difficult! I've spent over \$14k for modifications in my home (prior to 5G) only to have my 5G neighbors infringe on my living space that is difficult again. Prior home modifications don't stand a chance with 5G! I have to sleep in the living room since my bedroom is too close to my neighbors 5G bedrooms & devices. I'm a 24x7 care-giver and conservator to my low-functioning special needs sister who suffers alongside me. This is so unfair to her since she doesn't understand what's happening to her. In her behalf, I am submitting another comment. I am no longer an active member of society & the government has failed to protect me & my sister (entire population actually) against harmful radiation! For that I



am appalled. Thank you for taking this seriously & for working on a resolution for EMS-disabled people!

[Debbie Trublood, June 27, 2022](#)

As a person extremely sensitive to radiation from WiFi and cell towers I was driven from my home when a cell tower was built close to our property as resulting severe headaches and neurological complaints completely disabled me. I implore the FCC to take what EMS has done to a growing segment of the community seriously and offer protection from indiscriminate radiation.

[Lia Langston, June 1, 2022](#)

My partner has experienced headaches, brain fog, and drowsiness in the presence of high electromagnetic frequencies. We first realized this when his cell phone was on in a 2011 Prius. Problems were exacerbated when he bought a plug-in Prius which he was forced to trade in. We believe many drowsy drivers and car crashes may be created by use of EMF technologies without protection.

[Noalani Terry, June 1, 2022](#)

I have electromagnetic sensitivity, and have experienced the nightmare of being assaulted on a 24-7 basis by wireless radiation from utilities and neighbors I cannot control, in my own home. We must curb the reckless, unchecked agency of the telecom industry to place harmful cell towers and repeaters in close proximity to our living and sleeping spaces. I am not thriving and have continued health challenges due to the ever increasing exposure to constant radiation in my home, despite my best efforts to minimize my own contribution to the mess.

[Haw-Bin Chai, June 1, 2022](#)

I am one of the up to 30% of people who are sensitive to EMS and I request that you find a way to eliminate digital discrimination for the EMS disabled. We need to be able to participate in society and be safe in our own homes. Thank you.

[Jane Carlson, June 1, 2022](#)

I have been suffering from EHS for several years. I noticed heart palpitations, head pain, anxiety, loss of words, confusion on several occasions in 2018. They happened when I was using cell phones in the car. They happened when I was in proximity to a hotspot and wifi laptops. They happened when I tried using a Roku streaming player. They happened when I was upstairs from my tenant's "smart" meter, and I have paid PG&E to have that meter removed from my rental as it's been off my own home. I saw a cardiologist and other doctors who ruled out other serious problems. The symptoms continued and persist when I am in a building with wifi and with people using cell phones, even when I drive my kids to school and back. When I pass a cell tower, I feel a stabbing pain in my temple. I can only be outdoors and stay far away from people on their phones. We have a wired router and ethernet cords to our computers at home, and use a landline, no cell phone. This problem is huge, and I dread having to go to public places like the store, the library, and doctors' offices. It is a real problem learning how to live and cope. Only because I

am, sadly, meeting more and more people who have similar experiences do I feel like this has got to change.

[Martha Glaser, June 9, 2022](#)

I am an EMS person and I have family members who are as well. We have the right to be free of this ever present, non stop radiation.

[Constanza Abrams, June 1, 2022](#)

I was diagnosed with EM Hypersensitivity in 2016, while living in a home immediately adjacent to two cell phone towers. This acute EMF exposure has permanently altered my life, ability to function, work, travel, and everything else. I have a long-standing neurologic disease, which was never a major issue in my life before, but which was brought out of remission by living next to the cell towers. I became so ill, that my family was forced to move to a new home. In addition to my disease coming out of remission, I developed debilitating symptoms of aggravated nerve pain, migraines, heart arrhythmias, global inflammation, and several other health issues. I now have to severely limit my wireless EMF exposure for extended periods of time, in order to live a decent quality of life or be able to raise my children; and every time I don't do this, I become very ill again. Please don't deny this issue. I knew nothing about the harm from wireless radiation before my own condition developed, but now I KNOW wireless EMFs are damaging to all people--most especially those of us with body constitutions who are sensitive to these harmful radio waves. There are many of us who are literally becoming allergic to the modern world because of wireless EMFs everywhere, and it is terrifying to not have a place to go for safety where we can live normal, productive lives as people, parents, employees, etc. We deserve fair and equal treatment for our disabilities and our suffering. Thank you for your help with this most important and life-altering matter.

[Melia James, June 1, 2022](#)

As an EMF-sensitive individual and concerned RN I urge the FCC to ensure rigorous safety studies of 5G and other wireless technologies and protections for vulnerable people.

[Sheliah Roth, June 1, 2022](#)

4G and 5G has wreaked havoc on so many people I know, their children, animals, livestock and even plants/trees. Although I'm fortunate and am not constantly exposed to the 5G radiation, when I am exposed, I get incredibly sick. Please do not put any more of these towers up. They are a huge detriment to ALL living things.

[Abby Fredericksen, June 17, 2022](#)

Please look out for the citizens and stop the EMF signals in our neighborhoods! This is affecting our health. Headaches, dizziness and the feeling of unwell. We believe the future health of our children is at stake as well neurologically.

[P Stringer, Jun 17, 2022](#)

As is well known, EMF is the name given by the U.S. Access Board to the condition whereby individuals exposed to radio-frequency (RF) radiation from smartphones, WiFi,

cell towers, smart meters and other wireless devices experience adverse health effects or worsening of existing health conditions. I am someone who is within the population where it is estimated that up to 30% of the U.S. population – almost 99 million people – suffer at least mild symptoms after exposure to RF radiation, and for some, wireless exposure is the direct cause of, or at least a major contributing factor to, the impairment. This technology is making millions of Americans sick, and it is past time that it be recognized and addressed.

[Julie Ranieri, May 30, 2022](#)

I am troubled by the news that we are forced to endure 5g everywhere we go. I am bothered when I am around 5g and have had health problems as a result. This onslaught needs to stop and the putting up of cell towers everywhere must be stopped as well.

[Karen Jones, June 1, 2022](#)

Thank you for taking time [] to hear someone who had severe headaches, nausea, trouble going to and staying (a)sleep, loud ringing in my ears so I don't hear people talking, have trouble keeping focused due to the pain, severe rashes, memory loss so severe I have to write down what I'm doing so I can finish tasks. There's more suffering from radiation poisoning from emf/emr wifi, smart meters (our apartments put 4 smart meters on each building) in between our bedroom windows so we ALL are drowned in it.

[Jerri Magruder, June 23, 2022](#)

As someone with EMS, I have spent thousands of dollars working to protect myself as best I can in my home and when I go out into the community. I get heart palpitations and other symptoms when exposed to RF (wireless) technology and so try to minimize my exposure.

[Bibi Caspari, June 21, 2022](#)

EMS sensitivity is real. I know many people who have it and many more who don't consciously realize it yet. But more and more people are recognizing and making changes. It's time for the FCC to do the job it was designed to do and protect people. You can't imagine the changes you can make so let me help. Imagine leaving to a place without 5G and losing an inch to your waistline within 24 hours because 5G affects our digestive systems...Imagine sitting to watch TV and having heart palpitations...Imagine joining a Zoom call with video and having your brain on fire...these are just a few real life scenarios that could happen to you. Make a change before you are its next victim.

[Kelly Gunkel, June 17, 2022](#)

Electromagnetic sensitivity (EMS) is the name given by the U.S. Access Board to the condition whereby individuals exposed to radiofrequency (RF) radiation from smartphones, WiFi, cell towers, smart meters and other wireless devices experience adverse health effects or worsening of existing health conditions. Estimates indicate that up to 30% of the U.S. population – almost 99 million people – suffer at least mild symptoms after exposure to RF radiation, and for some, wireless exposure is the direct cause of, or at least a major contributing factor to, the impairment. This technology is

making millions of Americans sick, and it is past time that it be recognized and addressed.

[Eileen Gale, June 3, 2022](#)

I, too, am affected by wireless transmissions. My home is etherneted and I paid to have the wifi meters for electric and gas meters removed from my home. However, my part of town is filled with towers. I get headaches and feel intense levels of anxiety, teeth gnashing, etc. around modems on wifi. I take Excedrin everyday for the headaches, a mystery the Doc's can't account for. Please stop expanding the tower installations and ethernet, cable or hardwire the transmissions from now forward and plan to retrofit the existing towered areas!

[Allene Avey, June 1, 2022](#)

After a few hours in close proximity to these technologies I have experienced severe and worsening physical pain, so much so that it interferes with my ability to work. While having access to internet and cellular technologies is important, it is also important to have the option to opt out of having looming technological threats implanted in our communities. Thanks for your time.

[Charles Braddock, June 1, 2022](#)

After many years, I had to leave a big City of New York and move to CT due to severe health issues caused by RF that is all over the NYC. And a few years later, I've come to find out that once safe areas of CT without any notice got to install "death towers" aka cell towers. Making me sick every time I pass by one with no way to escape. I ask FCC to act on their sworn due in protecting We, the People.

[Vira M., June 1, 2022](#)

EMF sickness is real. I have had issues with the WiFi causing me heart arrhythmias. We should be allowed to say No to the cell towers built outside our home. This is causing real illness!

[Kimberly Crawford, June 1, 2022](#)

Wireless technology does cause real discomfort and physical harm / side effects to the electromagnetically sensitive, a legitimate subset of the population. Our family, except for one member, has this sensitivity. To this end, robust, safe FiOs/wired fast internet should be made available to all Americans, a very reasonable accommodation.

[M Lynn, June 1, 2022](#)

I have been suffering from emf sensitivities for 30 years. When the smart meters came out, I became anxious and had heart palpitations which caused me to go on beta blockers. This was 12 years ago. When WiFi came out, my condition got worse to where I now have daily headaches. We are talking migraines here along with dizziness and more heart palpitations. Cell towers cause me to be more sensitive to EMFs with the above symptoms increased, hard to eat without taking pepto-bismol because of the terribly nervous stomach. Please consider all the people who are now becoming sensitive to EMFs like me. We don't need these symptoms, nor do we need WiFi. Cell phones can

also cause the above problems as I cannot use one as it starts a headache immediately if I get too close to one.

[Joyce Soos, June 1, 2022](#)

I am filing on behalf of my low-functioning special needs sister. She also suffers from EMS. She has rapid heartbeat when we're in a buildings, stores, churches, gyms, movie theaters & even City Zoo's with WiFi, 5G and antennas everywhere! The biggest "clue" to me is she goes through behavioral changes. She is easily "agitated" & very moody when over-exposed to WiFi. She has been stripped of what little independence she had. I trained her to scan self checkout groceries but since implementation of 5G we both light up like firecrackers and can no longer go through self check outs anymore. The 2 worse ones are COSTCO and Whole Foods! This has also taken the joy away from my sister who took pride & felt like she was contributing with such a simple task as scanning groceries at check out. She LOVES Church and the gym and visits lots of friends & doesn't understand why we're not attending Church anymore (she's in tears when I tell her no to church), can't go to movies (we used to go 2-4x per month pre-pandemic) and just started going back to movies recently (but now we can't with 5G and entire audience with cell phones on & our symptoms start). My heart literally breaks for all the special needs & autistic communities whose "behavioral issues" are written off by doctors, teachers & possibly some parents who are naive to the fact the EMS exists! In many cases, these innocent souls are given destructive medications to "calm them down" when in-fact a majority of their symptoms are probably due to over-exposure of EMF's, WiFi, 5G, antennas in their homes, workplaces and schools and NOT THEIR FAULTS! I can and will testify to this fact as 24x7 care-given to my low functioning, low communication skills sister. I'm heartbroken to watch her struggle with her brain & quizzically look to me for answers as to what is happening to her physically since she can't communicate her pain to me! It's horrible to watch and endure! As most special needs parents can probably testify to, "behavioral issues" can be "them" trying to "process" (but can't in ways that we can) of the pain (both physical & emotional) that they're experiencing. (Side note: I believe wholeheartedly that Road Rage & all the unnecessary media in brand new cars contributes to Road Rage & behavioral issues in "normal people" that I witness on a daily basis as vehicles also are a source of overexposure to WiFi, EMF's!) Please help all these innocent souls & provide safe havens, education on EMS to entire nation, doctors, teachers, care-givers etc., but especially to special needs, disabled, autistic organizations. Some of these innocent souls have no voices to help them & are written off by people who should be (but are not) looking out for their needs and could care less! Thank you for addressing this urgent matter!

[Debbie Trublood \(sister/conservator\) on behalf of Lori Trublood](#)

## CONCLUSION

The filed comments overwhelmingly indicate support for the two major points and specific suggestions made in the initial Comments by Advocates for the EMS Disabled. The Commission should embrace them as well.



The Commission should always prioritize “fiber to the premise” solutions and rely on mobile or fixed wireless only when fully wired is technically or economically infeasible or the main purpose is mobility. Those who are RF-sensitive and especially those with EMS disabilities must be allowed equal access to broadband in a form that does not threaten or worsen their health and well-being. They should be able to obtain fiber to the premises as a matter of right. There must be an allowance for RF-free “safe zones” in public spaces and buildings to ensure inclusion in public life. Those who cannot be around RF must have the ability, as a matter of right, to obtain wired (fiber-based) broadband.

Respectfully Submitted,


/s/  
W. Scott McCollough  
McCollough Law Firm, P.C.  
2290 Gatlin Creek Rd.  
Dripping Springs, TX 78620  
512.633.3498  
[wsmc@dotlaw.biz](mailto:wsmc@dotlaw.biz)

Counsel for Children’s Health Defense.

The following groups and individuals have granted permission to counsel to submit these Reply Comments on their behalf under the name of “Advocates for the EMS Disabled”:

Susan Foster, Medical Writer, Fire & Utility Consultant; Odette J. Wilkens, President & General Counsel, Wired Broadband, Inc.; Frank Clegg, (formerly, President of Microsoft Canada), Canadians for Safe Technology; Kent Chamberlin, PhD, Former member of the NH Commission to Study The Environmental and Health Effects of Evolving 5G Technology; Californians for Safe Technology; Julie Levine, 5G Free California; Coloradans for Safe Technology; Larry Ortega, Community Union, Inc.; Paska Nayden, Connecticut for Responsible Technology; Ms. Eva Bortnick; Howard Goodman, Esq.; Safe Technology Minnesota; 5G Free Rhode Island; ; Napa Neighborhood For Safe Technology; Massachusetts for Safe Technology; New Hampshire for Safe Technology; New Yorkers 4 Wired Tech; Pennsylvanians for Safe Technology; Stephen R. Dahl, Director, Rhode Islanders for Safe Technology; Safe Tech International; Sidnee Cox, Windsor, CA; Safe Tech for Santa Rosa; Virginians for Safe Technology; Mark Wahl, Director, Citizen League Encouraging Awareness of Radiation of Whidbey Island, WA; Lendri Purcell, President, FACTS (Families Advocating for Chemical and Toxics Safety); Ms. Linda Dance, Engineer; Lex Kisteneff, CEO & Founder, The South Carolina Coalition for Wireless Safety Standards; mocoSafeG.org in Montgomery County, MD; Kirstin Beatty, Director, Last Tree

Laws Massachusetts, Holyoke, MA; Josh Hart, Director, StopSmartMeters.org; Pittsfield Cell Tower Injured and Concerned Citizens; Liberty Goodwin, Director, Toxics Information Project (TIP); Richard Thom; Tracey Roizman, DC, Asheville, NC; Hank Allen, Idahoans for Safe Technology; Margaret Phillips, MA, MPH; Flo Mitchell Kosik; Grace Shen, Physical Therapist; Shawn Hutchens, CEO of Green Fields Trading Co Inc., Lake Station, Indiana; Friends of Merrymeeting Bay (FOMB); Maine Coalition to Stop Smart Meters; William Now, Carmichael, CA; Barbara Payne, President, Electromagnetic Pollution Illnesses Canada Foundation (EPIC); Keldwyn Teves, Artist & Writer, Fletcher, NC; Janet FitzGerald, Sharon MA; Patricia Burke, EHS Disabled, Journalist/Advocate, Millis, Massachusetts; Monique Maisenhalter, SWORT Board Member, SW Ohio for Responsible Technology; Nancy Perlman, Glen Ellyn, Illinois; Diane Douglas, Licensed Occupational Therapist, Fairview, NC; Sharon Behn, Arden, NC; Tais Howard LAC, MAOM, Dipl. O.M. (NCCAOM); Natalie Sadler, MD, Holistic Psychiatry; Nancy Van Dover BA, DVM, OMD, Dipl Acup; Cynthia Franklin, Director, Consumers for Safe Cell Phones; Andrea Mercier, Mother; Cheri Jensen; Mark Graham, Keep Cell Towers Away, Elk Grove, CA; Michael Muadin, President of AMRA, Alliance for Microwave Radiation Accountability, Inc., East Chatham, New York; Malibu For Safe Tech; Shannon Shine, Rocky Mountains for Safe Technology; Ann K. Friday, Relocate the Cell Tower Group, Prescott, AZ; Stephanie Thomas, Phoebe Ann Thomas Sorgen (Co-Founder), Soula Culver, Sarah Aminoff, Meaveen O'Conner, Sandy Nixon, Connie Anderson, Members, WiRED, Berkeley, CA; Luanne Moore, Boynton Beach, FL; Glen Ellyn VHP, Glen Ellyn, IL; Debra Green, Safe Tech Hawaii, Kihei, Hawaii; Shane Riley, 5G Free Oregon, Portland, OR; Keep Oregon for Safer Technology; Ellen Marks, California Brain Tumor Association, Indian Wells, CA; Frederick P. Sinclair, Jr., Alfred, NY; Cynthia Rahav, Berkeley, CA; Susan Jennings, SW Pennsylvania for Safe Technology, Mount Pleasant, PA; Lisa C. Smith, Safe Tech Tucson, Tucson, AZ; Linda Smith, EMF Wellness Tucson, Tucson, AZ; Scott Tips, President & General Counsel, National Health Federation.

<b>CIVIL ACTION COVER SHEET</b>		<b>DOCKET NUMBER</b>	<b>Trial Court of Massachusetts</b> <b>The Superior Court</b>		
			<b>COUNTY</b> <b>Berkshire Superior Court (Pittsfield)</b>		

<b>Plaintiff</b> Courtney Giraldi ADDRESS: 17 Alma St. Pittsfield MA 01201	<b>Defendant:</b> Linda Tyer ADDRESS: 70 Allen St. Pittsfield MA 01201
<b>Plaintiff:</b> Charlie Herzig ADDRESS: 140 Plumb St. Pittsfield MA 01201	<b>Defendant:</b> Stephen N. Pagnotta ADDRESS: 70 Allen St. Pittsfield MA 01201
<b>Plaintiff:</b> Judy Herzig ADDRESS: 140 Plumb St. Pittsfield MA 01201	<b>Defendant:</b> Pittsfield Cellular Telephone Co. d/b/a Verizon Wireless ADDRESS: 180 Washington Valley Rd. Bedminister NJ 07921
<b>Plaintiff:</b> Mark Markham ADDRESS: 128 Elmer Ave. Pittsfield MA 01201	<b>Defendant:</b> Farley White South Street, LLC, Roger W. Altruter (designated agent) ADDRESS: 155 Federal St., Ste 1800 Boston MA 02110 Pittsfield MA 01201
<b>Plaintiff:</b> Angelika Markham ADDRESS: 128 Elmer Ave. Pittsfield MA 01201	<b>Defendant:</b> Roberta Orsi, Brad Gordon, Stephen Smith, Kimberly Loring and Dr. Jeffrey Leppo, collectively the Pittsfield Board of Health ADDRESS: 70 Allen St. Pittsfield MA 01201
<b>Plaintiff:</b> Elaine Ireland ADDRESS: 15 Alma St. Pittsfield MA 01201	<b>Defendant:</b> ADDRESS:
<b>Plaintiff Attorney:</b> Paul Revere, III ADDRESS: Law Offices of Paul Revere, III 226 River View Lane Centerville, Massachusetts 02632 BBO: BBO #636200	<b>Defendant:</b> ADDRESS:
<b>Plaintiff Attorney:</b> W. Scott McCollough ADDRESS: McCollough Law Firm, PC 2290 Gatlin Creek Rd. Dripping Springs, TX 78620 BBO: pending pro hac vice	<b>Defendant:</b> ADDRESS:

TYPE OF ACTION AND TRACK DESIGNATION (see instructions section below)			
<b>CODE NO.</b> E03	<b>TYPE OF ACTION (specify)</b> Certiorari Action, G.L. c. 249, § 4	<b>TRACK</b> X	<b>HAS A JURY CLAIM BEEN MADE?</b> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
*If "Other" please describe:			

<b>Is there a claim under G.L. c. 93A?</b> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<b>Is there a class action under Mass. R. Civ. P. 23?</b> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<b>STATEMENT OF DAMAGES PURSUANT TO G.L. c. 212, § 3A</b>	
The following is a full, itemized and detailed statement of the facts on which the undersigned plaintiff or plaintiff's counsel relies to determine money damages. For this form, disregard double or treble damage claims; indicate single damages only.	
<b>TORT CLAIMS</b>	
A. Documented medical expenses to date	
1. Total hospital expenses	_____
2. Total doctor expenses	_____
3. Total chiropractic expenses	_____
4. Total physical therapy expenses	_____

## 5. Total other expenses (describe below)

Subtotal (1-5): **\$0.00**

B. Documented lost wages and compensation to date

C. Documented property damages to date

D. Reasonably anticipated future medical and hospital expenses

E. Reasonably anticipated lost wages

F. Other documented items of damages (describe below)


TOTAL (A-F): **\$0.00**

G. Briefly describe plaintiff's injury, including the nature and extent of injury:

**CONTRACT CLAIMS**
☐ This action includes a claim involving collection of a debt incurred pursuant to a revolving credit agreement. Mass. R. Civ. P. 8.1(a).

Item #	Detailed Description of Each Claim	Amount
1.	None	\$0.00
Total		<b>\$0.00</b>

Signature of Attorney/Unrepresented Plaintiff: X Paul Revere, IIIDate: 07/28/2020**RELATED ACTIONS:** Please provide the case number, case name, and county of any related actions pending in the Superior Court.

None

**CERTIFICATION PURSUANT TO SJC RULE 1:18**

I hereby certify that I have complied with requirements of Rule 5 of the Supreme Judicial Court Uniform Rules on Dispute Resolution (SJC Rule 1:18) requiring that I provide my clients with information about court-connected dispute resolution services and discuss with them the advantages and disadvantages of the various methods of dispute resolution.

Signature of Attorney/Unrepresented Plaintiff: X Paul Revere, IIIDate: 07/28/2022

# CIVIL ACTION COVER SHEET INSTRUCTIONS

## SELECT CATEGORY THAT BEST DESCRIBES YOUR CASE

### AC Actions Involving the State/Municipality \*

AA1 Contract Action involving Commonwealth, Municipality, MBTA, etc. (A)  
 AB1 Tortious Action involving Commonwealth, Municipality, MBTA, etc. (A)  
 AC1 Real Property Action involving Commonwealth, Municipality, MBTA etc. (A)  
 AD1 Equity Action involving Commonwealth, Municipality, MBTA, etc. (A)  
 AE1 Administrative Action involving Commonwealth, Municipality, MBTA, etc. (A)

### CN Contract/Business Cases

A01 Services, Labor, and Materials (F)  
 A02 Goods Sold and Delivered (F)  
 A03 Commercial Paper (F)  
 A04 Employment Contract (F)  
 A05 Consumer Revolving Credit - M.R.C.P. 8.1 (F)  
 A06 Insurance Contract (F)  
 A08 Sale or Lease of Real Estate (F)  
 A12 Construction Dispute (A)  
 A14 Interpleader (F)  
 BA1 Governance, Conduct, Internal Affairs of Entities (A)  
 BA3 Liability of Shareholders, Directors, Officers, Partners, etc. (A)  
 BB1 Shareholder Derivative (A)  
 BB2 Securities Transactions (A)  
 BC1 Mergers, Consolidations, Sales of Assets, Issuance of Debt, Equity, etc. (A)  
 BD1 Intellectual Property (A)  
 BD2 Proprietary Information or Trade Secrets (A)  
 BG1 Financial Institutions/Funds (A)  
 BH1 Violation of Antitrust or Trade Regulation Laws (A)  
 A99 Other Contract/Business Action - Specify (F)

\* Choose this case type if ANY party is the Commonwealth, a municipality, the MBTA, or any other governmental entity UNLESS your case is a case type listed under Administrative Civil Actions (AA).

† Choose this case type if ANY party is an incarcerated party, UNLESS your case is a case type listed under Administrative Civil Actions (AA) or is a Prisoner Habeas Corpus case (E97).

### ER Equitable Remedies

D01 Specific Performance of a Contract (A)  
 D02 Reach and Apply (F)  
 D03 Injunction (F)  
 D04 Reform/ Cancel Instrument (F)  
 D05 Equitable Replevin (F)  
 D06 Contribution or Indemnification (F)  
 D07 Imposition of a Trust (A)  
 D08 Minority Shareholder's Suit (A)  
 D09 Interference in Contractual Relationship (F)  
 D10 Accounting (A)  
 D11 Enforcement of Restrictive Covenant (F)  
 D12 Dissolution of a Partnership (F)  
 D13 Declaratory Judgment, G.L. c. 231A (A)  
 D14 Dissolution of a Corporation (F)  
 D99 Other Equity Action (F)

### PA Civil Actions Involving Incarcerated Party †

PA1 Contract Action involving an Incarcerated Party (A)  
 PB1 Tortious Action involving an Incarcerated Party (A)  
 PC1 Real Property Action involving an Incarcerated Party (F)  
 PD1 Equity Action involving an Incarcerated Party (F)  
 PE1 Administrative Action involving an Incarcerated Party (F)

### TR Torts

B03 Motor Vehicle Negligence - Personal Injury/Property Damage (F)  
 B04 Other Negligence - Personal Injury/Property Damage (F)  
 B05 Products Liability (A)  
 B06 Malpractice - Medical (A)  
 B07 Malpractice - Other (A)  
 B08 Wrongful Death - Non-medical (A)  
 B15 Defamation (A)  
 B19 Asbestos (A)  
 B20 Personal Injury - Slip & Fall (F)  
 B21 Environmental (F)  
 B22 Employment Discrimination (F)  
 BE1 Fraud, Business Torts, etc. (A)  
 B99 Other Tortious Action (F)

### RP Summary Process (Real Property)

S01 Summary Process - Residential (X)  
 S02 Summary Process - Commercial/Non-residential (F)

### RP Real Property

C01 Land Taking (F)  
 C02 Zoning Appeal, G.L. c. 40A (F)  
 C03 Dispute Concerning Title (F)  
 C04 Foreclosure of a Mortgage (X)  
 C05 Condominium Lien & Charges (X)  
 C99 Other Real Property Action (F)

### MC Miscellaneous Civil Actions

E18 Foreign Discovery Proceeding (X)  
 E97 Prisoner Habeas Corpus (X)  
 E22 Lottery Assignment, G.L. c. 10, § 28 (X)

### AB Abuse/Harassment Prevention

E15 Abuse Prevention Petition, G.L. c. 209A (X)  
 E21 Protection from Harassment, G.L. c. 258E(X)

### AA Administrative Civil Actions

E02 Appeal from Administrative Agency, G.L. c. 30A (X)  
 E03 Certiorari Action, G.L. c. 249, § 4 (X)  
 E05 Confirmation of Arbitration Awards (X)  
 E06 Mass Antitrust Act, G.L. c. 93, § 9 (A)  
 E07 Mass Antitrust Act, G.L. c. 93, § 8 (X)  
 E08 Appointment of a Receiver (X)  
 E09 Construction Surety Bond, G.L. c. 149, §§ 29, 29A (A)  
 E10 Summary Process Appeal (X)  
 E11 Worker's Compensation (X)  
 E16 Auto Surcharge Appeal (X)  
 E17 Civil Rights Act, G.L. c. 12, § 11H (A)  
 E24 Appeal from District Court Commitment, G.L. c.123, § 9(b) (X)  
 E25 Pleural Registry (Asbestos cases) (X)  
 E94 Forfeiture, G.L. c. 265, § 56 (X)  
 E95 Forfeiture, G.L. c. 94C, § 47 (F)  
 E99 Other Administrative Action (X)  
 Z01 Medical Malpractice - Tribunal only, G.L. c. 231, § 60B (F)  
 Z02 Appeal Bond Denial (X)

### SO Sex Offender Review

E12 SDP Commitment, G.L. c. 123A, § 12 (X)  
 E14 SDP Petition, G.L. c. 123A, § 9(b) (X)

### RC Restricted Civil Actions

E19 Sex Offender Registry, G.L. c. 6, § 178M (X)  
 E27 Minor Seeking Consent, G.L. c.112, § 12S(X)

**TRANSFER YOUR SELECTION TO THE FACE SHEET**

### EXAMPLE:

CODE NO.	TYPE OF ACTION (specify)	TRACK	HAS A JURY CLAIM BEEN MADE?
B03	Motor Vehicle Negligence-Personal Injury	<u>F</u>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

## STATEMENT OF DAMAGES PURSUANT TO G.L. c. 212, § 3A

**DUTY OF THE PLAINTIFF** - The plaintiff shall set forth, on the face of the civil action cover sheet (or attach additional sheets as necessary), a statement specifying the facts on which the plaintiff relies to determine money damages. A copy of such civil action cover sheet, including the statement as to the damages, shall be served with the complaint. **A clerk-magistrate shall not accept for filing a complaint, except as otherwise provided by law, unless it is accompanied by such a statement signed by the attorney or self-represented litigant.**

**DUTY OF THE DEFENDANT** - If the defendant believes that the statement of damages filed by the plaintiff is inadequate, the defendant may file with his/her answer a statement specifying the potential damages which may result if the plaintiff prevails.

**A CIVIL COVER SHEET MUST BE FILED WITH EACH COMPLAINT.  
 FAILURE TO COMPLETE THIS COVER SHEET THOROUGHLY AND ACCURATELY  
 MAY RESULT IN DISMISSAL OF THIS ACTION.**



COMMONWEALTH OF MASSACHUSETTS

COURTNEY GILARDI,	)	SUPERIOR COURT
CHARLIE HERZIG, JUDY HERZIG	)	
MARK MARKHAM, ANGELIKA MARKHAM	)	
AND ELAINE IRELAND	)	CIVIL ACTION NO. _____
	)	
Plaintiffs	)	
	)	
v.	)	
	)	
LINDA TYER, MAYOR OF PITTSFIELD	)	
STEPHEN N. PAGNOTTA, CITY SOLICITOR	)	
	)	
PITTSFIELD CELLULAR TELEPHONE	)	
COMPANY D/B/A VERIZON WIRELESS	)	
FARLEY WHITE SOUTH STREET, LLC	)	
	)	
ROBERTA ORSI, BRAD GORDON	)	
STEPHEN SMITH, KIMBERLY LORING	)	
DR. JEFFREY LEPPPO as they	)	
are members of and are collectively the	)	
PITTSFIELD BOARD OF HEALTH	)	
)	)	
	)	
Defendants	)	

**COMPLAINT**

**INTRODUCTION**

1. This is an appeal in the nature of certiorari and an request for related declaratory relief pursuant to Massachusetts General Laws ("G.L.") c. 249, § 4 from a decision of the Pittsfield Board of Health rescinding a prior order requiring Pittsfield Cellular Telephone Company d/b/a Verizon Wireless and Farley White South Street, LLC to abate a nuisance

at a property located at 877 South Street in Pittsfield causing hazardous and injurious conditions to others.

### **JURISDICTION**

2. This court has jurisdiction pursuant to G.L. c. 249, § 4, G.L. c. 214, § 1; G.L. c. 231A, § 1.

### **PARTIES**

3. Plaintiff Courtney Gilardi maintains her domicile at 17 Alma St., Pittsfield, MA 01201. She brings this matter on her own behalf and on behalf of her two minor children.

4. Plaintiffs Charlie Herzig and Judy Herzig maintain their domicile at 140 Plumb St., Pittsfield MA 01201.

5. Plaintiffs Mark Markham and Angelika Markham maintain their domicile at 128 Elmer Ave., Pittsfield MA 01201.

6. Plaintiff Elaine Ireland maintains her domicile at 15 Alma St., Pittsfield, MA 01201.

7. Defendant Linda Tyer is the Mayor of Pittsfield. Her office is at 70 Allen Street, Pittsfield, Massachusetts 01201.

8. Defendant Stephen N. Pagnotta is the contract Solicitor for the City of Pittsfield. His city office address is at 70 Allen Street, Pittsfield, Massachusetts 01201. He is also the managing partner of the law firm Donovan O'Connor & Dodig, LLP ("the firm"), which maintains an office at 55 Church Street, Pittsfield Massachusetts 01201.

9. Defendant Pittsfield Cellular Telephone Co. d/b/a Verizon Wireless is a Massachusetts general partnership with an office at 20 Alexander Drive, Wallingford,

Connecticut 06492, and with a principal place of business at 180 Washington Valley Road, Bedminster, New Jersey 07921.

10. Defendant Farley White South Street LLC is a Domestic Limited Liability Company. Its state-registered resident agent for service of process is Roger W. Altreuter, 155 Federal Street, Suite 1800, Boston MA 02110.

11. Defendants, Roberta Orsi, Brad Gordon, Stephen Smith, Kimberly Loring and Dr. Jeffrey Leppo are the members of and are collectively the Pittsfield Board of Health ("Board") which has an address of 70 Allen Street, Pittsfield, Massachusetts 01201. The Board members are sued herein solely in their official capacity.

## **FACTS**

### **877 South Street wireless facility injures Shacktown residents**

12. Farley White South Street, LLC owns a property at 877 South Street in Pittsfield.

13. Pittsfield Cellular Telephone Company d/b/a Verizon Wireless obtained a lease for a portion of the 877 South Street property allowing placement of a wireless tower, base station and associated antennas.

14. Verizon Wireless sought and ultimately obtained a local land use permit for the wireless facility from the Pittsfield Community Development Board.

15. Verizon Wireless constructed the tower and base station. The facility was activated on August 4, 2020 and began transmitting for all purposes on August 21, 2020.

16. Soon after the 877 South Street wireless facility began operations, the city started to receive reports of illness and negative health symptoms from residents living near the facility, and in particular, from residents living in the so-called "Shacktown" neighborhood.

At least 17 individuals documented adverse health effects and others also reported adverse consequences. The negative health symptoms included complaints of headaches, sleep problems, heart palpitations, tinnitus (ringing in the ears), dizziness, nausea, skin rashes, and memory and cognitive problems, among other medical complaints. All these neurological and dermatological symptoms are consistent with those described in the peer-reviewed scientific and medical literature as being associated with exposure to Radio Frequency (“RF”) radiation, including RF from cell towers. These symptoms are sometimes referenced in the scientific and medical literature as Electromagnetic Sensitivity (“EMS”), also known as Electro-Hypersensitivity (“EHS”), Microwave Sickness, or Radiation Sickness. All these names describe a syndrome where the afflicted develop one or more recognized symptoms as a result of RF radiation (“RFR”). EHS is a spectrum condition. For some, the symptoms can become debilitating and severely affect their ability to function.

17. Plaintiff Courtney Gilardi and her two young daughters, Plaintiffs Charlie and Judy Herzig, Plaintiffs Mark and Angelika Markham and Plaintiff Elaine Ireland are among the at least 17 individuals that reported, and are still experiencing, serious adverse health effects as a result of the 877 South Street wireless facility’s operation.

18. Plaintiff Courtney Gilardi suffers the following symptoms when she is in her home at 17 Alma Street: debilitating headaches, nausea, vomiting, dizziness, insomnia, nighttime waking, palpitations, daytime fatigue and tiredness. When she leaves the immediate vicinity of the 877 South Street wireless facility these symptoms subside, only to return when she once again goes near the facility. Plaintiff Courtney Gilardi’s home

was rendered uninhabitable on account of the 877 South Street facility's operation; she has had to instead spend most of her time at 980 East St., Pittsfield-Lenox, MA 01240. She was constructively evicted. Plaintiff Courtney Gilardi desires to return to her home full-time at 17 Alma St., and still considers that property to be her domicile.

19. Plaintiff Courtney Gilardi's oldest daughter suffers the following symptoms when she is in her home at 17 Alma Street: headaches, dizziness, nausea, vomiting, insomnia, nighttime waking, daytime fatigue and tiredness. When she leaves the immediate vicinity of the 877 South Street wireless facility these symptoms subside, only to return when she once again goes near the facility. She has been forced to take up temporary residence in another home located at 980 East St., Pittsfield-Lenox, MA 01240.

20. Plaintiff Courtney Gilardi's youngest daughter suffers the following symptoms when she is in her home at 17 Alma Street: nausea, vomiting, stomach aches, loss of appetite, skin rashes, sensation that her skin is crawling, hyperactivity, insomnia, nighttime waking, daytime fatigue and tiredness, inability to focus and concentrate, night terrors/nightmares. When she leaves the immediate vicinity of the 877 South Street wireless facility these symptoms subside, only to return when he once again goes near the facility. She has been forced to take up temporary residence in another home located at 980 East St., Pittsfield-Lenox, MA 01240.

21. Plaintiff Charlie Herzig suffers the following symptoms when he is in his home at 140 Plumb Street: insomnia, increased tinnitus and daytime fatigue. When he leaves the immediate vicinity of the 877 South Street wireless facility these symptoms improve, only to return when he once again goes near the facility.



22. Plaintiff Judy Herzig suffers the following symptoms when she is in her home at 140 Plumb Street: tinnitus, headaches, memory loss, concentration issues, decrease in word recall, insomnia, sleep issues, daytime fatigue, and depression. She is housebound and unable to spend any time away from the immediate vicinity of the 877 South Street wireless facility.

23. Plaintiffs Charlie and Judy Herzig have so far not fled their home even though they are constantly sick there. They have nowhere else to go.

24. Plaintiff Mark Markham suffers the following symptoms when he is in his home at 128 Elmer Avenue: headaches, tinnitus, nausea, dizziness to the point it interferes with him feeling safe to operate a motor vehicle, difficulty with speech and word recall, insomnia. When he leaves the immediate vicinity of the 877 South Street wireless facility these symptoms subside, only to return when he once again goes near the facility.

25. Plaintiff Angelika Markham suffers the following symptoms when she is in her home at 128 Elmer Avenue: skin rashes, sensation that her skin is crawling, headaches, dizziness, nausea, tinnitus, heartburn and insomnia. When she leaves the immediate vicinity of the 877 South Street wireless facility these symptoms subside, only to return when she once again goes near the facility.

26. The home of Plaintiffs Mark and Angelika Markham was rendered uninhabitable on account of the 877 South Street wireless facility's operation. They were constructively evicted. The Markhams have been forced to use their retirement funds to support an itinerant lifestyle in order to avoid the toxic emissions from the 877 South Street wireless facility. They have stayed in hotel rooms, camp sites and their car, and have travelled

about to stay with family and friends. Plaintiffs Mark and Angelika Markham desire to return to their home full-time at 128 Elmer Ave., and still consider that property to be their domicile.

27. Plaintiff Elaine Ireland suffers the following symptoms when she is in her home at 15 Alma St.: tinnitus, migraines, insomnia. When she leaves the immediate vicinity of the 877 South Street wireless facility these symptoms subside, only to return again if she once again goes near the facility. Plaintiff Elaine Ireland's home was rendered uninhabitable on account of the 877 South Street facility's operation; she has had to abandon it and is now staying at 74 Broad St. in Pittsfield. She was constructively evicted. Plaintiff Elaine Ireland, however, desires to return to her home at 15 Alma St., and still considers that property to be her domicile.

#### **Board conducts proceeding and enters Emergency Order**

28. When it became evident there was a cluster of illnesses in Shacktown near the 877 South Street wireless facility, the Pittsfield City Council asked the Pittsfield Board of Health ("Health Board" or the "Board") to look into the issue and provide a report.

29. The Board exists pursuant to both state law and the Pittsfield City Code. City Code Ch. 2, Art. XVIII, Sec. 2-86 provides that "[a] Board of Health is hereby established to advise on and manage all matters relative to health and sanitation in the City, and to promulgate health regulations in conformity with law." G.L. c. 111, §§ 122-152 and the state Sanitary Code, including but not limited to Sanitary Code Chs. 11 and 410, also provide authority to and duties upon local health boards. G.L. c. 111 § 122 in particular authorizes health boards to "examine all nuisances which, in their opinion, may be

injurious to the public health.” (emphasis added) When the board finds there is a health injury the board “shall destroy, remove or prevent the same.” (emphasis added) Section 123 provides that upon a nuisance determination the board shall order the owner to remove the nuisance. In other words, state law commands that a local health board take affirmative administrative action once it finds a health injury. This is so even if the activity in issue has received local land use approval for that activity. The Board has a state-imposed duty to take administrative action once it finds a nuisance or health injury; they have no discretion.<sup>1</sup>

30. The Board, unlike other Pittsfield commissions and agencies, has independent powers and duties as a result of state law. Where its duties are defined by the legislature the Board is statutorily exempt from the Mayor’s direct supervision and direction notwithstanding the general rule in Pittsfield, MA Charter Art. 3, Section 3-2.

31. The Board spent more than 18 months gathering information and studying the most recent scientific and medical information on the topic, including more 1,000 peer-reviewed scientific and medical studies. The Board interviewed scientists and medical professionals. It took extensive evidence from all concerned.

32. The Board ultimately concluded that a group of individual Pittsfield residents in this cluster have been personally harmed by RF radiation transmitted from the Verizon Wireless 877 South Street wireless facility’s operations. It found that the involuntary

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<sup>1</sup> The Board does have discretion whether and if so when to seek judicial enforcement of its administrative action. Here, the Board clearly intended to issue the Emergency Order to provide an incentive for Verizon Wireless to meaningfully engage at the administrative level and collaborate with the affected parties to find a solution. The Board fully reserved the right to seek judicial enforcement but did not intend to immediately do so.

wireless radiation exposure directed upon Shacktown residents in their homes constructively evicted several residents and they had no choice but to leave because wireless radiation from the Verizon Wireless 877 South Street wireless facility rendered their homes uninhabitable – unfit for human habitation. The continued exposure causes them severe, debilitating pain. The wireless radiation endangers and materially impairs their health, safety and quality of life. Those who could escape did; the others were forced to continue suffering in their home.

33. On April 2, 2022, the Board issued an “Emergency Order Requiring That Pittsfield Cellular Telephone Company, d/b/a Verizon Wireless, And Farley White South Street, LLC, Show Cause Why The Pittsfield Board of Health Should Not Issue A Cease And Desist Order Abating A Nuisance At 877 South Street Arising From The Operation Of A Verizon Wireless Cell Tower Thereon And Constituting Immediate Order Of Discontinuance And Abatement If No Hearing Is Requested” (“Emergency Order”). A true and correct copy of the 24-page Emergency Order is attached hereto as Exhibit One.

34. The Emergency Order contained extensive findings of fact and exhaustively listed the medical and scientific information and other evidence the Board considered and relied upon for its conclusions. The Emergency Order listed each of the Plaintiffs herein by name as being among those in Shacktown for whom the relief was intended. The Board found that each of the Plaintiffs by name (along with others) were being made sick from emissions from the 877 South Street wireless facility and their homes were uninhabitable. In other words, the Emergency Order found direct injury and causation.

35. The Emergency Order: (i) declared that the operation of the wireless facility located at 877 South Street, Pittsfield, Massachusetts (the “Facility”) by Verizon Wireless is a public nuisance and violates various the Massachusetts state and local health sanitary codes and laws; (ii) required that Verizon Wireless show cause why the Board should not issue an order requiring that the Facility cease operations; (iii) required that Verizon Wireless request a hearing on the Order within seven days of its issuance (i.e., by April 18, 2022); and (iv) if Verizon Wireless failed to request a hearing, declared that the order would become a notice of discontinuance requiring that Verizon Wireless abate and eliminate the nuisance and violations of the state sanitary code within seven days of the expiration of the period to request a hearing (i.e., by April 25, 2022).

36. Verizon Wireless did not request a hearing within the required seven-day period, and therefore the Emergency Order became a notice of discontinuance “requiring that Verizon Wireless abate and eliminate the nuisance and violations of the state sanitary code.” On May 10, 2022, however, Verizon Wireless filed a judicial action challenging the Board’s authority to act. The Verizon Wireless complaint did not contest any of the factual findings or legal conclusions, other than those claiming state law authority to take the action. The action raised a single cause of action – that the Board’s state law authority was preempted and they had no power to act. The action was not an administrative appeal pursuant to state law.

### **Mayor and Solicitor interference, coercion and frustration of Board**

37. Under the Pittsfield City Charter “[t]he mayor shall cause the charter, laws, ordinances and other orders of the city government to be enforced and shall cause a

record of all official acts of the executive branch of the city government to be kept. The mayor shall exercise general supervision and direction over all city agencies, unless otherwise provided by law or by this charter.” (emphasis added) Pittsfield, MA Charter Art. 3, Section 3-2.

38. This Charter provision expressly contemplates that once a city agency like the Health Board here issues an order the Mayor will assiduously act to enforce it. The provision further just as clearly envisions that the Mayor will not directly or through underlings use coercion, subterfuge, provision of incorrect and misleading information or other underhanded tactics designed to prevent the agency from performing its independent statutory duties under state law and then to negate an agency’s order after it is issued. The Mayor has taken action and has failed to act in numerous ways that violate this Charter provision.

39. The Mayor was elected on a pro-growth, business development platform. Once she took office she began to carry out that platform. The Mayor believes that downtown revitalization, bringing in new industry and making the city attractive to weekend visitors and removing “barriers” and “silos” to growth by cooperating with “businesses prospects”<sup>2</sup> is more important than the health and well-being of her residents. If a few of them fall ill or are constructively evicted because of toxins emanating from revitalization-related land use permitted activity then they are just collateral damage and part of the cost of doing business.

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<sup>2</sup> “Mayor Linda Tyer Embarks On First Term In Pittsfield,” Feb. 9, 2016, <https://businesswest.com/blog/mayor-linda-tyer-embarks-on-first-term-in-pittsfield/>; Press Release, “City of Pittsfield Announces New Economic Development Strategy,” May 4, 2017, available at [https://www.cityofpittsfield.org/press\\_detail\\_T32\\_R48.php](https://www.cityofpittsfield.org/press_detail_T32_R48.php);



40. Part of the Mayor's revitalization and business development involves increased deployment of wireless broadband to the entire city in general and the downtown area in particular. She has taken direct and indirect action to facilitate approval of wireless carriers' applications for land use permits. The Community Development Board (appointed by the Mayor) has adopted her ubiquitous deployment approach completely without regard to potentially injurious health consequences, as articulated by Community Development Board members Libby Harland<sup>3</sup> and Floriana Fitzgerald.<sup>4</sup>

41. The Mayor led an effort to deploy a downtown public Wi-Fi network. The city received a \$99,750 grant from the state Community Compact Information Technology grant program in late 2021 for the public Wi-Fi network, which will provide connectivity to the city center and surrounding neighborhoods. The grant builds on a 2019 \$95,000 grant for wireless infrastructure for internal and public use. The city must deploy the Wi-Fi network by February 15, 2023 or else the money reverts to the state.

42. An illness cluster within the city that is caused by wireless networks, like that caused by the 877 South Street wireless facility, is inconvenient to the Mayor's "revitalization" efforts insofar as they involve expanded wireless broadband. People will not want infrastructure that might make them sick or drive them from their homes. The Board's express recognition of the Plaintiffs' injuries and the direct finding of causation by

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<sup>3</sup> <https://watch.pittsfieldtv.net/CablecastPublicSite/show/37825?channel=9>, at 2:39:00 (December 1, 2020 Community Development Board meeting stating that having great cell phone coverage and wireless coverage is a really important component of increasing Pittsfield population and making the city more economically attractive).

<sup>4</sup> <https://watch.pittsfieldtv.net/CablecastPublicSite/show/37572?channel=9> at 2:28:52 (November 5, 2020 Community Development Board meeting stating need cell towers "because we are trying to promote working from home. We want people to come from other areas to live in Pittsfield and say, oh, we can work from home and without the cell towers a lot of people can't work from home.")

the 877 South Street wireless facility is an obstacle and potential embarrassment to the Mayor's revitalization and wireless broadband ubiquity efforts and the business and personal interests of powerful local and national interests. As a result, the Mayor has directed her subordinates to frustrate any effort to recognize and meaningfully redress the Plaintiffs' and the other injured residents' injuries and harms.

43. The Mayor's "revitalization" efforts in general have led to relationships and actions that come close to, if not transgress, her statutory ethical duties and responsibilities. For example, the Mayor has steered contracts to, and placed at least one of her subordinates on, the board of a non-profit (Pittsfield Economic Revitalization Corporation, or PERC) that has received significant funds from the city.<sup>5</sup> The Mayor's husband has been Treasurer for PERC since 2003 and also served as director until early 2021. As Treasurer he is responsible for custody and distribution of PERC funds, including those that come from the city of Pittsfield.

44. Another of the Mayor's underlings is Deanna Ruffer. Ruffer is under the Mayor's direct control, and this has been evident through Ruffer's actions with regard to the 877 South Street wireless facility and in many other ways.

45. Deanna Ruffer is also on the PERC board and has been since 2017 – soon after Mayor Tyer was elected to her first term. PERC and the Pittsfield Community Development Department share expenses, office space and even the same phone

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<sup>5</sup> Pittsfield Economic Revitalization Corporation also receives funds from the similarly-named Pittsfield Economic Revitalization Authority (PERA), a *quasi*-public entity established by state law in 1998 to oversee assets obtained in a pollution settlement with General Electric. The Mayor appoints the Authority's governing board members. PERA also shares office space, a phone number and staffing expenses with the Department of Economic Development.

number. The Pittsfield 2022 Budget contains a line item for a “Business Development Manager.” For the 2022 fiscal year this position is funded with \$32,778 for salary expense. The cost is “shared per an Agreement with Pittsfield Economic Development Authority and Pittsfield Economic Revitalization Corporation.” City and PERC finances are extensively intertwined and there is interlocking control, all of which ultimately leads back to the Mayor, her underlings and her husband.

46. Until recently (December, 2021) Deanna Ruffer was the head of the city’s Department of Community Development, which among other things performs zoning or land use functions for the city. The Community Development Department is the body that issued the land use permit for the 877 South Street wireless facility. There is litigation concerning the issuance of that permit, where certain “abutters”<sup>6</sup> are claiming lack of notice. As a result of this litigation city personnel have been instructed by city Solicitor Pagnotta to not have any contact with the Plaintiffs in this matter, even though there is only partial overlap (the Markhams) between the two groups.

47. Ruffer was head of the city’s Community Development Department for several years, overseeing city planning and zoning, conservation, parks and programs like the Community Development Block Grant, which directs grant money toward housing, infrastructure, revitalization, and economic development toward low- and moderate-income communities. The city’s 2022 budget, like its predecessors for years past, states that the Community Development Department is “responsible for the administration of the City’s annual Community Development Block Grant (CDBG) funding. The staff provides

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<sup>6</sup> Plaintiffs Mark and Angelika Markham are among the group of abutter plaintiffs in that matter.

support to ... Pittsfield Economic Revitalization Corporation ...” The 2022 budget goes on to state that “The City offers a diverse portfolio of assistance to existing and new businesses focused on the retention and creation of jobs and capital investments in buildings and equipment. These programs are funded through the CDBG program, the Pittsfield Economic Development Fund, and state grant programs. Much of the assistance to businesses is offered through the Pittsfield Economic Revitalization Corporation (‘PERC’), a community development corporation. PERC serves as the City’s economic development lender utilizing both state and federal grant funding.”

48. PERC’s other current members include three individuals associated with banking and other finance-related interests, real estate company and legal matters. The Treasurer and past board member is a partner in a major accounting/CPA firm. The business attorney on the PERC Board of Directors is a partner in a local law firm and leads their Real Estate Division of the firm’s Business and Banking Group. Each of their businesses directly benefit from the money flow. The funds go into or through a bank. The recipient needs an accountant and often must purchase or rent real property. They require other investment advice and assistance.

49. Ruffer is a long-time “advisor” to the Mayor, particularly with regard to the city’s American Rescue Plan Act (“ARPA”) grant applications and distribution of those funds. The Mayor recently (February 2022) named Ruffer as co-director of the city’s administration of funds for federal ARPA funds. The ARPA project team is part of the Mayor’s office. There was no public posting of the paid “part-time” position through the city’s hiring programs. In June, 2022 PERC was the recipient of \$350,000 in ARPA money

that flowed through the city. Ruffer was a prime decisionmaker on whether to make the award to PERC but is also a director of the organization (PERC) that received the grant. She was on both sides of the arrangement. This is not an outlier. Ruffer has repeatedly acted with both “hats” (oversight of city awards and a director of the recipient of those awards) throughout the Mayor’s tenure. Although the dual relationship is not kept in secret,<sup>7</sup> the extent of her involvement on both sides is often obscured, especially with regard to reports to the City Council.<sup>8</sup>

50. Mayor Tyer (directly or through her subordinate Ruffer) has directly and indirectly overseen and approved distribution of funds to an organization (PERC) for which her husband was a long-time director and is still the Treasurer and therefore responsible for custody and distribution of the funds provided by the city of Pittsfield. These relationships and the self-dealing they facilitate are expressly prohibited by law and they present a clear appearance of impropriety.

51. PERC gets a lot of money from the city and as a result of its relationship with the city. Ruffer, Clairmont (the Mayor’s husband and a PERC officer) and the Mayor have a big hand in its ultimate distribution. That kind of power gives rise to potential abuse and cronyism. The state nepotism law and the Standards of Conduct for government officials

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[https://cms2files.revize.com/pittsfieldma/city\\_hall/community\\_development/community\\_development\\_and\\_housing/docs/New%20node/Draft%20FY2022%20Annual%20Plan%20for%20Website.pdf](https://cms2files.revize.com/pittsfieldma/city_hall/community_development/community_development_and_housing/docs/New%20node/Draft%20FY2022%20Annual%20Plan%20for%20Website.pdf), Annual Action Plan for fiscal year 2022, p. 23.

<sup>8</sup> [https://cms2files.revize.com/pittsfieldma/government/city\\_council/docs/April%2026,%202022.pdf](https://cms2files.revize.com/pittsfieldma/government/city_council/docs/April%2026,%202022.pdf), April 26, 2022, Community Development Director’s “Rule 38” analysis, pdf. pp. 248-251 (SolaBlock economic development funds award for Tax Increment Financing, referring only to “PERC Board” or “PERC members”); [https://cms2files.revize.com/pittsfieldma/government/city\\_council/docs/5-12-20%20cc%20packet.pdf](https://cms2files.revize.com/pittsfieldma/government/city_council/docs/5-12-20%20cc%20packet.pdf), May 12, 2020 “Rule 38” analysis, pdf pp. 13-23, 248- 309 (Montra II award economic development funds award for Tax Increment Financing, referring only to “PERC Board” or “PERC members”).

exist to prevent such abuses but those safeguards failed here. The Mayor has engaged in nepotism, cronyism to benefit those who obtain significant funds from revitalization, and has personal financial conflicts.

52. The Mayor principally worked through her subordinates and agents with regard to the Board matter concerning the 877 South Street wireless facility. For example, she dispatched Deanna Ruffer to respond to inquiries from the Board chairperson in March of 2022. The Mayor refused or unreasonably delayed requests for meetings, including several from the Board chair, both before and after the Board issued its Emergency Order.<sup>9</sup> Instead, she deployed Deanna Ruffer and Solicitor Pagnotta<sup>10</sup> as agents whose job was to frustrate the Board's effective exercise of its local and state powers and its duty to remove nuisances and health threats that it identifies.<sup>11</sup>

53. The Mayor's efforts to prevent the Board from carrying out its statutory duties justify the perception of an appearance of impropriety. A reasonable person having knowledge of these relevant circumstances could reasonably conclude that Mayor Tyer is being improperly influenced by self-interest, wireless and other financial interests are enjoying her favor in the performance of her official duties, and she has acted and failed to act as a result of kinship, rank, position or undue influence of any party or person.

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<sup>9</sup> See April 8 Board meeting at <https://watch.pittsfieldtv.net/CablecastPublicSite/show/44409?channel=1>, at 1:59.

<sup>10</sup> <https://pittsfield.com/story/67615/Pittsfield-Board-of-Health-Continues-Push-to-Remove-Verizon-Cell-Tower.html>.

<sup>11</sup> See March 16, 2020 Board meeting, <https://watch.pittsfieldtv.net/CablecastPublicSite/show/44241?channel=9>, at 1:59.



## City Solicitor

54. City Code Art. III Sec. 2-9 provides that the City Solicitor is appointed by and serves at the pleasure of the Mayor. Under Sec. 2-9.1 the City Solicitor acts as the legal adviser and solicitor of the City and each of its departments, unless he suffers an ethical conflict or must abstain due to other legal requirements, such as, *inter alia*, a command resulting from the Standards of Conduct for government officials set out in G.L. c. 268A, § 23. Subsection (b)(3) prohibits government officials from acting “in a manner which would cause a reasonable person, having knowledge of the relevant circumstances, to conclude that any person can improperly influence or unduly enjoy his favor in the performance of his official duties, or that he is likely to act or fail to act as a result of kinship, rank, position or undue influence of any party or person.”

55. Defendant Pagnotta had several conflicts of interest that required him to withdraw from representation or provision of legal advice in the Board’s consideration and actions regarding the 877 South Street wireless facility. Pagnotta also continued to provide “legal advice” to the Board, City Council and Mayor on this matter even after he admitted he was not competent to offer advice with regard to the telecommunications law related issues.

56. Defendant Pagnotta has legal multiple conflicts of interest that should have resulted in self-disqualification from any participation in the matter before the Board.

- a. Defendant Pagnotta was carrying out the commands of the Mayor (who selects and can fire him at any time) rather than providing competent, objective, independent and good-faith advice to the Board while it exercised

its state law related duties. Since the Mayor was opposed to any action by the Board, Pagnotta should have and was ethically required to withdraw from representation of the Board of Health once it became clear the Board knew there was a health problem and wanted to act despite the Mayor's objective of blanketing the city with radiation that has already sickened almost 20 residents and may well be adversely impacting others.

- b. Defendant Pagnotta and the firm are presently representing the city of Pittsfield in litigation. The firm is defending a challenge to the zoning permit for the wireless facility<sup>12</sup> on behalf of the Community Development Board and is aligned with Verizon Wireless. The firm has therefore worked closely with Verizon Wireless as part of that litigation. Pagnotta instructed city elected and appointed personnel, including the Mayor, to not have any contact with the Plaintiffs in this matter because of the ongoing but separate abutter litigation. The firm and Pagnotta are also coordinating with Verizon on the handling of the Board matter.
- c. One of the false narratives Defendant Pagnotta has urged to the Board – by way of illicit advocacy rather than legal advice – is that the Board's action essentially constitutes a collateral attack on or would otherwise invalidate the zoning permit.<sup>13</sup> That is incorrect. The Board's Emergency Order expressly assumes that the zoning permit is valid, and notes that a condition

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<sup>12</sup> *Markham v. Pittsfield Cellular Tel. Co.*, 101 Mass. App. Ct. 82, 188 N.E.3d 984 (2022), FAR pending, Docket 2021-P-0336.

<sup>13</sup> *See, e.g.*, <https://www.wamc.org/new-england-news/2021-03-25/pittsfield-city-council-grapples-with-ongoing-cell-tower-health-concerns>.

in the permit requires that Verizon Wireless comply with all applicable health and safety laws, including the Sanitary Code – laws the Board, not the land use authority – is charged with enforcing. Assuming *arguendo* (without admitting) that the Board’s duties conflict with the Community Development Department action then Pagnotta and the firm have a direct conflict of interest because that means the Board and the Community Development Department have adverse and conflicting interests. One city agency feels it must support the facility and is defending its action doing so, while the other believes the facility is causing significant harm that must be stopped.<sup>14</sup>

- d. Pagnotta’s advice to the two city departments and City Council either purposefully or negligently omitted any mention that Massachusetts health and safety law precedent provides that an activity or use with a zoning permit (as is the case here) may still be declared a nuisance and the health board can require that it be abated. Stated another way, the issuance of a state or local permit or license does not immunize the holder from liability for nuisance which results from the permitted or licensed activity. Pagnotta had a duty to so advise the Board, Community Development Department and Mayor and City Council, but he did not.
- e. Pagnotta is also charged with any conflicts of interest that arise because of his position as managing partner at the law firm of Donovan, O’Connor and

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<sup>14</sup> See April 8 Board meeting at <https://watch.pittsfieldtv.net/CablecastPublicSite/show/44409?channel=1>, at 2:01. Interestingly, this video appears to have been edited. There is a gap and visible jump at 1:58:54. The Board was discussing its problems getting independent legal representation.

Dodig. The firm represents several entities that would be either directly or indirectly harmed if the Board's decision is enforced. The precedent would threaten the business interests of any company that provides wireless service, supports wireless service or relies on mobile wireless broadband internet access.

- A. The firm served as litigating counsel for North Adams Tower Company, New England Wireless PCS LLC, Verizon Wireless (VAW) LLC and MBIA Property and Casualty Group in a recent case in Massachusetts Superior Court.<sup>15</sup>
- B. The firm represents several "app" companies that rely on a robust and ubiquitous wireless infrastructure to support their business plan. Attorney Stephen F. Narey of the firm is listed Trademark counsel for:
  - 1. Identify Technologies, LLC. This company holds several (at least 5) trademarks for different "mobile phone" "computer applications" used for "facilitating interactions between users with similar interests."<sup>16</sup>
  - 2. Three Tribes Marketing, LLC. This company holds a trademark for "Roadready," a mobile phone application that

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<sup>15</sup> *North Adams Tower Company Inc et al vs. Pittsfield Cellular Telephone Company Doing Business as Verizon Wireless et al*, Civil Action No. 16-0031, MA Superior Court, Berkshire. The case ultimately settled, with final dismissal on November 27, 2020. See [https://www.masscourts.org/eservices/search.page.3?x=6ZRDZPKGY1qYFJY\\*BGIkBGHQbp-oGGyufBxTNzShNmzOzJuCsaQIRIFmnMy0kVmXKNp\\*BjMogHHLjeHD53AhQ](https://www.masscourts.org/eservices/search.page.3?x=6ZRDZPKGY1qYFJY*BGIkBGHQbp-oGGyufBxTNzShNmzOzJuCsaQIRIFmnMy0kVmXKNp*BjMogHHLjeHD53AhQ).

<sup>16</sup> See <https://trademarks.justia.com/owners/identify-technologies-llc-3240504/>.

“tracks the time teens and parents spend behind the wheel together during the state required supervised driving time prior to the teen receiving their license.”<sup>17</sup>

57. After the Board issued the Emergency Order Defendant Pagnotta, in concert with the Mayor and Deanna Ruffer conspired to deprive the Board of defense counsel. He effectively frustrated the Board chairperson in her quest for outside counsel, by, among other things, failing to provide recommendations for potential outside counsel.<sup>18</sup> He continued to provide inaccurate and inappropriate advice to the City Council by mischaracterizing the nature of the suit Verizon Wireless had brought, the relief available under the cause of action it pleaded, the process that would apply, the type of judicial review that would apply and the likely costs the city would incur in any defense. He provided this “legal advice” to the City Council even though he had already admitted he was lacked legal competence in the matter, and even though he, the council and even the Board knew he had an actual ethical conflict. He was required to entirely withdraw, but instead became more active.

58. In particular, Pagnotta spread misinformation about the claims Verizon had brought in its suit, and the implications of that suit. Pagnotta fearmongered by telling the City Council and Board that the city would be liable for attorneys’ fees and potentially damages as a result of the Verizon suit. That is flatly incorrect. Verizon raised only one cause of action, a pure issue of law on whether the Health Board’s longstanding state law

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<sup>17</sup> <https://trademarks.justia.com/860/07/roadready-86007160.html>.

<sup>18</sup> See March 16, 2020 Board meeting, <https://watch.pittsfieldtv.net/CablecastPublicSite/show/44241?channel=9>, at 17:17:31.

authority was preempted under other law. The precedent is clear that this sole cause of action does not give rise to fee shifting or damages.

59. Pagnotta also threatened that the Verizon lawsuit would involve expensive discovery and require extrinsic evidence beyond the administrative record compiled by the Board. This too is flatly wrong: the precedent on the cause of action Verizon raised is also clear that the legal issues are resolved only on the basis of the administrative record, no new evidence is allowed or required and there is no discovery. Verizon's complaint did not request fee shifting, damages, discovery or anything beyond a legal ruling by the court that the Health Board lacked legal authority to issue the Emergency Order.

60. Pagnotta purposefully and negligently misrepresented the facts and issues and the interrelatedness *vel non* between the abutter case and the Board matter in order to advance the Mayor's policy and his other client (the Community Development Department). To do that he improperly used his role as general counsel for the city to undercut and frustrate the Board's independent authority and duty to mitigate and/or remove the adverse health consequences and injuries the Board had found were flowing from the 877 South Street wireless facility' operation. He convinced the City Council that it should not approve outside counsel or incur any cost for a legal defense of the Emergency Order based on the false notion it would involve vast sums toward the defense of a lost cause that would take years to resolve and end with the city having to pay Verizon Wireless' attorneys' fees and potentially immense damages. He convinced the city Counsel that litigation was not a viable option. He did so not because that was true or even possible; rather it was because the Board's efforts to eliminate the nuisance and



health injuries conflicted with the Mayor's personal quest for wireless ubiquity in the name of economic growth and because he wrongly contended that the Board action conflicted with the Community Development Department's decision to issue the land use permit when in fact the Board was merely enforcing an express condition in that permit, as part of its authority under the state's health and safety laws.

61. Pagnotta and the firm have both actual and potential conflicts of interest and Pagnotta's continued participation – despite these conflicts and even after he declared his own incompetence in the subject matter – has irrevocably tainted the process.

62. Given the foregoing facts Pagnotta's efforts to prevent the Board from carrying out its statutory duties justify the perception of an appearance of impropriety. A reasonable person having knowledge of these relevant circumstances could reasonably conclude that Pagnotta is being improperly influenced or wireless-related interests are enjoying his favor in the performance of his official duties, and he has acted and failed to act as a result of kinship, rank, position or undue influence of any party or person.

### **Board capitulates to improper and illegal Mayor and Solicitor pressure**

63. The Board anticipated that outside counsel with competence and experience in telecommunications matters would be necessary if Verizon Wireless filed a judicial challenge to the Emergency Order. They were aware that Pagnotta lacked competence, had conflicts and should not be involved.<sup>19</sup> The minutes from the April 2, 2022 meeting where the Board unanimously adopted Emergency Order state:

Discussion on Cease-and-Desist Order of Cell Tower Health Concerns – 877 South St.: Since an executive session was noted on the meeting agenda, a

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<sup>19</sup> For example, during a February 2, 2022 meeting Board meeting member Gordon recognized that Pagnotta was "not in a position to serve in" the role of the board's attorney.

unanimous motion was made by Chairperson Orsi to discuss this topic in the public session only and seconded by Brad Gordon. Chairperson Orsi noted that legal counsel has been sought out and that she has explored ways to finance the enforcement of the order. Mr. Gordon noted that without having the proper legal counsel and revenue to support this, the Board would be doing a tremendous disservice to these citizens. Chairperson Orsi stated that the Board is mandated to protect the people and that she believes the order should be issued with the hopes that Verizon will respond in some way. Board Member Loring noted that Verizon could respond with court action which could shut down this entire effort. Board Member Gordon reiterated that citizens could bring their own action, but it is cost prohibitive. Board Member Gordon moved to make a modification of the previous motion to issue the Cease & Desist, to issue the Order forthwith with the condition that it may be withdrawn, without prejudice, if legal counsel is not retained prior to any judicial or administrative hearing. The motion was seconded by Board Member Smith and voted on unanimously.<sup>20</sup>

64. Before the Board issued the Emergency Order Solicitor Pagnotta advised the Board he lacked the necessary telecommunications law competence and had an ethical conflict, so they would need outside counsel. What the Board did not anticipate was that Pagnotta would then take affirmative action to deprive the Board of the outside counsel he had told them they needed to hire.

65. The Board requested Pagnotta's assistance in the search for outside counsel. He provided none. He did explain the necessities for a contract with any outside counsel and that the City Council had to approve that contract.<sup>21</sup> The Board managed to find potential counsel on its own and secured a proposal from that firm. The Board provided

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<sup>20</sup> Available at [https://cms2files.revize.com/pittsfieldma/document\\_center/Boards\\_Commissions\\_Agendas\\_Minutes/Board\\_of\\_Health/2022/April%206.pdf](https://cms2files.revize.com/pittsfieldma/document_center/Boards_Commissions_Agendas_Minutes/Board_of_Health/2022/April%206.pdf).

<sup>21</sup> <https://pittsfield.com/story/67615/Pittsfield-Board-of-Health-Continues-Push-to-Remove-Verizon-Cell-Tower.html>.

a report to the City Council that was included in the April 26, 2022 Council agenda package.<sup>22</sup> The Board report stated, in part:

as a formal response to the original petition, the Board of Health reports that there is harm being done to the residents in the vicinity of the 877 South Street Cell Tower, that the Board has taken action to protect those residents, and that the Board anticipates it may require legal assistance to defend that action. Specifically, the Board of Health requests the petitioner (City Council) to allocate funds in the event that there is litigation by Verizon, and also place the City's liability insurer on notice of a possible claim. The Board of Health has done preliminary work in seeking expert legal representation. The Board of Health has identified two attorneys who have extensive experience in environmental law, and who are prepared to enter into a contract to represent the Board of Health with the approval of the City Council.

Enclosed please find proposals for representation by the two attorneys, a tentative budget for representation by the two attorneys (working together), a draft contract, and a copy of the cease-and-desist order issued by the Board on April 11, 2022.

66. The City Council did not take up the matter on April 26, 2022 because it involved potential litigation and hiring outside counsel and therefore required an Executive Session. The matter was tabled and then placed on the May 10, 2022 agenda. Verizon Wireless filed its lawsuit the late afternoon on May 10. During the Executive Session on the item Defendant Pagnotta (who should not have been there because of his declared

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<sup>22</sup> [https://cms2files.revize.com/pittsfieldma/government/city\\_council/docs/April%2026,%202022.pdf](https://cms2files.revize.com/pittsfieldma/government/city_council/docs/April%2026,%202022.pdf), pdf pp. 53-99.

incompetence and his multiple conflicts) informed the Council of the lawsuit. Pagnotta also (wrongly) advised the Council that the two prospective attorney firms could not appear before the Council as part of the Executive Session so the Council was deprived of any opportunity to interview them or receive their independent assessment of the Verizon Wireless lawsuit.

67. Pagnotta's scaremongering so alarmed the City Council that it never took action on the request for approval of outside counsel. Although no vote was ever taken it essentially told the Board to try and find a solution that did not involve or require litigation. The problem is that Verizon Wireless will not engage, collaborate or cooperate in any effort to find a solution. The Board's only option was to try and force Verizon Wireless to the negotiating table and the only way to do that was to overcome Verizon Wireless' legal contention the Board had no lawful or legitimate role. Only then would Verizon Wireless have any incentive to negotiate.

68. The Mayor and Solicitor had successfully carried off their scheme to frustrate the Board's exercise of its authority and duties by ensuring the Board would not be provided with legal counsel who could mount a defense in the Verizon Wireless lawsuit. This effectively made it impossible for the Board to defend or enforce the Emergency Order or even wheedle Verizon Wireless to the negotiating table. Pagnotta and the Mayor had successfully instilled fear, uncertainty and doubt in the City Council and public about the Board's authority and its prospects of success. The Board was helpless and defenseless.

69. The Board held its next meeting on June 1, 2022. It conducted an Executive Session. Pagnotta once again wrongly attended and likely once again provided legal

opinions and advise. The Board then voted to rescind the Emergency Order without prejudice.<sup>23, 24</sup> For all intents and purposes, it was involuntary and compelled by the Mayor's and Solicitor's FUD campaign and scheming that resulted in the Board not having litigation counsel, no means to force Verizon Wireless to collaborate in solutions and no meaningful path forward.

70. Although the Board rescinded the Emergency Order it and all the voting members did not repudiate or reverse any of the factual findings of fact or conclusions of law, including the findings of injury and causation. To the contrary, each member that participated in the vote reaffirmed his or her belief in the findings and conclusions. The Board was forced to rescind the order because it had been deprived any means to defend or enforce that order. The Board was also under significant misapprehension regarding the prospects of success in any litigation because Defendant Pagnotta gave them incorrect, one-sided and ultimately incompetent advice based on ignorance or because of the interests giving rise to his conflict, and because he was acting as an agent for the Mayor and Community Development Department and other conflicting interests in his firm rather than giving impartial and objective representation and advice to the Board.

71. The Board's decision to rescind the Emergency Order was coerced, involuntary and the result of improper outside interference by the Mayor, her subordinates and even the lawyer who had a legal duty to give them non-conflicted unbiased, good-faith

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<sup>23</sup> As of the date of this Complaint, there is no written order reflecting the rescission, nor has the Board approved its minutes for the June 1, 2022 meeting.

<sup>24</sup> Verizon Wireless almost immediately filed for voluntary dismissal of its suit challenging the Emergency Order.

professional advice and ensure they had a means to defend their actions but purposefully and intentionally did not.

72. The Board is named as a defendant herein because it is their coerced action rescinding the Emergency Order that has harmed the Plaintiffs by continuing the nuisance, adverse health consequences and the ongoing constructive eviction of some of the Plaintiffs. Plaintiffs emphasize, however, that in many respects the Board is as much a victim as the Plaintiffs. The Board and its members made every effort to perform their duties; they spent an extraordinary amount of time and effort collecting evidence and studying the extant science and medical information. They reached the right conclusions. The Board tried to get Verizon Wireless to engage in a collaborative effort to resolve the problem and entered the Emergency Order only because Verizon Wireless refused all entreaties to do so and stood its ground solely on the proposition that the Board of Health lacked the authority to protect Pittsfield residents even though Verizon Wireless' operation of the 877 South Street wireless facility was directly causing significant physical and financial harm. The Board's hands were effectively tied, not by the law but from external scheming and political efforts to prevent them from finding an effect solution to the harms it found.

73. The Court should vacate the rescission order and return the matter back to the Board so it can decide whether to reinstate the Emergency Order or take other administrative action consistent with state law to remove the nuisance and eliminate the health injuries visited on the Shacktown residents by 877 South Street wireless facility.



## **COUNT ONE – APPEAL OF DECISION**

74. Plaintiffs repeat the allegations of paragraphs 1 through 73.
75. The administrative record does not support the rescission of the Emergency Order.
76. The Board's rescission of the Emergency Order violated state law, which requires that health boards act to take administrative action to eliminate any nuisances or health risks found to exist in the community.
77. The Board's decision was rendered under duress and as a result of improper interference and meddling by the Mayor and City Solicitor and others, in violation of Pittsfield, MA Charter Art. 3, Section 3-2.
78. The decision to rescind the Emergency Order was made upon unlawful procedure and is infected with improper interference and conflicts of interest by the Mayor and City Solicitor.
79. WHEREFORE, Plaintiffs request that this court enter judgment as follows:
- a. That the decision to rescind the Emergency Order was:
    - A. in violation of constitutional provisions,
    - B. in violation of or contrary to state law,
    - C. in violation of or contrary to the Pittsfield Charter and Code,
    - D. in excess or in the alternative in derogation of the Board's authority or jurisdiction,
    - E. based upon error of law,
    - F. made upon unlawful procedure,

G. tainted and rendered unlawful by the illicit actions of the Mayor, City Solicitor and/or others under the Mayor's influence and control,

H. is not supported by substantial evidence.

b. Issue an Order vacating the rescission of the Emergency Order and remanding the matter to the Board for further consideration and action.

c. Provide an award of costs and attorney's fees for bringing this action; and

d. Provide such other relief as this court deems meet and just under the circumstances.

## **COUNT TWO – MAYOR REFUSAL TO ENFORCE BOARD ORDER**

80. Plaintiffs repeat the allegations of paragraphs 1 through 79.

81. The Mayor violated her duty under Pittsfield, MA Charter Art. 3, Section 3-2 to "cause the ... orders of the city government to be enforced."

82. The Mayor's actions in relation to the 877 South Street wireless facility, either directly or indirectly through subordinates, have violated the Standards of Ethics applicable to municipal city elected officials and the state "nepotism law," G.L. c. 268A, §§ 19 and 23.

83. The Board's exercise of its legislatively assigned duties and required actions pursuant to G.L. c. 111, §§ 122-152 and the state Sanitary Code, including but not limited to Sanitary Code Chs. 11 and 410, are exempt from the Mayor's direction and control.

The Mayor illegally usurped the Board's independent powers, and impeded, interfered with and frustrated their exercise through direct intimidation and coercion and by wrongly using the Solicitor and Deanna Ruffer as her personal and political agents to carry out this campaign.

84. The decision to rescind the Emergency Order was made upon unlawful procedure.

85. WHEREFORE, Plaintiffs request that this court enter judgment as follows:

a. That the decision to rescind the Emergency Order was:

- A. in violation of constitutional provisions,
- B. in violation of or contrary to state law,
- C. in violation of or contrary to the Pittsfield Charter and Code,
- D. in excess, or in the alternative in derogation of the Board's authority or jurisdiction,
- E. based upon error of law,
- F. made upon unlawful procedure,
- G. tainted and rendered unlawful by the illicit actions of the Mayor, City Solicitor and/or others under the Mayor's influence and control,
- H. is not supported by substantial evidence.

b. Issue an Order vacating the rescission of the Emergency Order and remanding the matter to the Board for further consideration and action.

- c. Provide an award of costs and attorney's fees for bringing this action;  
and
- d. Provide such other relief as this court deems meet and just under the  
circumstances.

**COUNT THREE – CITY SOLICITOR CONFLICT, IMPROPER COERCION**

- 86. Plaintiffs repeat the allegations of paragraphs 1 through 85.
- 87. Defendant Pagnotta violated the rules of legal ethics and G.L. c. 268A § 23 by continuing to participate as counsel for the Board despite his self-declared incompetence and his actual and potential conflicts of interest.
- 88. Pagnotta has violated the Standards of Conduct for government officials set out in G.L. c. 268A, § 23(b)(3).
- 89. Pagnotta's improper actions carrying out the Mayor's illegal interference have contaminated the Board's proceedings, rendering the decision to rescind the Emergency Order illegal.
- 90. WHEREFORE, Plaintiffs request that this court enter judgment as follows:
  - a. That the decision to rescind the Emergency Order was:
    - A. in violation of constitutional provisions,
    - B. in violation of or contrary to state law,
    - C. in violation of or contrary to the Pittsfield Charter and Code,
    - D. in excess, or in the alternative in derogation, of the Board's authority or jurisdiction,

- E. based upon error of law,
  - F. made upon unlawful procedure,
  - G. tainted and rendered unlawful by the illicit actions of the Mayor, City Solicitor and/or others under the Mayor's influence and control,
  - H. is not supported by substantial evidence.
- b. Issue an Order vacating the rescission of the Emergency Order and remanding the matter to the Board for further consideration and action.
  - c. Provide an award of costs and attorney's fees for bringing this action; and
  - d. Provide such other relief as this court deems meet and just under the circumstances.

#### **COUNT FOUR – DECLARATORY JUDGMENT**

- 91. Plaintiffs repeat the allegations of paragraphs 1 through 90.
- 92. There exists an actual controversy as to whether the Board properly decided to rescind the Emergency Order.
- 93. Plaintiffs seek a declaration of the rights and obligations regarding the issues raised in Counts One, Two and Three.
- 94. WHEREFORE, Plaintiffs request that this court enter judgment declaring as follows:
  - a. That the Order was:

- A. in violation of constitutional provisions,
  - B. in violation of or contrary to state law,
  - C. in violation of or contrary to the Pittsfield Charter and Code,
  - D. in excess, or in the alternative in derogation, of the Board's authority or jurisdiction,
  - E. based upon error of law,
  - F. made upon unlawful procedure, and/or
  - G. is not supported by substantial evidence.
- b. That the Mayor had the duty to enforce the Board's Emergency Order.
  - c. That the Mayor committed prejudicial error of law by failing and refusing to cause "the charter, laws, ordinances and other orders of the city government to be enforced" as required by Pittsfield, MA Charter Art. 3, Section 3-2.
  - d. The Board's exercise of its legislatively assigned duties and required actions pursuant to G.L. c. 111, §§ 122-152 and the state Sanitary Code, including but not limited to Sanitary Code Chapters 11 and 410 are exempt from the Mayor's direction and control.
  - e. The Mayor illegally usurped the Board's independent state law deriving powers and duties, and impeded and interfered with and frustrated their exercise of those powers and duties through direct intimidation and coercion



and by wrongly using the Solicitor and others as her own political and personal agents to carry out this campaign.

- f. That the City Solicitor suffered actual conflicts of interest and was incompetent to provide legal advice and representation in the Board matter, and his improper involvement, incorrect advice, coercive actions and scheming to deprive the Board of legal representation wrongly forced the Board to rescind the Emergency Order.
- g. Pagnotta has violated the Standards of Conduct for government officials set out in G.L. c. 268A, § 23(b)(3).
- h. The City Solicitor's improper actions carrying out the Mayor's illegal interference have contaminated the Board's proceedings, rendering the decision to rescind the Emergency Order illegal.
- i. Provide an award of costs and attorney's fees for bringing this action;  
and
- j. Provide such other relief as this court deems meet and just under the circumstances.

#### **REQUEST FOR TRANSCRIPT OF HEARINGS**

Pursuant to Standing Order 1-96, paragraph 2, Plaintiffs hereby request that the Board provide a transcript of the record in this matter.

Plaintiffs further request that the city preserve a full record and transcript of all executive sessions during which the Verizon Wireless tower matter was discussed. Plaintiffs intend to seek access to those records during discovery.

Respectfully Submitted,

/s/ Paul Revere, III

Paul Revere, III

(BBO #636200)

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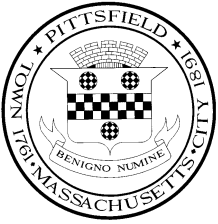
(pending *pro hac vice*)

Attorneys for Courtney Gilardi, Charlie Herzig, Judy Herzig, Mark Markham, Angelika Markham, and Elaine Ireland,

Date: July 28, 2022

**EXHIBIT ONE**

**April 2, 2022 Pittsfield Board of Health Emergency Order**



# PITTSFIELD BOARD OF HEALTH

*Roberta Orsi, MS, RN, CCP, Chairperson*

*Kimberly Loring, PMHNP-BC ~ Steve Smith, MA ~ Brad Gordon, JD ~ Jeffrey A. Leppo, MD*

April 11, 2022

Pittsfield Cellular Telephone Company  
d/b/a Verizon Wireless  
99 East River Drive  
East Hartford, CT 06108  
Att: Attorney Ellen W. Freyman

Pittsfield Cellular Telephone Company  
d/b/a Verizon Wireless  
Mark J. Esposito, Esq.  
Shatz, Schwartz & Fentin, P.C.  
1441 Main Street, Suite 1100  
Springfield, MA 01103

Farley White South Street, LLC  
Att: Roger W. Altreuter, Manager  
155 Federal Street, 18<sup>th</sup> Floor  
Boston, MA 02110

## EMERGENCY ORDER

**REQUIRING THAT PITTSFIELD CELLULAR TELEPHONE COMPANY, D/B/A VERIZON WIRELESS, AND FARLEY WHITE SOUTH STREET, LLC, SHOW CAUSE WHY THE PITTSFIELD BOARD OF HEALTH SHOULD NOT ISSUE A CEASE AND DESIST ORDER ABATING A NUISANCE AT 877 SOUTH STREET ARISING FROM THE OPERATION OF A VERIZON WIRELESS CELL TOWER THEREON AND CONSTITUTING IMMEDIATE ORDER OF DISCONTINUANCE AND ABATEMENT IF NO HEARING IS REQUESTED**

Pursuant to, *inter alia*, MGL 111 ss 122-125, 127-127I, 130, 143-144, 146-150, and State Sanitary Code 410.750, 410.831-832, 410.850-960, the Board of Health deems the following actions necessary to protect the public health in the City of Pittsfield, State of Massachusetts.

**Whereas**, Verizon Wireless has constructed and operates a wireless telecommunications facility, a cell tower (the “facility”), located at 877 South Street, Pittsfield, Massachusetts, on property Verizon Wireless leases from owner Farley White South Street LLC. The Verizon Wireless facility was activated in August, 2020, and has been operating continuously since that date.

**Whereas**, soon after the facility was activated and began transmitting, the City started to receive reports of illness and negative health symptoms from residents living nearby the facility, and in particular, from residents living in the so-called “Shacktown” neighborhood. The negative health symptoms the affected residents have reported include complaints of headaches, sleep problems, heart palpitations, tinnitus (ringing in the ears), dizziness, nausea, skin rashes, and memory and cognitive problems, among other medical complaints.

**Whereas**, as further documented below, the neurological and dermatological symptoms experienced by the residents are consistent with those described in the peer-reviewed scientific and medical literature as being associated with exposure to pulsed and modulated Radio Frequency (“RF”) radiation, including RF from cell towers.

**Whereas**, those symptoms are sometimes referenced in the scientific and medical literature as electromagnetic sensitivity, also known as Electro-Hypersensitivity (“EHS”), Microwave Sickness, or Radiation Sickness. All these names describe a syndrome where the afflicted develop one or more

recognized symptoms as a result of pulsed and modulated RF radiation (“RFR”). EHS is a spectrum condition. For some, the symptoms can become debilitating, and severely affect their ability to function.

**Whereas**, the federal government has officially recognized this syndrome in various ways. For example, in 2002, the “Access Board,” an independent federal agency responsible for publishing Accessibility Guidelines used by the U.S. Department of Justice to enforce the Americans with Disabilities Act (“ADA”), recognized that “electromagnetic sensitivities may be considered disabilities under the ADA.”<sup>1</sup> The Access Board contracted for the publication of the National Institute of Building Sciences 2005 report, which concludes that radiofrequency/electromagnetic frequency (RF/EMF) radiation is an “access barrier,” and can render buildings “inaccessible” to those with electromagnetic sensitivity. The report recommends accessibility guidelines.<sup>2</sup> For ADA Title I purposes, the U.S. Department of Labor’s Office of Disability Employment Policy has issued guidelines for accommodations; these guidelines emphasize exposure avoidance and list as a resource, the EMF Medical Conference 2021 which trains medical doctors on the issue of electromagnetic radiation and health.<sup>3 4</sup>

**Whereas**, The Centers for Disease Control’s 2022 Classification of Diseases Codes Clinical Modification and Procedural Classification System implements the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM). The “diagnosis code” for Radiation Sickness” is “T66.”<sup>5</sup> The “injury” code for “Exposure to Other Nonionizing Radiation” is “W90.”<sup>6</sup> These codes cover electro-sensitivity along with other RF exposure-related injuries and maladies.

**Whereas**, the Health Board does not administer disability laws, but the foregoing authority strongly confirms that RF/EMF – even if emitted at levels within the FCC emissions guidelines – can be injurious to health or cause common injury to that significant portion of the public who are electromagnetic sensitive. Stated differently, pulsed and modulated RF can constitute a “public nuisance” or a “cause of sickness,” and can constitute a trade which may result in a nuisance or be dangerous to the public health for purposes of G.L. ch. 111 ss 122-125, 127B, 127C, 143-150, and 152.

**Whereas**, the federal government’s recognition that pulsed RF can directly cause harm to at least certain individuals or create an access barrier means that for the purposes of Massachusetts law, RF/EMF may effectively render certain dwellings Unfit for Human Habitation or constitute a Condition Which May Endanger or Materially Impair the Health or Safety and Well-Being of an Occupant as defined in State Sanitary Code 410.020 and 410.750(P).

**Whereas**, Verizon Wireless 877 South Street wireless facility is not itself a dwelling unit, but the Sanitary Code and other Massachusetts law allow the Health Board to act as necessary to ensure that

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<sup>1</sup> U.S. Access Board. (n.d.). *Indoor Environmental Quality*. U.S. Access Board - Introduction. Retrieved March 31, 2022, from <https://www.access-board.gov/research/building/indoor-environmental-quality/>.

<sup>2</sup> *IEQ Indoor Environmental Quality Project (IEQ)*. (n.d.). National Institute of Building Sciences (NIBS), The Architectural and Transportation Barriers Compliance Board (Access Board). <https://www.access-board.gov/files/research/IEQ-Report.pdf>.

<sup>3</sup> U.S. Department of Labor Office of Disability Employment Policy [Accommodations Webpage](#); Job Accommodation Network: [Accommodation and Compliance: Electrical Sensitivity](#) and [Accommodation and Compliance Series: Employees with Electrical Sensitivity Publication Downloads](#).

<sup>4</sup> *EMF – Medical Conference 2021* Continuing Medical Education for physicians and health professionals. Several experts who presented to the Board and provided information also presented at the EMF Medical conference including Sharon Goldberg MD, Magda Havas PhD, Paul Héroux, PhD, Cindy Russell MD, Sheena Symington, B.Sc., M.A., Cecelia Doucette, and Theodora Scarato, MSW.

<sup>5</sup> *2022 ICD-10-CM Diagnosis Code T66: Radiation sickness, unspecified*. (n.d.). Retrieved March 31, 2022, from <https://www.icd10data.com/ICD10CM/Codes/S00-T88/T66-T78/T66-/T66>.

<sup>6</sup> *W90—ICD-10 Code for Exposure to other nonionizing radiation—Non-billable*. (n.d.). ICD-10 Data and Code Lookup. Retrieved March 31, 2022, from <https://icd10coded.com/cm/W90/>.

activity or operations in a non-dwelling building, structure, or facility do not contribute to conditions that impact occupants of a dwelling to the point they render a dwelling unfit for habitation for purposes of Sanitary Code 410.831.

**Whereas**, the Health Board has been presented with credible, independent, and peer-reviewed scientific and medical studies and reports that provide convincing evidence that pulsed and modulated RFR is bio-active and affects all living things over the long term. RFR can and does also cause more immediate harm and injury to human beings. The Health Board has also received strong evidence that the Verizon Wireless 877 South Street wireless facility is presently causing such harm and injury to numerous residents in the adjacent neighborhood.

**Whereas**, City of Pittsfield residents have submitted to the Health Board over 11,000 pages of evidence of studies, reports, and scientific and medical experts' opinion about the dangers to human health and the environment caused by exposure to wireless radiation.<sup>7</sup> The Health Board also has heard testimony from medical professionals who directly treat patients injured by RF/EMF as well as testimony from scientific experts. The Board has been presented with personal testimony from many of the City of Pittsfield residents who have been personally harmed by pulsed and modulated RF radiation transmitted from the Verizon Wireless 877 South Street wireless facility's operations. *Specifically, but without limitation, the Health Board bases its conclusions, findings, and actions on all the scientific, medical, and personal evidence that has been submitted, but provides this general summary:*

1. The evidence presented to the Board includes well over one thousand peer-reviewed scientific and medical studies which consistently find that pulsed and modulated RFR has bio-effects and can lead to short- and long-term adverse health effects in humans, either directly or by aggravating other existing medical conditions. Credible, independent peer-reviewed scientific and medical studies show profoundly deleterious effects on human health, including but not limited to: neurological and dermatological effects; increased risk of cancer and brain tumors; DNA damage; oxidative stress; immune dysfunction; cognitive processing effects; altered brain development, sleep and memory disturbances, ADHD, abnormal behavior, sperm dysfunction, and damage to the blood-brain barrier.<sup>8</sup>
2. Peer-reviewed studies have demonstrated that pulsed and modulated RFR can cause the symptoms suffered by and personally attested to by City of Pittsfield's residents, including studies showing that these symptoms can develop as a result of exposure to cell towers specifically.
3. The symptoms described by City of Pittsfield's residents are often referred to in the scientific and medical literature as "electrosensitivity." The record evidence shows that exposure to pulsed and modulated RFR within the emission limits authorized by the FCC can cause the

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<sup>7</sup> [Environmental Health Trust et al. v. FCC Key Documents](https://ehtrust.org/environmental-health-trust-et-al-v-fcc-key-documents/) [Volume 1](#), [Volume 3](#), [Volume](#), [Volume 5](#), [Volume 6](#), [Volume 7](#), [Volume 8](#), [Volume 9](#), [Volume 10](#), [Volume 11](#), [Volume 12](#), [Volume 13](#), [Volume 14](#), [Volume 15](#), [Volume 16](#), [Volume 17](#), [Volume 18](#), [Volume 19](#), [Volume 20](#), [Volume 21](#), [Volume 22](#), [Volume 23](#), [Volume 24](#), [Volume 25](#), [Volume 26](#), [Volume 27](#) <https://ehtrust.org/environmental-health-trust-et-al-v-fcc-key-documents/>.

<sup>8</sup> [The California Medical Association Wireless Resolution](https://ehtrust.org/the-california-medical-association-wireless-resolution/). (2015, March 9). *Environmental Health Trust*. <https://ehtrust.org/the-california-medical-association-wireless-resolution/>; bioadmin. (n.d.). [Conclusions—BIOINITIATIVE 2012—CONCLUSIONS Table 1-1](https://bioinitiative.org/conclusions/). *The BioInitiative Report*. Retrieved March 19, 2022, from <https://bioinitiative.org/conclusions/>; bioadmin. (n.d.). [Table of Contents](https://bioinitiative.org/table-of-contents/). *The BioInitiative Report*. Retrieved March 19, 2022, from <https://bioinitiative.org/table-of-contents/>; [EMFscientist.org—International EMF Scientist Appeal](https://www.emf-scientist.org/). (n.d.). Retrieved March 19, 2022, from <https://www.emf-scientist.org/index.php/emf-scientist-appeal>.



symptoms, injuries, and mechanisms of harm associated with electrosensitivity and exhibited by the residents near the facility.<sup>9</sup>

4. Electrosensitivity describes a constellation of mainly neurological symptoms that occur as a result of exposure to pulsed and modulated RFR. The symptoms described in the scientific and medical literature include headaches, sleep problems, heart palpitations, ringing in the ears, dizziness, nausea, skin rashes, memory, and cognitive problems, among others. According to the evidence, exposure avoidance is the only effective management.

5. There are diagnosis guidelines. The European Academy of Environmental Medicine (EUROPAEM) published the “*EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses*.”<sup>10</sup> These peer-reviewed guidelines cite 235 scientific references for symptoms, physiological damage, and mechanisms of harm. These guidelines have been used by doctors in the U.S. and throughout the world. Dr. Sharon Goldberg, MD, who diagnosed three City of Pittsfield residents with electro-sensitivity following their continuous exposure to the Verizon Wireless 877 South Street wireless facility, uses these guidelines. Dr. Goldberg has provided this Board with documentation and supporting information on the injuries suffered by these three Shacktown residents which Dr. Goldberg has opined to a reasonable degree of medical certainty have been caused by their exposure to the wireless radiation being emitted by this facility.

6. The recent U.S. government reports regarding the “mystery illness” of U.S. diplomats in Cuba, China, Austria, and elsewhere provide further support that pulsed RF can cause injury similar to that suffered by Shacktown residents. In December 2020, the National Academy of Sciences, Engineering, and Medicine (NAS) concluded<sup>11</sup> that the diplomats’ “mystery illness” is likely caused by pulsed RF. Prof. Beatrice Golomb, MD, PhD, 2018, wrote the first paper analyzing the science and showed that pulsed RFR is the likely cause of the symptoms suffered by some US diplomats in Cuba and China.<sup>12</sup> Her analysis relies on government studies as well as studies on commercial wireless devices and technology, and demonstrates how the diplomats’ symptoms can result from pulsed RFR exposure. Dr. Golomb concluded that the diplomats likely suffer from electrosensitivity (which she refers to as “Microwave Illness”). Most recently, on February 1, 2022, the federal government published a report adopting the conclusion of the NAS, finding that pulsed RFR is likely the cause of the diplomats’ sickness.<sup>13</sup>

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<sup>9</sup> Belyaev, I., Dean, A., Eger, H., Hubmann, G., Jandrisovits, R., Kern, M., Kundi, M., Moshhammer, H., Lercher, P., Müller, K., Oberfeld, G., Ohnsorge, P., Pelzmann, P., Scheingraber, C., & Thill, R. (2016). [EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses](https://doi.org/10.1515/reveh-2016-0011). *Reviews on Environmental Health*, 31(3), 363–397. <https://doi.org/10.1515/reveh-2016-0011> ; Bray, R. (n.d.). *Electromagnetic Hypersensitivity*. 81. <https://maisonsaine.ca/uploads/2016/09/ehs-bray-13-08-2016.pdf>.

<sup>10</sup> Belyaev, I., Dean, A., Eger, H., Hubmann, G., Jandrisovits, R., Kern, M., Kundi, M., Moshhammer, H., Lercher, P., Müller, K., Oberfeld, G., Ohnsorge, P., Pelzmann, P., Scheingraber, C., & Thill, R. (2016). [EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses](https://doi.org/10.1515/reveh-2016-0011). *Reviews on Environmental Health*, 31(3), 363–397. <https://doi.org/10.1515/reveh-2016-0011>.

<sup>11</sup> National Academies of Sciences, E., and Medicine. (2020). *An Assessment of Illness in U.S. Government Employees and Their Families at Overseas Embassies*. The National Academies Press. <https://doi.org/10.17226/25889>.

<sup>12</sup> Golomb, B. A. (2018). [Diplomats’ Mystery Illness and Pulsed Radiofrequency/Microwave Radiation](https://doi.org/10.1162/neco_a_01133). *Neural Computation*, 30(11), 2882–2985. [https://doi.org/10.1162/neco\\_a\\_01133](https://doi.org/10.1162/neco_a_01133).

<sup>13</sup> [Executive Summary DECLASSIFIED by DNI Haines on 1 February 2022](https://www.dni.gov/files/ODNI/documents/assessments/2022_02_01_AHI_Executive_Summary_FINAL_Redacted.pdf). (2022). [https://www.dni.gov/files/ODNI/documents/assessments/2022\\_02\\_01\\_AHI\\_Executive\\_Summary\\_FINAL\\_Redacted.pdf](https://www.dni.gov/files/ODNI/documents/assessments/2022_02_01_AHI_Executive_Summary_FINAL_Redacted.pdf).

7. As the record shows, there is evidence of clusters of sickness around cell towers. Evidence filed in the *Environmental Health Trust, et al. v. FCC case*<sup>14</sup> and provided to the Board of Health shows that California firefighters developed electrosensitivity symptoms after a cell tower was installed on their stationhouse, including headaches, memory problems, sleeping problems, depression, and other neurological problems. SPECT brain scans found brain abnormalities. Additionally, TOVA testing found delayed reaction time, lack of impulse control, and difficulty in maintaining mental focus. Following these incidents, the International Association of Fire Fighters Division of Occupational Health Safety and Medicine investigated evidence of pulsed and modulated RF harm, and published a resolution opposing the use of fire stations as base stations for towers and/or antennas for the conduction of cell phone transmissions.<sup>15</sup>

8. In November 2020, New Hampshire's Commission to Study the Environmental and Health Effects of Evolving 5G Technology (the Commission was established by the State Legislature to learn about the health effects of 5G wireless radiation), published a report which concludes that RF emissions at levels below the FCC emissions guidelines can be harmful. The Committee's final report followed a thorough study of the evidence. The Committee's final report recommends adoption of cell tower antenna setbacks and acknowledges electrosensitivity and its association with RFR exposure.<sup>16</sup> Dr. Kent Chamberlin, former Chair, Department of Computer and Electrical Engineering, University of New Hampshire, and Dr. Paul Heroux, PhD, Professor of Toxicology and Health Effects of Electromagnetism, McGill University Faculty of Medicine, two of the expert members of the New Hampshire Committee, have provided testimony to the Pittsfield City Council about the health effects of RFR exposure, and this testimony has been included in the record considered by this Board.

9. Other highly-credentialed, independent academic research experts have also offered testimony, at no cost, in support of residents' contentions that the Verizon Wireless 877 South Street wireless facility is the cause of their electrosensitivity symptoms. Experts include Dr. Martha Herbert, MD PhD, pediatric neurologist and former Assistant Professor at Harvard Medical School, and Dr. Magda Havas PhD., Professor Emeritus, Trent School of the Environment, Trent University.

10. Professor David Carpenter, MD, former Dean, School of Public Health at University of Albany, New York, wrote a letter to the City of Pittsfield in which he discussed studies showing that cell towers increase cancer risk, and cause changes in hormones as well as electrosensitivity symptoms, including headaches, fatigue, "brain fog," and ringing in the ears. Dr. Carpenter has published numerous studies on the negative health effects of electromagnetic radiation which have been submitted to this Board and are part of the record herein.<sup>17</sup> Dr. Carpenter is the co-

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<sup>14</sup> *Env'tl. Health Tr., et al. v. FCC*, 9 F.4th 893 (D.C. Cir. 2021).

<sup>15</sup> [Cell Tower Radiation Health Effects](https://www.iaff.org/cell-tower-radiation/). (2004). *IAFF*. Retrieved March 19, 2022, from <https://www.iaff.org/cell-tower-radiation/>; Susan Foster Ambrose, M.S.W., Medical Writer. (2004). *INTERNATIONAL ASSOCIATION OF FIREFIGHTERS (IAFF) VOTES TO STUDY HEALTH EFFECTS OF CELL TOWERS ON FIRE STATIONS Call for Moratorium on New Cell Towers on Fire Stations Until Health Effects Can Be Studied*. Advancing Sound Public Policy on the Use of Electromagnetic Radiation (EMR). [https://ehtrust.org/wp-content/uploads/pr\\_iaff\\_vote-1.pdf](https://ehtrust.org/wp-content/uploads/pr_iaff_vote-1.pdf).

<sup>16</sup> *Final Report of the Commission to Study The Environmental and Health Effects of Evolving 5G Technology* (HB 522, Chapter 260, Laws of 2019, RSA 12-K:12–14). (2020). State of New Hampshire. <http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>.

<sup>17</sup> Bandara, P., & Carpenter, D. O. (2018). *Planetary electromagnetic pollution: It is time to assess its impact*. *The Lancet. Planetary Health*, 2(12), e512–e514. [https://doi.org/10.1016/S2542-5196\(18\)30221-3](https://doi.org/10.1016/S2542-5196(18)30221-3).

editor of the BioInitiative Report,<sup>18</sup> a scientific review of the science on RF/EMF by independent expert scientists. The report reviewed approximately 2,000 published studies on RFR health effects. After it was first released, the content of the Bioinitiative Report underwent peer review and was published in condensed form as a special two-volume issue of the Journal Pathophysiology. Additional chapters have been published in various journals.<sup>19</sup> The Report concludes that bio-effects from wireless technology and infrastructure, including from cell towers, occur at radiation levels significantly below the FCC's emissions guidelines as documented in published research. The Report finds that the overwhelming majority of published neurological studies show bio-effects.<sup>20</sup> Over 90 percent of the studies that examine the oxidative stress mechanism (a mechanism of harm associated also with electro-sensitivity) show bio-effects.<sup>21</sup> The Report contains cell tower exposure studies that show harmful effects of radiation emitted by cell towers, and demonstrate that exposure to pulsed RF causes hormonal and cell stress effects at radiation levels far, far lower than the FCC emissions guidelines.<sup>22</sup> According to the 2012 Report's conclusion, public safety standards are 10,000 or more times higher than levels now commonly reported in mobile phone base station studies that reveal bio-effects. Because of the actual evidence of harm to humans from exposure to wireless radiation transmissions from cell towers, the Report uses mobile phone base station-RFR levels studies and other studies with very, very low RF exposures to determine the "lowest observed effect level" for RFR exposure as the basis for its recommendations for biologically-based exposure guidelines.<sup>23</sup>

11. Dr. Cindy Russell, a medical doctor and the executive director of "*Physicians for Safe Technology*,"<sup>24</sup> provided a synopsis of 28 studies showing cell tower harm in her letter to this Board, dated July 6, 2021, which explains how it is "well established" that wireless radiation at non-thermal levels causes oxidative stress, and "oxidative stress plays a major part in the development of chronic, degenerative, and inflammatory illnesses such as cancer, autoimmune

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<sup>18</sup> bioadmin. (n.d.). Table of Contents. *The BioInitiative Report*. Retrieved March 19, 2022, from <https://bioinitiative.org/table-of-contents/>.

<sup>19</sup> Martin Blank (Ed.). (2009). [Electromagnetic Fields \(EMF\) Special Issue](https://doi.org/10.1016/S0928-4680(09)00066-2). *Pathophysiology*, 16(2–3), CO2. [https://doi.org/10.1016/S0928-4680\(09\)00066-2](https://doi.org/10.1016/S0928-4680(09)00066-2); Hardell, L., & Sage, C. (2008). [Biological effects from electromagnetic field exposure and public exposure standards](https://doi.org/10.1016/j.biopha.2007.12.004). *Biomedicine & Pharmacotherapy*, 62(2), 104–109. <https://doi.org/10.1016/j.biopha.2007.12.004>; Herbert, M. R., & Sage, C. (2013). Autism and EMF? Plausibility of a pathophysiological link – Part I. *Pathophysiology*, 20(3), 191–209. <https://doi.org/10.1016/j.pathophys.2013.08.001>; Herbert, M. R., & Sage, C. (2013). Autism and EMF? Plausibility of a pathophysiological link part II. *Pathophysiology*, 20(3), 211–234. <https://doi.org/10.1016/j.pathophys.2013.08.002>.

<sup>20</sup> Neurological Effects Studies Percent Comparison, BioInitiative. (2022). <https://bioinitiative.org/wp-content/uploads/2020/10/13-Neurological-Effects-Studies-Percent-Comparison-2020.pdf>.

<sup>21</sup> Henry Lai. (n.d.). Research Summaries. *The BioInitiative Report*. Retrieved March 19, 2022, from <https://bioinitiative.org/research-summaries/>; Neurological Effects Studies Percent Comparison, BioInitiative. (2022). <https://bioinitiative.org/wp-content/uploads/2020/10/13-Neurological-Effects-Studies-Percent-Comparison-2020.pdf>.

<sup>22</sup> BUCHNER K, EGER H (2011) [A Long-term Study Under Real-life Conditions / Umwelt-Medizin-Gesellschaft](https://www.avaate.org/IMG/pdf/Rimbach-Study-20112.pdf) 24(1): 44-57. <https://www.avaate.org/IMG/pdf/Rimbach-Study-20112.pdf>.

<sup>23</sup> Henry Lai. (n.d.). Research Summaries. *The BioInitiative Report*. Retrieved March 19, 2022, from <https://bioinitiative.org/research-summaries/>; Neurological Effects Studies Percent Comparison, BioInitiative. (2022). <https://bioinitiative.org/wp-content/uploads/2020/10/13-Neurological-Effects-Studies-Percent-Comparison-2020.pdf>.

<sup>24</sup> Physicians for Safe Technology | Cell Tower Radiation Health Effects. (2017, September 11). *Physicians for Safe Technology*. <https://mdsafetech.org/cell-tower-health-effects/>.

disorders, aging, cataracts, rheumatoid arthritis, cardiovascular and neurodegenerative diseases, as well as some acute pathologies (trauma, stroke). Effects of oxidative stress are cumulative.”<sup>25</sup>

12. Devra Davis PhD, MPH, the founder of the Environmental Health Trust, sent a scientific letter and briefing materials to this Board, documenting the published science indicating how FCC limits do not ensure safety to human health, and how legal levels of wireless radiation can damage the health of children, pregnant women, and the medically vulnerable. Studies of wireless radiation exposure from cell towers document neuropsychiatric problems, elevated diabetes, headaches, sleep problems, and genetic damage.<sup>26</sup> Attached to the letter were several published articles, including an article published in the journal *Lancet Planetary Health*, which presented an evaluation by the Oceania Radiofrequency Scientific Advisory Association of 2266 studies (including in-vitro and in-vivo studies in human, animal, and plant experimental systems and population studies). The evaluation found that most studies have demonstrated significant biological or health effects associated with exposure to anthropogenic electromagnetic fields.<sup>27</sup> Furthermore, a scientifically referenced Environmental Health Trust White Paper addressed common misconceptions around the health effects of wireless radiation.<sup>28</sup>

13. These and other studies and reports in the record before this Board show that wireless radiation transmitted from cell towers can have adverse effects even when the pulsed and modulated RF emissions are significantly lower than the FCC’s emission guidelines. Compliance with FCC emission limits does not ensure safety nor protection from all harm. Published studies provided to the Board show negative health effects on human beings at legally allowed levels including: neurological effects and adverse effects on well-being, clear, measurable, physiological effects, hormonal changes, oxidative stress damage, negative effects on sperm, increased cancer risk, and DNA damage.<sup>29</sup>

14. Epidemiological studies demonstrate that exposure to wireless radiation emissions from cell towers causes symptoms similar to those suffered by Shaktown residents as a result of the operation of the Verizon Wireless 877 South Street wireless facility. The record includes a 2010 review of wireless radiation exposure from cell towers and numerous other studies which are relevant to chronic long-term exposure similar to that from cell towers. Effects documented in these studies include various neurological symptoms such as fatigue, sleep problems, headaches and other effects on “wellbeing” proportionate to the distance from the cell tower.<sup>30 31 32</sup> A

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<sup>25</sup> Russell, C., (2021, July 6). [Cindy Russell MD to Pittsfield Board of Health. RE: Pittsfield testing of RFR emissions.](#) [Letter].

<sup>26</sup> Scarato, T., (2021, May 27). [Theodora Scarato to Gina Armstrong, City of Pittsfield Board of Health](#); Davis, D., et al., (2021, April 21). [Dr. Devra Davis, et al., to the Honorable Joseph R. Biden, President/Science/Briefing.](#) [Letters].

<sup>27</sup> Priyanka Bandara, David O Carpenter, [Planetary electromagnetic pollution: it is time to assess its impact](#), *The Lancet Planetary Health*, Volume 2, Issue 12, 2018, Pages e512-e514, ISSN 2542-5196, [https://doi.org/10.1016/S2542-5196\(18\)30221-3](https://doi.org/10.1016/S2542-5196(18)30221-3).

<sup>28</sup> [Myth Fact Scientific Response EHT 2022.](#)

<sup>29</sup> See Appendices I and II.

<sup>30</sup> Abdel-Rassoul, G., El-Fateh, O. A., Salem, M. A., Michael, A., Farahat, F., El-Batanouny, M., & Salem, E. (2007). [Neurobehavioral effects among inhabitants around mobile phone base stations.](#) *Neurotoxicology*, 28(2), 434–440. <https://doi.org/10.1016/j.neuro.2006.07.012>; Khurana, V., Hardell, L., Everaert, J., Bortkiewicz, A., Carlberg, M., & Ahonen, M. (2010). [Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations.](#) *International Journal of Occupational and Environmental Health*, 16, 263–267. <https://doi.org/10.1179/107735210799160192>.

<sup>31</sup> Levitt, B. B., & Lai, H. (2010). [Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays.](#) *Environmental Reviews*, 18(NA), 369–395. <https://doi.org/10.1139/A10-018>.

<sup>32</sup> [78 Studies Showing Health Effects from Cell Tower Radio Frequency](#); Oberfeld, G., & Gustavs, K. (2007). *Environmental Medicine Evaluation* (30). 48.

telecom company study found exposure to cell towers causes a variety of neurological symptoms and a dose response. The study also found a causal relationship with sleep disturbance. When, unknown to the subjects, the company secretly turned off the antennas for three days, the sleep quality improved in all subject groups that were studied.<sup>33</sup>

15. Evidence of electrosensitivity and its association to pulsed and modulated RF exposure, as well as evidence of harm to human health and the environment from exposure to wireless radiation from cell towers was filed in the case of *Environmental Health Trust, et al., v. Federal Communications Commission (FCC)* in the U.S. Court of Appeals for the District of Columbia Circuit. The petitioners challenged the FCC's decision in 2019 not to review and update its 1996 guidelines for wireless radiation emissions, following a multi-year proceeding to examine the developing science on the health and environmental effects of exposure to wireless radiation. The FCC determined in 2019 that its 1996 guidelines did not need to be updated.<sup>34</sup> On appeal, the DC Circuit court reversed the FCC, ruling in August 2021 that the FCC's determination that there is no evidence of non-cancerous and environmental harm from RF emissions below the FCC 1996 emissions guidelines was arbitrary, capricious, and not evidence-based. The DC Circuit court ruled that the FCC failed to explain why, despite the substantial evidence of harm filed in the FCC record, the agency decided to not further review its 1996 guidelines for possible updating. The DC Circuit remanded the case back to the FCC, and ordered the FCC to "*address the impacts of RF radiation on children, the health implications of long-term exposure to RF radiation*" as well as *environmental effects, new technological developments and adequacy of RF test procedures*. However, as of today's date, the FCC has not provided any response to the court order. Thus, while the 1996 FCC wireless emissions guidelines remain in effect, they have not been updated in 26 years, and they have not been substantiated by an up-to-date scientific review by any federal regulatory agency. Evidence provided to this Board confirms that when it comes to cell tower network RF emissions, there is no federal regulatory agency with health expertise monitoring the published science, nor providing surveillance for health effects, nor measuring RF levels in the environment.<sup>35</sup> As is also documented in a letter from the Environmental Protection Agency (the "EPA") to Theodora Scarato of Environmental Health Trust, the EPA has not reviewed the research on biological effects of exposure to wireless radiation since 1984.<sup>36</sup> The FDA has not reviewed the safety of environmental RF levels. The FDA stated in a letter<sup>37</sup> to a family requesting information on the safety of base station antennas that: "The Food and Drug Administration (FDA) does not regulate cell towers or cell tower radiation. Therefore, the FDA has no studies or information on cell towers to provide in response to your questions." The lack of oversight for the health effects of cell tower network radiofrequency exposure is a serious gap in

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<sup>33</sup> Cherry, N.J. (2002). [Evidence of neurological effects of electromagnetic radiation: implications for degenerative disease and brain tumour from residential, occupational, cell site and cell phone exposures \(9\)](#).

<sup>34</sup> *Environmental Health Trust, et al v. FCC*, 9 F.4th 893 (D.C. Cir. 2021). [https://www.cadc.uscourts.gov/internet/opinions.nsf/FB976465BF00F8BD85258730004EFDF7/\\$file/20-1025-1910111.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/FB976465BF00F8BD85258730004EFDF7/$file/20-1025-1910111.pdf).

<sup>35</sup> [Myth Fact Scientific Response by Environmental Health Trust 2022](#), sent to Pittsfield Board of Health by Courtney Gilardi.

<sup>36</sup> Scarato, T., (2021, May 27). [Theodora Scarato to Gina Armstrong, City of Pittsfield Board of Health](#); Davis, D., et al., (2021, April 21). EPA letter is page 24 of [Dr. Devra Davis, et al., to the Honorable Joseph R. Biden, President/Science/Briefing](#) [Letters].

<sup>37</sup> Theodora Scarato presentation of the FDA letter in a video presentation submitted to Pittsfield Board of Health, [Pittsfield MA Expert Forum on Cell Tower Cease-and-Desist Order](#), at minute 54:24, and also in [Myth Fact Scientific Response EHT 2022](#), under section "Myth: The Food And Drug Administration (FDA) has reviewed the science on 5G and cell towers and determined the radiation is safe and FCC limits protect public health."



federal accountability, especially when research documenting harmful effects continues to be published in respected journals.

16. In November 2021, scientific and policy experts, including Dr. Linda Birnbaum, former Head of the National Institute of Environmental Health Sciences and National Toxicology Program, Dr. Ronald Melnick, National Institute of Health scientist (now retired), Dr. Anthony Miller, Dr. Jerome A. Paulson, Devra Davis, PhD, and several others, sent new requests to the FCC calling for a full examination of the latest scientific evidence in order for the U.S. to develop regulatory safety limits that protect the public and environment from wireless radiation exposure. Included in their filing are over 1,000 pages of reports and studies on demonstrating harm to humans from exposure to RF radiation, including electrohypersensitivity, and harm to humans from exposure to RF radiation from cell towers specifically. The Environmental Health Trust filing to the FCC docket also includes letters from the BioInitiative Report, Environmental Working Group, Consumers for Safe Cell Phones, Phonegate Alerts, and Dr. Kent Chamberlin.<sup>38</sup>

17. The questions raised by the DC Circuit Court and the compelling scientific evidence submitted to this Board allows only one conclusion: pulsed and modulated RFR can and does cause harm, and at least a certain segment of the population can be severely harmed when exposed to this wireless radiation, especially for continuous periods of time. Exposure to wireless radiation can lead to significant temporary and possibly permanent injury, and according to the evidence, it seems that the most effective method to reduce the symptoms and mitigate the harm is through exposure avoidance.

18. This Board also finds that the information and testimony provided by Verizon Wireless do not convince this Board otherwise. In particular, this Board invited Verizon Wireless to meet by Zoom in September 2021 with Board Member Brad Gordon, then-Director of Public Health Gina Armstrong, and then-Senior Sanitarian (now current Director of Public Health) Andy Cambi to discuss the concerns of the City of Pittsfield Health Department, this Board, and residents of the City of Pittsfield about the wireless radiation emissions from the Verizon Wireless 877 South Street wireless facility ever since that facility was activated in August 2020. These concerns arose from the complaints reported by numerous residents of the adjacent residential neighborhood of negative health symptoms these residents and their relatives had been and were continuing to suffer from what they believed to be exposure to the continuous wireless radiation being transmitted from that Verizon Wireless facility. On September 9, 2021, Verizon Wireless appeared at the Board of Health Zoom session, represented by Verizon General Counsel New England Market, attorney Joshua E. Swift, Verizon Wireless Network Engineer, Jay Latorre, Verizon Wireless State and Government Affairs Director, Ellen Cummings, and Dr. Eric S. Swanson, Professor, Department of Physics and Astronomy, University of Pittsburgh. Professor Swanson was the primary spokesperson for Verizon Wireless at this meeting.

19. Professor Swanson presented prepared remarks, accompanied by a Powerpoint slide presentation. The Board did not place any time limits on Professor Swanson's presentation, and Ms. Armstrong and Mr. Gordon asked Professor Swanson many questions following his remarks. Professor Swanson's main points included: (a) electromagnetic radiation is the best understood phenomenon in the universe; it is not nuclear radiation; (b) electromagnetic waves form the

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<sup>38</sup> <https://ecfsapi.fcc.gov/file/11302824721650/Remand%20Filing%20-%20Nov%2030th.pdf>, Linda S. Birnbaum, PhD, et al. (2021, November 24). *FCC Record Refresh Letter from Scientists to The Honorable Jessica Rosenworcel, Commissioner, Acting Chairwoman, Federal Communications Commission*. <https://ehtrust.org/wp-content/uploads/FCC-Record-Refresh-Letter-from-ScientistsWireless-Radiation.pdf>; <https://ehtrust.org/wp-content/uploads/New-Scientific-Developments-in-RFR-FCC-EHT-Remand-with-Studies-2.pdf>; Environmental Working Group, The Bioinitiative Report, Consumers for Safe Cell Phones, New Hampshire State Commission on 5G.



spectrum; (c) some radiation is ionizing which can sometimes cause cancer; (d) electromagnetic waves below the ionization threshold cannot cause cancer; (e) only wavelengths above visible light on the spectrum are ionizing; (f) wavelengths in the visible light portion of the spectrum are non-ionizing, and cannot cause cancer; (g) wavelengths below visible light on the spectrum, including thermal, microwave, 5G, 4G, and radio, are non-ionizing, and cannot cause cancer; (h) the only verified biological effect on tissue of non-ionizing radiation is heating; (i) the FCC regulates RFR to limit thermal effects, and FCC limits are very strict, set at 1/50 of the level of what is detectable in animal experiments; (j) the FCC limits are based on the evaluation of thousands of studies and the recommendations of expert organizations and agencies; (k) various international regulatory agencies and health organizations have concluded that there is no established evidence for health effects from radio waves used in mobile communications; (l) the FCC regularly updates its rules; (m) the consensus view of all scientists is that wireless radiation does not and cannot cause cancer; all studies to the contrary are from fringe scientists and those studies all show confirmation bias.

20. Following Professor Swanson's remarks, Ms. Armstrong acknowledged, without accepting, his contention that exposure to wireless radiation cannot cause cancer. But she pointed out that the immediate medical symptom residents of the Shacktown neighborhood adjacent to the Verizon Wireless 877 South Street wireless facility were complaining about were not cancer or thermal effects, but rather, headaches, tinnitus, and other conditions typical of electrohypersensitivity. Ms. Armstrong asked Professor Swanson to explain how to deal with those symptoms. Professor Swanson responded by insisting that the only verifiable biological effect of non-ionizing wireless radiation is heat, and the FCC so strictly regulates those emissions levels that heat cannot pose a problem from that Verizon Wireless cell tower. Professor Swanson acknowledged that certain people truly believe that they are hypersensitive to wireless radiation. But Professor Swanson suggested that those persons have psychological issues, and they should be dealt with sympathetically. Professor Swanson maintains that transmission of wireless radiation from Verizon's cell tower cannot actually cause those persons any injury because the immutable laws of physics make that impossible.

21. This Board has reviewed Professor Swanson's presentation and discussion and finds Professor Swanson's conclusions, several of which are strident and absolute, to lack credibility. A major problem with Professor Swanson is that he speaks as a purported expert about matters of human health and disease and medical and scientific studies about the health effects of exposure to wireless radiation, but he lacks any academic or professional qualifications in those fields. Professor Swanson is a professor of theoretical physics.<sup>39</sup> Professor Swanson's research interests focus on esoteric topics in nuclear physics, cosmology, and hadronic physics, especially in learning how "quarks" and "gluons" build the universe. All 124 of Professor Swanson's published scientific studies are limited to these subject areas.<sup>40</sup> Professor Swanson is not a medical doctor. Professor Swanson has no professional training or qualifications in medicine, medical research, biology, environmental studies, public health, epidemiology, or toxicology, and his professional credentials show no such expertise. *See* fn. 39. Yet Professor Swanson rejects the more than 2,000 peer-reviewed scientific studies showing that wireless radiation may or does negatively impact human health as outliers by "fringe" scientists who may be "conspiracy theorists" with an axe to grind, and asserts that their studies all show "confirmation bias." Professor Swanson asserts unequivocally that "the scientific consensus" is that wireless radiation cannot cause human harm. This Board finds that Professor Swanson lacks the qualifications and

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<sup>39</sup> <https://www.physicsandastronomy.pitt.edu/people/eric-s-swanson>.

<sup>40</sup> <https://inspirehep.net/literature?sort=mostrecent&size=100&page=2&q=fin%20a%20swanson%2C%20e%20s>.

the expertise to make such sweeping statements, and his credibility as a witness is severely undermined thereby.

22. Further undermining Professor Swanson's credibility is his appearance before this Board as a paid expert on behalf of Verizon Wireless, retained through his consulting business, Swanson Scientific Consulting.<sup>41</sup> On Professor Swanson's private consulting business website, he lists on the "Past Clients" tab, "Pittsfield, MA," one of his 20 listed "Scientific Presentations and Depositions to Cities." Professor Swanson also lists presentations to 5 State Senate Committees, the New York State Senators, the New Jersey Urban Mayors Association, and the Center for Growth and Opportunity. He names Verizon and Crown Castle Development (a major cell tower operator) as clients, as well as CTIA, the U.S. wireless industry's trade and lobbying association. *See fn. 41.* This Board, in assessing Professor Swanson's credibility, takes notice that he works as a paid industry consultant when making presentations such as the one he made to this Board regarding matters outside of his academic research and professional qualifications. In contrast, the experts who presented to this Board and spoke about the hazards to human health posed by wireless radiation from cell towers all had particular professional qualifications in the subject matter; none of these experts has received any compensation for their appearances before this Board, and all are independent academic researchers, with no affiliation to Verizon Wireless and the telecommunications industry. These facts enhance the credibility of these experts, especially vis-a-vis Professor Swanson.

23. Verizon Wireless also submitted to this Board documents which consist primarily of self-promotional brochures or industry-funded advocacy pieces rather than peer-reviewed scientific studies. These materials generally deny *any* prospect of harm, but do not meaningfully address the scientific evidence in the record or counteract the fact that the majority of independent (not industry-funded) studies, especially studies that use pulsed and/or modulated signals, do show harm.<sup>42</sup> Verizon Wireless did not present government regulatory agency reports or systematic scientific or medical reviews of cell tower wireless radiation exposure studies (or studies of comparable levels of chronic environmental exposures) which conclude that safety to human health is assured. Furthermore, Verizon Wireless cannot and does not adequately rebut the personal testimonies provided by the residents of the neighborhood ("Shacktown") in the City of Pittsfield adjacent to the Verizon Wireless 877 South Street wireless facility at the several public hearings before the Health Board of the actual harms they have suffered and are suffering from the operation of this wireless facility. Simply stated, the position of Verizon Wireless is that what is plainly happening in Pittsfield cannot occur. That position has been stated most clearly by Professor Swanson during his September 9, 2021 presentation to this Board. But this Board finds that, in fact, Shacktown residents have suffered, and are continuing to suffer, negative health effects from the continuous operation of the Verizon Wireless 877 South Street wireless facility since it was activated in August 2020.

24. The evidence shows that involuntary wireless radiation exposure directed upon Shacktown residents in their homes has effectively evicted several residents injured by pulsed and modulated RFR; they have no choice but to leave. Pulsed and modulated RFR from the Verizon Wireless 877 South Street wireless facility has rendered their homes uninhabitable – unfit for human habitation – because the continued exposure causes them severe pain, unable to function, and endangers and materially impairs their health and safety.

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<sup>41</sup> <https://swansonscientific.com/>.

<sup>42</sup> Panagopoulos, D. J., Johansson, O., & Carlo, G. L. (2015). [Real versus Simulated Mobile Phone Exposures in Experimental Studies](https://doi.org/10.1155/2015/607053). *BioMed Research International*, 2015, 607053. <https://doi.org/10.1155/2015/607053>.

**Whereas**, this Board has received direct testimony and written submissions from specific individuals that reside, or previously resided, within the reach of the wireless facility in issue. These residents state that they and/or other family members (including their children) have developed symptoms shortly after the facility was activated.<sup>43</sup> Many of the residents have testified on multiple occasions, which indicates the symptoms are persisting. It appears, based on the evidence, that there is a cluster of illness around the Verizon Wireless 877 South Street wireless facility that is caused by the facility's operation. Since no comprehensive survey has been conducted of all neighborhood residents, there may be additional affected residents.

**Whereas**, the symptoms reported by affected neighborhood residents are mainly neurological; they include headaches, ringing in the ears, dizziness, heart palpitations, nausea, and skin rashes. As the evidence that was provided to this Board shows, these symptoms are consistent with the scientific literature regarding adverse health effects from exposure to pulsed and modulated RF, including evidence specific to cellular antennas.

**Whereas**, this Board has received evidence from at least seventeen residents who have suffered on-going medical symptoms that arose for the first time after the Verizon Wireless 877 South Street wireless facility was activated in August 2020 and who believe their symptoms are caused by their continuous exposure to the wireless radiation being transmitted from that wireless facility. This Board finds their letters and oral testimonies to be authentic, compelling, and credible. As a result of their now-impaired health, some of these residents have decided to leave their homes, while others split their time between their homes in Shacktown and other temporary locations. This indicates that some affected Shacktown residents have been constructively evicted from their homes because of the operation of the wireless facility, and have been effectively rendered homeless. According to the evidence in the record, these symptoms are consistent with a diagnosis of electromagnetic sensitivity.

**Whereas**, this Board has received and reviewed, *inter alia*, the following evidence from specific Shacktown residents who have been and are being injured by the continued operation of the Verizon Wireless 877 South Street wireless facility:

1. Courtney Gilardi, a pre-school teacher, has testified that she and both of her daughters developed various symptoms immediately after the facility went into operation. Ms. Gilardi has provided a physician's medical diagnosis by Dr. Sharon Goldberg, MD, an internal and environmental medicine physician. This diagnosis has linked Ms. Gilardi's symptoms directly to the RF/EMF emitted by the facility by way of causation. Ms. Gilardi's diagnosis letter indicates her symptoms improve when she is away from home, but resume when she returns and is again exposed again to the facility's radiation.
2. Amelia Gilardi, Courtney Gilardi's minor daughter, testified that after the facility went into operation, she and her sister both started getting headaches. They feel dizzy and develop sleeping problems. Her sister also suffered itchiness and developed skin rashes, frequent nausea, and often has to sleep with a bucket next to her bed in case she needs to throw up. Both girls have missed school because of sickness caused by wireless radiation exposure from the cell tower. Amelia explained that when she is away from home (and out of range of the facility) she feels better.
3. Jessica and Frank Scago reported that following the facility's activation they began to suffer nausea, headaches, and dizziness. They are especially concerned for their five year old son who has Sensory Processing Disorder, a neurological disease. Since he has limited verbal skills, they do not know whether he too suffers from exposure to the wireless radiation transmitted from the cell tower. They are concerned that the exposure to the cell tower's emissions will aggravate

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<sup>43</sup> See Appendix V: Public Comment Testimony to Board of Health.

his condition. The literature indicates that it is not unusual for individuals to have or develop sensitivity to multiple toxins, and this can become an escalating feedback loop.

4. Paul and Diana Dalton and their two children all developed headaches and insomnia after the facility became operational. They left their home because it is essentially uninhabitable and inaccessible to them.

5. Charlie Herzig, an elderly resident, testified that both he and his wife have been unable to sleep since the tower was activated and that his wife has been especially affected.

6. Angie and Mark Markham reported that they have been severely affected. He is nauseous and has headaches in the morning and again as soon as he returns from work.

7. Elaine Ireland testified that she and her husband developed tinnitus and other serious health issues following the facility's activation. They are suffering from headaches and sleeplessness. They are deciding whether they must abandon their home because it is inaccessible and uninhabitable.

8. William Coe testified that he developed ringing in the ears and that his wife Luci has developed horrible headaches and migraines. He stated that he sent his wife and their three year old daughter Luci away from the house because they believe it is unsafe and therefore uninhabitable. They are concerned for their daughter as she also has limited verbal skills and therefore they don't know if she suffers.

**Whereas**, this evidence clearly demonstrates to this Board that specific Shacktown residents in the vicinity of the facility have suffered and are suffering injuries and illnesses directly caused by the pulsed and modulated RFR emitted by the facility in issue, and for so long as the facility is in operation it will continue to be injurious to the public health and continue to drive residents from their homes.

**Whereas**, the FCC's emissions guidelines provide limits for general population purposes. These guidelines were designed to measure and address primarily only "thermal" or heating related effects. The guidelines for whole body exposure (such as for exposure from cell towers) are for 30 minutes exposure, and protect only from thermal injury. They were not developed to protect sensitive populations against all harms. They ignore the effects of pulsation and modulation and non-thermal effects from long-term chronic exposure, cumulative effects, and effects of exposure to numerous sources of RF exposure.

**Whereas**, the FCC emissions guidelines do not address the demonstrated scientific, medical, and even legally-established fact that these general population limits do not adequately recognize that pulsed and modulated RF radiation emissions are "bioactive" – living things biologically respond to pulsed and modulated RF radiation, and this response can lead to harmful effects. More importantly, these guidelines entirely fail to address or provide for the situation where, at least, certain individuals develop adverse reactions such as those who experience electromagnetic sensitivity.

**Whereas**, this Board concludes that the FCC emissions guidelines do not prevent this Board, operating under State authority, from taking action to protect the health and safety of those specific individuals who have demonstrated that a continuously operating cell tower built adjacent to a densely populated residential neighborhood is injuring their health on a continuing basis, as well as the health of other neighborhood residents. The FCC has ruled that state and local zoning authorities can condition a land use permit on compliance with generally applicable state or local health and safety codes.<sup>44</sup> Verizon

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<sup>44</sup> *Broadband Deployment: Expanding the Reach and Reducing the Cost of Broadband Deployment by Improving Policies Regarding Public Rights of Way and Wireless Facilities Siting; 2012 Biennial Review of Telecommunications Regulations*, 29 FCC Rcd 12865, 122951, ¶202 (Oct. 17, 2014): ("We therefore conclude that States and localities may require a covered request to comply with generally applicable building, structural, electrical, and safety codes or with other laws codifying objective standards reasonably related to health and safety, and that they may condition approval on such compliance.").

Wireless' permit for this facility does precisely that. Verizon Wireless' permit expressly requires compliance with the Massachusetts Sanitary Code and Pittsfield's health-related rules, regulations and requirements. By this Order, this Board finds the Verizon Wireless 877 South Street wireless facility to be in violation, and this Board requires Verizon Wireless and the property owner to bring their facility and the premises into compliance with Massachusetts' and Pittsfield's generally applicable health and safety codes, just as FCC precedent and the permit expressly allow.

**Now, therefore, the Pittsfield Board of Health hereby FINDS AND ORDERS as follows:**

1. The Verizon Wireless 877 South Street wireless facility operated by Verizon Wireless is a public nuisance, a cause of sickness, and a trade which may result in a nuisance or be dangerous to the public health for purposes of G.L. ch. 111 ss 122-125, 127B, 127C, 143-150 and 152.
2. The premises owner, Farley White South Street LLC, is also responsible for all activities on its premises and within its direction and control.
3. The Verizon Wireless 877 South Street wireless facility operated on the premises creates an access barrier that directly causes harm to certain individuals, and renders dwellings Unfit for Human Habitation or constitutes a Condition Which May Endanger or Materially Impair the Health or Safety and Well-Being of an Occupant as defined in State Sanitary Code 410.020 and 410.750(P).
4. The Verizon Wireless 877 South Street wireless facility operated on the premises creates conditions that impact occupants of a dwelling to the point that it renders a dwelling unfit for habitation for purposes of Sanitary Code 410.831.
5. Verizon Wireless and Farley White South Street LLC are jointly and severally responsible for these unsafe conditions.
6. This Order shall be served on Verizon Wireless, through its authorized agents, and on Farley White South Street LLC, through its authorized agents, the persons responsible for the violations as provided by *inter alia*, G.L. ch. 111 ss 124, 127B, 127D, 144, and State Sanitary Code for 410.833, 410.850, and 410.851.
7. Verizon Wireless and Farley White South Street LLC are hereby ORDERED to show cause why the Board of Health should not issue an order requiring cessation of operations at the facility pursuant to the Board of Health's statutory and historical police power to protect its citizens from injury and harm.
8. Verizon Wireless and Farley White South Street LLC shall have SEVEN (7) DAYS from the date of this order to request a hearing on this Order to Show Cause. The Board of Health will promptly schedule such hearing in accordance with the provisions of G.L. ch. 111 and the State Sanitary Code, and provide public notice thereof.
9. In the event Verizon Wireless and Farley White South Street LLC do not timely request a hearing, this Order shall become and constitute a notice of discontinuance requiring that Verizon Wireless and Farley White South Street LLC abate and eliminate all activities and operations leading to the present and ongoing nuisance and violations of the State Sanitary Code at their own expense within SEVEN (7) DAYS of the expiration of the deadline to request a hearing.
10. Verizon Wireless and Farley White South Street LLC shall have the right to inspect and obtain copies of all relevant inspection or investigation reports, orders, notices, and other documentary information in the possession of the Board of Health; the right to be represented at the hearing.
11. Any affected party has a right to appear at said hearing and present evidence and argument in favor of or against discontinuance.

12. This is an important legal document. It may affect your rights.

The Health Board reserves the right to take such other and further action as it deems necessary to ensure that all injurious activities and conditions end, including directly acting to remove the offending facilities at the expense of Verizon Wireless and Farley White South Street LLC and or appointment of a receiver responsible for accomplishing the same.

This Order shall take effect upon issuance.

## **Appendix I: Letters and Testimony from Experts**

*All links provided by reference*

Russell, C., (2021, April 6). [Cindy Russell MD to Council Members in the City of Pittsfield. Re: 3/21/21 Agenda Item #15 to encourage the Pittsfield, Massachusetts Health Department to investigate the health effects reported in the vicinity of the Verizon 877 South Street Cell tower.](#) [Letter].

Russell, C., (2021, July 6). [Cindy Russell MD to Pittsfield Board of Health. RE: Pittsfield testing of RFR emissions.](#) [Letter].

Carpenter, D.O., (2020, October 8). [Dr. David Carpenter to Mayor of the City of Pittsfield MA and Board of Health on Cell Tower Radiation](#) [Letter].

Kulberg, A.G., (2021, August 31). [Dr. Kulberg Chair of Pittsfield Board of Health to the Joint Committee on Consumer Protection RE: Senate Bill S.186 and in Support of MA Commission on Wireless Radiation.](#) [Letter].

Havas, M., (2021, July 6). [Dr. Magda Havas to Gina Armstrong, Director of Public Health, Pittsfield Health Department, City of Pittsfield MA on Cell Tower Radiation Measurements and the Lack of Protections by the FCC.](#) [Letter]. [Slide Presentation for BOH Forum.](#)

Heroux, Paul., (2021, July 7) [Paul Héroux, PhD, McGill University Medicine Comments on RF EMISSION STUDY of South St cell tower \(SSct\) on June 10th by VComm Telecommunications Engineering.](#) [Letter].

White, P., (2021, October 4). [Peter White, Councilor City of Pittsfield to Massachusetts State Legislature in Favor of Wireless Right to Know Legislation.](#) [Letter].

Scarato, T., (2021, May 27). [Theodora Scarato to Gina Armstrong, City of Pittsfield Board of Health](#); Davis, D., et al., (2021, April 21). [Dr. Devra Davis, et al., to the Honorable Joseph R. Biden, President/Science/Briefing on Wireless.](#)[Letters]. [Myth Fact Scientific Response EHT 2022 sent to BOH by Courtney Gilardi.](#)

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Symington, S., (2021) [Letter to Pittsfield Board of Health July 7 2021](#) [Letter].

Chamberlain, K., (2022, February 20). [Kent Chamberlin PhD to Editor of the Berkshire Eagle Re: Response to Feb 19th Opinion on Verizon Cell Tower.](#) [Letter].

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## **Appendix II Testimony and Research on Cell Towers and Radiofrequency**



*Note: This is not an exhaustive list, but rather a short list of studies included in evidence sent to the Board.*

### **Compilation Documents**

[Compilation of Testimony from Courtney Gilardi and her family.](#) Courtney Gilardi and family members testified repeatedly to the Board, communicated by email and submitted extensive scientific research, video lectures, documentation of health effects and reports.

Michael Maudin, (Numerous letters 2021 and 2022) The Alliance for Microwave Radiation Accountability, Inc. Sent the Board numerous resources, scientific papers, and documents demonstrating evidence of adverse effects, research dating back decades on electromagnetic radiation and more including links [Primary Source Documents - Microwave Radiation Syndrome in April 2021](#), [Michael Maudin's testimony of injury from base station antennas](#) and primary source documents. [Microwave-Radiation-Syndrome-Primary-Source-Documents-BoH-April-2021.pdf](#). Maudin also sent 35 peer-reviewed studies and charts on microwave sickness caused by the radiation from cell towers to the Pittsfield Board of Health on January 5, 2021 and these are included in the reference list.

[Compilation of Research Studies on Cell Tower Radiation and Health.](#) (n.d.). *Environmental Health Trust*. Retrieved March 20, 2022, from <https://ehtrust.org/cell-towers-and-cell-antennae/compilation-of-research-studies-on-cell-tower-radiation-and-health/>

Maryland Children's Environmental Health and Protection Advisory Council (2016) [78 Studies Showing Health Effects from Cell Tower Radio Frequency.](#)

### **Research Studies**

Gandhi, G., Kaur, G., & Nisar, U. (2015). A cross-sectional case control study on genetic damage in individuals residing in the vicinity of a mobile phone base station. *Electromagnetic Biology and Medicine*, 34(4), 344–354. <https://doi.org/10.3109/15368378.2014.933349>.

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Bevington, M., (2017). Adverse Health Effects of Mobile Phone Masts and Planning Policy, Electrosensitivity UK (ES-UK).



Alster, Norm, [\*Captured Agency: How the Federal Communications Commission Is Dominated by the Industries It Presumably Regulates\*](#), Edmond J. Safra Center for Ethics Harvard University 2015.

### **Appendix III: Videos Resources Sent to Board of Health**

[Pittsfield MA Expert Forum on Cell Tower Cease-and-Desist Order](#): With Senator Denise Ricciardi, NH; Dr. Paul Héroux; Dr. Magda Havas; Dr. Kent Chamberlin; Dr. Sharon Goldberg, Environmental Health Trust Director Theodora Scarato; Attorney Robert Berg; Attorney Scott McCollough.

[Pittsfield MA Cell Tower Discussion 5 July 2021](#): Dr. Kent Chamberlin, EHTrust Policy Director Theodora Scarato & MA for Safe Technology Director Cecelia Doucette.

[Town of Lenox Board of Health Remote Meeting, August 19, 2021, with presentation by Kent Chamberlin, Ph.D., on Cell Tower Research.](#)

[Sacramento City Council Meeting: Includes testimony of two young girls who became sick after Verizon cell installation was powered up.](#)

[Wireless Radiation- What Environmental Health Leaders Need to Know](#): Featuring Linda Birnbaum, former Director of the National Institute for Environmental Health Sciences and the National Toxicology Program • Michael Lerner, Co-Founder and President of Commonweal and Co-Founder of Collaborative on Health and the Environment • Joel M. Moskowitz, PhD, Director Center for Family and Community Health, School of Public Health, University of California- Berkeley and Founder of Electromagnetic Radiation Safety • Uloma Uche, PhD, Environmental Working Group, author of new study on hazards of wireless radiation on children. • Sharon Buccino, Legal Expert, NRDC • Cindy Russell, MD Founder of Physicians for Safe Technology • Larry Ortega, Founder of Community Union • Theodora Scarato, Executive Director of the Environmental Health Trust.

### **Appendix V: Public Testimony to the Board of Health**

*All links provided by reference.*

*In addition to public testimony referenced below, Pittsfield residents submitted numerous emails, documents and letters to the Board.*

#### **Board of Health Meetings**

##### **April 12, 2021**

Agenda; [https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BOH\\_04\\_12.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BOH_04_12.pdf)

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/38962?channel=9>

6:50 Theodora Scarato and David Tyner not allowed to speak; 8:45 Gareth Coco; 10:40 Jeanne Bresnehan; 13:32 Amelia; 16:00 Jonathon Marshall; 19:29 Yvette Stryker; 22:38 Courtney Gilardi; Discussion on Petition 00:56:23.

##### **May 5, 2021**

Agenda; [https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BOH\\_05\\_05.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BOH_05_05.pdf)

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/40347?channel=9>.

04:00 Dr. Paul Heroux; 07:00 Michael Muadin; 10:44; 14:07 Amelia Gilardi; 16:30 Cecelia Doucette; 21:00 Courtney Gilardi; 26:15 Charlie Herzig; 28:00 Mr. Schnackenberg ; 29:00 Discussion Pittsfield Health Director Gina Armstrong.

##### **June 2, 2021**

#### **Pittsfield Board of Health Wireless Harm Expert Forum:**



Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BOHAgenda\\_06\\_02.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BOHAgenda_06_02.pdf).

Meeting Link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/40684?channel=9>.

17:00 Courtney Gilardi; 21:00 Amelia Gilardi; 30:00 Michael Muadin; 32:00 Theodora Scarato; 33:00 Virginia Farver; 40:00 Nancy Vandover; Kristen Betty; Presentations by; 1:13 Dr. Paul Heroux, [PDF of Slides](#); 1:29 Dr. David Carpenter; 1:44 Sheena Symington; 2:17 Dr. Magda Havas [Slide Presentation PDF Havas Slides BOH Forum](#).

### **July 7, 2021**

#### **VComm presents readings from the cell tower (first in person meeting)**

Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BOH\\_07\\_07.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BOH_07_07.pdf).

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/40992?channel=9>.

Comments by; 3:15 Amelia Gilardi 6:40 Elaine Ireland; 9:55 William Coe; 16:50 Courtney Gilardi; 20:45 Charlie Herzig; 22:30 Gareth Coco; 1:11 VComm presentation.

### **September 1, 2021**

Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BoardofHealth\\_09\\_01.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BoardofHealth_09_01.pdf).

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/41536?channel=9>

2:21 Courtney Gilardi ; 5:40 Amelia Gilardi.

### **October 6, 2021**

Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BoardofHealth\\_10\\_06.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BoardofHealth_10_06.pdf).

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/41802?channel=9>.

Comments; 12:55 Amelia Gilardi; 14:50 Courtney Gilardi

### **November 3, 2021**

Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BoardofHealth\\_11\\_03.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BoardofHealth_11_03.pdf).

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/43053?channel=9>.

Comments 7:17 Amelia Gilardi; 10:04 Courtney Gilardi.

### **December 1, 2021**

Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BoardofHealth\\_12\\_01.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BoardofHealth_12_01.pdf).

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/43228?channel=9>.

Comments; 9:20 Amelia Gilardi; 12:43 Courtney Gilardi.

### **February 2, 2022- Cease and desist unanimously voted on**

Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BoardofHealth\\_02\\_02.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BoardofHealth_02_02.pdf).

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/43842?channel=9>.

Comments; 1:30 Amelia Gilardi; 4:30 Courtney Gilardi; 9:00 Gareth Coco; 11:10 Scott Barrow  
13:00 Ann Carey; 14:40 William Coe; 16:50 Judy Scago; 18:00 Peter Sibner.

### **February 23, 2022-Executive session for cease and desist order- order upheld**

Agenda;[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BoardofHealth\\_02\\_02.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BoardofHealth_02_02.pdf).

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/44040?channel=9>.

Comments; 1:30 Amelia Gilardi; 4:35 Courtney Gilardi; 8:35 Gareth Coco; 11:21 Ann Carey reading Elaine Ireland testimony ; 15:10 Diane Sheldon; 18:40 Charlie Herzig ; 22:40 William Coe; 25:40 Susan May; 47:00 Executive Session ends and order is upheld.

**March 16, 2022-Second executive session for the cease and desist order**

Agenda:[https://cms2files.revize.com/pittsfieldma/calendar\\_app/docs/Boards\\_Commissions\\_Calendar/Board of Health/BOH\\_03\\_16.pdf](https://cms2files.revize.com/pittsfieldma/calendar_app/docs/Boards_Commissions_Calendar/Board_of_Health/BOH_03_16.pdf)

Meeting link; <https://watch.pittsfieldtv.net/CablecastPublicSite/show/44241?channel=9> 01:45 Courtney Gilardi; Cell tower discussion (at end) 1:16-1:22 Deanna Ruffer & City Solicitor Pagnotta propose a cell tower monitoring app to measure daily emissions. Brad Gordon says that is not useful as we know this is biological harm and not thermal harm.

**Additional Testimony at City Board Meetings**

*Pittsfield residents and scientific experts testified at numerous City Council meetings as well as other City Board Meetings providing testimony on harm.*

**November 5, 2020 Community Development Board Meeting**

[Pittsfield Community Development Board - November 5, 2020](#)

Topic: Cell towers setbacks: Open callers- Courtney Gilardi; Charlie Herzig 16:23; Paul Dalton 35:00; Cecelia Doucette; Dr. Magda Havas; Courtney Gilardi;

**Community Development Board December 1, 2020**

<https://watch.pittsfieldtv.net/CablecastPublicSite/show/37825?channel=9>

Theodora Scarato; Dr. Martha Herbert; Attorney Andrew Campanelli; State Representative Tricia Farley Bouvier 45:00; Amelia Gilardi 51:04, Paul Dalton

Certified and Regular Mail: [7021-0350-0000-4282-0554](tel:7021-0350-0000-4282-0554) (Pittsfield Cellular Telephone Company, Atty. Ellen W. Freyman)

Certified and Regular Mail: [7021-0350-0000-4282-0547](tel:7021-0350-0000-4282-0547) (Pittsfield Cellular Telephone Company, Mark J. Esposito, Esq.)

Certified and Regular Mail: [7021-0350-0000-4282-0530](tel:7021-0350-0000-4282-0530) (Farley White South Street, LLC, Roger W. Altreuter, Manager)

ORDERED by unanimous vote of the Pittsfield Board of Health on April 7, 2022

Roberta Orsi, MS, RN, CCP, Chairperson

Kimberly Loring, PMHNP-BC

Steve Smith, MA

Brad Gordon, JD

Jeffery A. Leppo, MD – Not Present-Did Not Participate

**2022**

# **5G, 4G CELL TOWER RADIATION**

**A REGULATORY GAP**

**[WWW.EHTRUST.ORG](http://WWW.EHTRUST.ORG)**

# THE NEED FOR ACCOUNTABILITY ON WIRELESS SAFETY

## EXPERT VOICES



"The National Toxicology Program studies clearly showed that non-ionizing cell phone radiofrequency radiation can cause cancers and other adverse health effects. An important lesson that should be learned is that we cannot assume any current or future wireless technology such as 5G is safe without adequate testing."

**-Ronald Melnick PhD 28 year scientist at National Institutes of Health**

"I recommend public health organizations raise awareness and educate the public on why and how to reduce our daily exposure to wireless radio frequency radiation. Protective public health policy is needed now. It is time for regulatory bodies to fully evaluate the research and develop science based exposure limits that truly protect the public and the environment."

**-Linda S. Birnbaum, PhD, Former Director, National Institute of Environmental Health Sciences and National Toxicology Program of the National Institutes of Health.**

"Now we have 5G rolling out in massive quantities, without due diligence to determine are these sources of radiation safe not only for humans but for wildlife. And the answer is, no, they are not."

**-Albert M. Manville II, Ph.D. Adjunct Professor, Johns Hopkins University, Wildlife Biologist (17 years), retired from Division of Migratory Bird Management, U.S. Fish & Wildlife Service**

"Given the human, animal and experimental evidence, I assert that, to a reasonable degree of scientific certainty, the probability that RF exposure causes gliomas and neuromas is high."

**-Christopher Portier PhD former Director of the United States National Center for Environmental Health at the CDC, former Director of the U.S. Agency for Toxic Substances and Disease Registry.**

"We should not wait to protect children's brains. The science is now clear and compelling indicating that wireless technology is harmful to health, especially to for children. Wireless radiation is repeating the history of lead, tobacco and DDT."

**-Devra Davis PhD, MPH, President of Environmental Health Trust, founding director of the Board on Environmental Studies and Toxicology of the U.S. National Research Council, National Academy of Sciences, and a member of the team of the Intergovernmental Panel on Climate Change scientists who were awarded the Nobel Peace Prize in 2007**

# A REGULATORY GAP

## No Federal Agency Ensuring Cell Tower Wireless Safety

There is no U.S. government agency with oversight for cell tower radiation health effects: no research reviews, no reports, no environmental monitoring, no risk mitigation and no post market health surveillance for the daily, full body radio-frequency (RF) radiation exposure from cell towers.



"The FDA does not regulate cell towers or cell tower radiation. Therefore, the FDA has no studies or information on cell towers to provide in response to your questions."

**-Ellen Flannery, Director, FDA Policy Center for Devices and Radiological Health to a California mother with a cell tower on her street who asked the FDA about safety, July 11, 2022**



"As a Federal research agency, the NCI is not involved in the regulation of radio frequency telecommunications infrastructure and devices, nor do we make recommendations for policies related to this technology"

**-National Cancer Institute letter to Denise Ricciardi, member of the New Hampshire State Commission on 5G, July 30, 2020**



The ACS does "not have any official position or statement on whether or not radiofrequency radiation from cell phones, cell phones towers, or other sources is a cause of cancer."

**-American Cancer Society Website**



"EPA's last review was in the 1984 document Biological Effects of Radiofrequency Radiation. The EPA does not currently have a funded mandate for radiofrequency matters."

**-Lee Ann B. Veal Director, EPA Radiation Protection Division Office of Radiation and Indoor Air, July 8, 2020 Letter to Theodora Scarato**



Fact: There are no scientific reports by the CDC on cell tower radiation safety, nor does the agency have staff with expertise monitoring the science and evaluating risk. Public information requests found that **several CDC website pages on radio frequency were found to be drafted with a wireless industry consultant.**



"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." **- U.S. Department of Interior Letter to FCC, 2014**



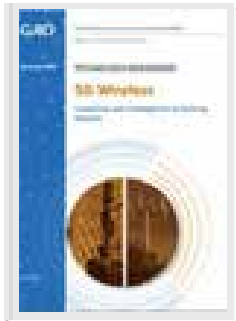
**Fact: The World Health Organization (WHO) EMF Project has not reviewed the science since 1993.** The WHO webpages on cell phones and cell towers are not based on a published scientific review. The WHO EMF Project webpages were written by a scientist who **used wireless industry money** to start the WHO EMF Project and who is now a consultant to industry. **In contrast, the WHO International Agency for Research on Cancer (a separate WHO entity vetted for conflicts of interest) determined RF radiation to be a Class 2 B "possible" carcinogen in 2011.** Many scientists now state **the evidence showing cancer has increased.**

*Blue text is hyperlinked to source.*



# Government Accountability Office Reports

These GAO reports confirm zero review of the totality of the science and bust the industry myth that 5G will bridge the digital divide.



## 2020: 5G Wireless: Capabilities and Challenges for an Evolving Network

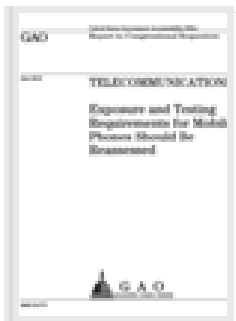
"Because there is a large and evolving body of relevant research, it is important that the results be regularly synthesized for Congress and the public."

"The FCC relies on the FDA as well as other organizations—principally IEEE and the National Council on Radiation Protection and Measurements (NCRP)—to review scientific research and provide recommendations for setting RF safety standards. **However, each of these organizations has only reviewed a subset of the relevant research...**"



## 2020 5G DEPLOYMENT: FCC Needs Comprehensive Strategic Planning to Guide Its Efforts

"The experts GAO convened also stated that 5G deployment would likely exacerbate disparities in access to telecommunications services, known as the "digital divide."



## 2012 TELECOMMUNICATIONS: Exposure and Testing Requirements for Mobile Phones Should Be Reassessed

"By not formally reassessing its current limit, FCC cannot ensure it is using a limit that reflects the latest research on RF energy exposure..."

"Some consumers may use mobile phones against the body, which FCC does not currently test, and could result in RF energy exposure higher than the FCC limit."

# 5G, CELL TOWERS AND WIRELESS LEGAL & LIABILITY ISSUES



"Electromagnetic field exclusions" are clear and common in most insurance companies. It is applied as a market standard. This exclusion serves to exclude cover for illnesses caused by long-term EMF (non-ionizing radiation) exposure."

## **-Complete Markets "Electromagnetic Fields Liability Insurance"**

"Electro-magnetic signals emitted by mobile devices and base stations may be found to pose health risks, with potential impacts including: changes to national legislation, a reduction in mobile phone usage or litigation."

## **-Vodafone 2017 Report ranks EMF as a "Principal Risk with "High" impact.**

## **Swiss Re Institute (2019)**

5G mobile networks are classified as a "high," "off-the-leash" risk. "Existing concerns regarding potential negative health effects from electromagnetic fields (EMF) are only likely to increase. An uptick in liability claims could be a potential long-term consequence" and "[a]s the biological effects of EMF in general and 5G in particular are still being debated, potential claims for health impairments may come with a long latency."

## **Crown Castle**

"We cannot guarantee that claims relating to radio frequency emissions will not arise in the future or that the results of such studies will not be adverse to us...If a connection between radio frequency emissions and possible negative health effects were established, our operations, costs, or revenues may be materially and adversely affected. We currently do not maintain any significant insurance with respect to these matters."

## **Portland Oregon Public School Insurance**

"Exclusions: This insurance does not apply to: Bodily injury, personal injury, advertising injury, or property damage arising directly or indirectly out of, resulting from, caused or contributed to by electromagnetic radiation, provided that such loss, cost or expense results from or is contributed to by the hazardous properties of electromagnetic radiation."

## **Verizon 10-K**

"our wireless business also faces personal injury and wrongful death lawsuits relating to alleged health effects of wireless phones or radio frequency transmitters. We may incur significant expenses in defending these lawsuits. In addition, we may be required to pay significant awards or settlements."

## **Verizon Total Mobile Protection Plan (pg 10)**

"Pollution" is defined as "any solid, liquid, gaseous, or thermal irritant or contaminant including smoke, vapor, soot, fumes, acid, alkalis, chemicals, artificially produced electric fields, magnetic field, electromagnetic field, sound waves, microwaves, and all artificially produced ionizing or nonionizing radiation and/or waste."

# Cell Tower Companies Warn Shareholders of Risk From Cell Tower Radiation

## Why Don't They Warn Families Living Near Cell Towers?



### **Verizon 10-K Report**

"our wireless business also faces personal injury and wrongful death lawsuits relating to alleged health effects of wireless phones or radio frequency transmitters. We may incur significant expenses in defending these lawsuits. In addition, we may be required to pay significant awards or settlements."



### **Crown Castle 10-K Report**

"We cannot guarantee that claims relating to radio frequency emissions will not arise in the future or that the results of such studies will not be adverse to us...If a connection between radio frequency emissions and possible negative health effects were established, our operations, costs, or revenues may be materially and adversely affected. We currently do not maintain any significant insurance with respect to these matters."



### **AT&T 10-K Report**

"In the wireless area, we also face current and potential litigation relating to alleged adverse health effects on customers or employees who use such technologies including, for example, wireless devices. We may incur significant expenses defending such suits or government charges and may be required to pay amounts or otherwise change our operations in ways that could materially adversely affect our operations or financial results."



### **T- MOBILE 10-K Report**

"Our business could be adversely affected by findings of product liability for health or safety risks from wireless devices and transmission equipment, as well as by changes to regulations or radio frequency emission standards."

# Cell Tower Companies Warn Shareholders of Risk From Cell Tower Radiation

## Why Don't They Warn Families Living Near Cell Towers?



**AMERICAN TOWER®**

### **American Tower 10-K**

"If a scientific study or court decision resulted in a finding that radio frequency emissions pose health risks to consumers, it could negatively impact our tenants and the market for wireless services, which could materially and adversely affect our business, results of operations or financial condition. We do not maintain any significant insurance with respect to these matters."

**NOKIA**  
CONNECTING PEOPLE

### **Nokia 10-K**

"Although our products are designed to meet all relevant safety standards and other recommendations and regulatory requirements globally, we cannot guarantee we will not become subject to product liability claims or be held liable for such claims, which could have a material adverse effect on us."



### **Qualcomm 10-K**

"If wireless handsets pose health and safety risks, we may be subject to new regulations, and demand for our products and those of our licensees and customers may decrease."



### **Ericsson Annual Report**

"Any perceived risk or new scientific findings of adverse health effects from mobile communication devices and equipment could adversely affect us through a reduction in sales or through liability claims."

# THE URGENT NEED FOR SAFER TECHNOLOGY

## EXPERT VOICES

"I am calling on my industry to bring safer technology to market. The current implementation of technology is not safe. Take a good look at the science. This is about our children's future. Do not be lulled into believing that 25-year-old standards can protect the youngest and most vulnerable. They simply cannot."

**- Frank Clegg, Former President of Microsoft Canada, CEO of Canadians for Safe Technology**

"A moratorium is urgently needed on the implementation of 5G for wireless communication."

**-Lennart Hardell, MD, PhD , advisory to World Health Organization international Agency for Research on Cancer, Department of Oncology, University Hospital, Örebro, Sweden (retired) , leads the Environment and Cancer Research Foundation**

"The evidence indicating wireless is carcinogenic has increased and can no longer be ignored. If the World Health Organization International Agency for Research on Cancer were to meet to review all of the evidence, we believe the weight of evidence supports a new determination- that wireless radiofrequency radiation is a human carcinogen."

**-Anthony B. Miller MD, Professor Emeritus, Dalla Lana School of Public Health of the University of Toronto. Former Senior Epidemiologist for the International Agency for Research on Cancer and former Director of the Epidemiology Unit of the National Cancer Institute of Canada**

"Most parents believe that cellphones were safety-tested before they came on the market. We assume that our federal health and environmental agencies regularly review the latest research and ensure that these incredible devices are safe. They do not. Children are not little adults. As we sadly learned with early childhood lead exposures leaving long-lasting impairments, the developing brain is particularly susceptible."

**-Jerome Paulson, MD , Professor Emeritus, George Washington University, Milliken School of Public Health, former Chair of American Academy of Pediatrics Committee on Environmental Health**

"The exposure levels of the Federal Communications Commission are totally outdated and do not protect the health of the public, especially of children. I urge you to take strong and active steps to reduce exposure of children and staff to excessive levels of radiofrequency EMFS within your schools."

**-David O. Carpenter, M.D. Director, Institute for Health and the Environment University at Albany**



# 5G, CELL TOWERS AND WIRELESS LEGAL & LIABILITY ISSUES



**When a new cell tower or wireless network is proposed the first question to ask is "Do you have insurance for damages from long-term exposure to the radiofrequency radiation (RFR)?" Usually the answer is "No."**

## **An Uninsurable Risk?**

- Insurers rank wireless, cell tower, and 5G RFR non-ionizing electromagnetic radiation as a "high" risk, comparing the issue to lead and asbestos.
- Most insurance plans have "electromagnetic field exclusions" and do not insure for long-term RFR damages.
- Wireless RFR and non-ionizing electromagnetic radiation are defined as a type of "pollution" by wireless companies themselves.
- US mobile operators have been unable to get insurance to cover liabilities related to damages from long-term RFR exposure.
- Wireless companies warn their shareholders of RFR risk but do not warn users of their products, nor do the companies warn the people exposed to emissions from their infrastructure.



## CITIES AND TOWNS WITH STRONG ORDINANCES

# SETBACKS FOR CELL ANTENNAS



**Many communities have setbacks for cell towers and small cells.**

**Shelburne, MA:** 3,000 feet for schools and 1,500 feet of homes; no new wireless antennas in residential zones

**Copake, NY:** 1,500 feet from homes, schools, churches, or other buildings containing dwelling units

**Sallisaw, OK:** No commercial wireless telecommunications towers within 1,500 of homes.

**Calabasas, CA:** No "Tier 2" wireless telecommunications facilities within 1,000 feet of homes and schools

**Bedford, NH:** 750 feet from residentially-zoned property

**Scarsdale, NY:** No wireless facilities within 500 feet from homes, schools, parks, and houses of worship

**Walnut City, California:** 1,500 feet

**Stockbridge, Massachusetts:** 1,000 feet

**San Diego County California:** 1,000 feet (small cells)

**Bar Harbor Maine:** 1500 setback for schools

### School Boards

**Palo Alto, California:** School Board supports the City of Palo Alto immediately establishing local municipal zoning setback rules of 1500 feet or more from an operating wireless transmitter and a school site.

**West Linn-Wilsonville Oregon School Board** prohibits cell towers on school property.

**Los Angeles California School District:** Resolutions opposing cell towers on school property and a cautionary level" for radiofrequency radiation 10,000 times lower than FCC limits.

## Electromagnetic Fields: A Hazard to Your Health?

In recent years, concern has increased about exposure to radio frequency electromagnetic radiation emitted from cell phones and phone station antennae. An Egyptian study confirmed concerns that living nearby mobile phone base stations increased the risk for developing:

- Headaches
- Memory problems
- Dizziness
- Depression
- Sleep problems

Short-term exposure to these fields in experimental studies have not always shown negative effects, but this does not rule out cumulative damage from these fields, so larger studies over longer periods are needed to help understand who is at risk. In large studies, an association has been observed between symptoms and exposure to these fields in the everyday environment.

**Last Updated** 12/28/2012

**Source** American Academy of Pediatrics (Copyright © 2012)



### Environmental Pollution

journal homepage: [www.elsevier.com/locate/envpol](http://www.elsevier.com/locate/envpol)



## Thermal and non-thermal health effects of low intensity non-ionizing radiation: An international perspective\*

Dominique Belpomme <sup>a,b,1</sup>, Lennart Hardell <sup>a,c,d,2</sup>, Igor Belyaev <sup>a,d,e,3</sup>, Ernesto Burgio <sup>a,f</sup>, David O. Carpenter <sup>a,g,h,4</sup>

<sup>a</sup> European Cancer Environment Research Institute, Brussels, Belgium

<sup>b</sup> Paris V University Hospital, Paris, France

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### ABSTRACT

Exposure to low frequency and radiofrequency electromagnetic fields at low intensities poses a significant health hazard that has not been adequately addressed by national and international organizations such as the World Health Organization. There is strong evidence that excessive exposure to mobile phone-frequencies over long periods of time increases the risk of brain cancer both in humans and animals. The mechanism(s) responsible include induction of reactive oxygen species, gene expression alteration and DNA damage through both epigenetic and genetic processes. In vivo and in vitro studies demonstrate adverse effects on male and female reproduction, almost certainly due to generation of reactive oxygen species. There is increasing evidence the exposures can result in neurobehavioral decrements and that some individuals develop a syndrome of "electro-hypersensitivity" or "microwave illness", which is one of several syndromes commonly categorized as "idiopathic environmental intolerance". While the symptoms are non-specific, new biochemical indicators and imaging techniques allow diagnosis that excludes the symptoms as being only psychosomatic. Unfortunately standards set by most national and international bodies are not protective of human health. This is a particular concern in children, given the rapid expansion of use of wireless technologies, the greater susceptibility of the developing nervous system, the hyperconductivity of their brain tissue, and greater penetration of radiofrequency radiation relative to head size and their potential for a longer lifetime exposure.

The 2022 study **"Measurements of radiofrequency electromagnetic fields, including 5G, in the city of Columbia, South Carolina, USA"** published in World Academy of Sciences Journal authored by Tarmo Koppel and Lennart Hardell MD of the Environment and Cancer Research Foundation found the highest RF exposure readings were registered close to cell phone base station antennas mounted on top of utility poles, street lamps or traffic lights.



Figure 7. Gervais Street: Cell phone base station antenna placed close to street level and causing high exposure to pedestrians and nearby café visitors (exposure scenario illustration). The antenna appears camouflaged and seemingly part of a utility pole. The measurer only discovered the antenna due to the high radiofrequency levels in the vicinity.



Figure 8. Gervais Street: Another cell phone base station antenna close to street level and causing high exposure to pedestrians (exposure scenario illustration). Note the antenna appears undistinguishable from the utility pole an unnoticeable between the trees.

# Health impact of 5G

Current state of knowledge of 5G-related carcinogenic and reproductive/developmental hazards as they emerge from epidemiological studies and in vivo experimental studies

The upcoming deployment of 5G mobile networks will allow for significantly faster mobile broadband speeds and increasingly extensive mobile data usage. Technical innovations include a different transmission system (MIMO: use of multiple-input and multiple-output antennas), directional signal transmission or reception (beamforming), and the use of other frequency ranges. At the same time, a change is expected in the exposure to electromagnetic fields (EMF) of humans and the environment. In addition to those used to date, the 5G pioneer bands identified at EU level have frequencies of 700 MHz, 3.6 GHz (3.4 to 3.8 GHz) and 26 GHz (24.25 to 27.5 GHz). The first two frequencies (FR1) are similar to those used for 2G to 4G technologies and have been investigated in both epidemiological and experimental studies for different end points (including carcinogenicity and reproductive/developmental effects), while 26 GHz (FR2) and higher frequencies have not been adequately studied for the same end points.

The International Agency for Research on Cancer (IARC) classified radiofrequency (RF) EMF as 'possibly carcinogenic to humans' (Group 2B) and recently recommended RF exposure for re-evaluation 'with high priority' (IARC, 2019). Since 2011 a great number of studies have been performed, both epidemiological and experimental. The present review addresses the current knowledge regarding both carcinogenic and reproductive/developmental hazards of RF as exploited by 5G. There are various *in vivo* experimental and epidemiological studies on RF at a lower frequency range (450 to 6000 MHz), which also includes the frequencies used in previous generations' broadband cellular networks, but very few (and inadequate) on the higher frequency range (24 to 100 GHz, centimetre/MMW).

The review shows: 1) 5G lower frequencies (700 and 3 600 MHz): a) limited evidence of carcinogenicity in epidemiological studies; b) sufficient evidence of carcinogenicity in experimental bioassays; c) sufficient evidence of reproductive/developmental adverse effects in humans; d) sufficient evidence of reproductive/developmental adverse effects in experimental animals; 2) 5G higher frequencies (24.25-27.5 GHz): the systematic review found no adequate studies either in humans or in experimental animals.

Conclusions: 1) cancer: FR1 (450 to 6 000 MHz): EMF are probably carcinogenic for humans, in particular related to gliomas and acoustic neuromas; FR2 (24 to 100 GHz): no adequate studies were performed on the higher frequencies; 2) reproductive developmental effects: FR1 (450 to 6 000 MHz): these frequencies clearly affect male fertility and possibly female fertility too. They may have possible adverse effects on the development of embryos, fetuses and newborns; FR2 (24 to 100 GHz): no adequate studies were performed on non-thermal effects of the higher frequencies.



## Very high radiofrequency radiation at Skeppsbron in Stockholm, Sweden from mobile phone base station antennas positioned close to pedestrians' heads

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### ABSTRACT

In urban environment there is a constant increase of public exposure to radiofrequency electromagnetic fields from mobile phone base stations. With the placement of mobile phone base station antennas radiofrequency hotspots emerge. This study investigates an area at Skeppsbron street in Stockholm, Sweden with an aggregation of base station antennas placed at low level close to pedestrians' heads. Detailed spatial distribution measurements were performed with 1) a radiofrequency broadband analyzer and 2) a portable exposimeter. The results display a greatly uneven distribution of the radiofrequency field with hotspots. The highest spatial average across all quadrat cells was  $12.1 \text{ V m}^{-1}$  ( $388 \text{ mW m}^{-2}$ ), whereas the maximum recorded reading from the entire area was  $31.6 \text{ V m}^{-1}$  ( $2648 \text{ mW m}^{-2}$ ). Exposimeter measurements show that the majority of exposure is due to mobile phone downlink bands. Most dominant are 2600 and 2100 MHz bands used by 4G and 3G mobile phone services, respectively. The average radiofrequency radiation values from the earlier studies show that the level of ambient RF radiation exposure in Stockholm is increasing. This study concluded that mobile phone base station antennas at Skeppsbron, Stockholm are examples of poor radiofrequency infrastructure designs which brings upon highly elevated exposure levels to popular seaside promenade and a busy traffic street.

Studies from recent decades have shown elevated health risk under long term exposure to such highly elevated radiofrequency fields.

A review by Kharana et al. (2010) found in 80% of the available studies neurobehavioral symptoms or cancer in populations living at distances <500 m from base stations (Kharana et al., 2010). In another review exposure from base stations and other antenna arrays showed changes in immunological and reproductive systems as well as DNA double strand breaks, influence on calcium movement in the heart and increased proliferation rates in human astrocytoma cancer cells (Levitt and Lai, 2010).

When a GSM 900 MHz base station was installed in the village Rimlach in Germany it had an influence on the neurotransmitters adrenaline, noradrenaline, dopamine and phenylethylamine (Bachner and Eger, 2011). Influence on cortisol and thyroid hormones in people living near base stations was shown in other studies (Angerer et al., 2010; Isakander et al., 2012).

Dode et al. (2011) compared base station (BS) clusters and cases of deaths by neoplasia in the Belo Horizonte municipality, Minas Gerais state, Brazil, from 1996 to 2006. In their study largest electric field was  $12.4 \text{ V m}^{-1}$  and the smallest was  $0.4 \text{ V m}^{-1}$ . They found cancer-related death rates be higher close to base stations. This finding confirmed earlier findings by Eger (Eger et al., 2004).

In a study from India, genetic damage using the single cell gel electrophoresis (comet) assay was assessed in peripheral blood leukocytes of individuals residing in the vicinity of a mobile phone base station and comparing it to that in healthy controls. Genetic damage parameters of DNA migration length, damage frequency, and damage index were significantly ( $p < 0.001$ ) elevated in the sample group compared to respective values in healthy controls (Gandhi et al., 2014).

The effect of RF radiation among 20 subjects living close to mobile phone base station compared with 20 subjects living with a distance of about 1 km was studied (Singh et al., 2016). The authors concluded that: "It was unveiled that a majority of the subjects who were residing near the mobile base station complained of sleep disturbances, headache, dizziness, irritability, concentration difficulties, and hypertension. A majority of the study subjects had significantly lesser stimulated salivary secretion ( $p < 0.01$ ) as compared to the control subjects."



Fig. 3. Street view on the Skeppsbron street with some of the mobile phone base station antennas pointed out with a circle; note the low placement of the antennas, where microwaves irradiate the pedestrian at close range.

Zothursiaman et al. (2017) in India inspected DNA damage and antioxidant status in cultured human peripheral blood lymphocytes (HPBLs) of individuals residing in the vicinity of mobile phone base stations and compared it with healthy controls living further away. Analyses of data from the exposed group ( $n = 40$ ), residing within perimeter of 80 m of mobile base stations, showed statistically significantly ( $p < 0.0001$ ) higher frequency of micronuclei when compared to the control group, residing 300 m away from the mobile base station.

The Ramazzini Institute findings (Falcioni et al., 2018) are supported by the results in the USNTP study on rats and mice exposed to RF radiation (National Toxicology Program, 2018a, 2018b). A clear evidence of increased incidence of heart Schwannoma and some evidence of glioma and tumours in the adrenal medulla in male rats was found according to the expert panel, for further discussion see Hardell and Carlberg (2019).

The study concluded that Skeppsbron street mobile phone base station antennas are examples of a poor radiofrequency infrastructure design with mobile phone base station antennas positioned into close range to the general public which brings upon high exposure levels. Given the low placement of the antennas (height from the street floor), the highest exposure was often registered at pedestrian head level. Given that head is one of most vulnerable parts of the body, these placements by mobile telephony service providers put pedestrians into unnecessary risk. Position of these antennas, can pose a health risk to people at close range. This is especially critical for people at particular risk, including persons with medical implants, pregnant women or chronically ill persons.

Based on the latest scientific literature regarding RF exposure and adverse health effects, this study recommends repositioning such base station antennas to areas away from the nearby inhabitants, workers and the general public. Alternatively, very low power antennas may also be considered to reduce the exposure. Occupational exposure of people

# Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays

B. Blake Levitt and Henry Lai

**Abstract:** The siting of cellular phone base stations and other cellular infrastructure such as roof-mounted antenna arrays, especially in residential neighborhoods, is a contentious subject in land-use regulation. Local resistance from nearby residents and landowners is often based on fears of adverse health effects despite reassurances from telecommunications service providers that international exposure standards will be followed. Both anecdotal reports and some epidemiology studies have found headaches, skin rashes, sleep disturbances, depression, decreased libido, increased rates of suicide, concentration problems, dizziness, memory changes, increased risk of cancer, tremors, and other neurophysiological effects in populations near base stations. The objective of this paper is to review the existing studies of people living or working near cellular infrastructure and other pertinent studies that could apply to long-term, low-level radiofrequency radiation (RFR) exposures. While specific epidemiological research in this area is sparse and contradictory, and such exposures are difficult to quantify given the increasing background levels of RFR from myriad personal consumer products, some research does exist to warrant caution in infrastructure siting. Further epidemiology research that takes total ambient RFR exposures into consideration is warranted. Symptoms reported today may be classic microwave sickness, first described in 1978. Non-ionizing electromagnetic fields are among the fastest growing forms of environmental pollution. Some extrapolations can be made from research other than epidemiology regarding biological effects from exposures at levels far below current exposure guidelines.



Clinical Biochemistry

Volume 45, Issues 1–2, January 2012, Pages 157–161



Case Report

## How does long term exposure to base stations and mobile phones affect human hormone profiles?

Emad F. Elkander, A. R. Selim F. Eldeif, Ahmed A. Abd-Rabou

### Objectives

This study is concerned with assessing the role of exposure to radio frequency radiation (RFR) emitted either from mobiles or base stations and its relations to human's hormone profiles.

### Results

This study showed significant decrease in volunteers' ACTH, cortisol, thyroid hormones, prolactin for young females, and testosterone levels.



BENTHAM  
SCIENCE

# Low Intensity Electromagnetic Fields Act *via* Voltage-Gated Calcium Channel (VGCC) Activation to Cause Very Early Onset Alzheimer's Disease: 18 Distinct Types of Evidence

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**Abstract:** Electronically generated electromagnetic fields (EMFs), including those used in wireless communication such as cell phones, Wi-Fi and smart meters, are coherent, producing very high electric and magnetic forces, which act on the voltage sensor of voltage-gated calcium channels to produce increases in intracellular calcium  $[Ca^{2+}]_i$ . The calcium hypothesis of Alzheimer's disease (AD) has shown that each of the important AD-specific and nonspecific causal elements is produced by excessive  $[Ca^{2+}]_i$ .  $[Ca^{2+}]_i$  acts in AD *via* excessive calcium signaling and the peroxynitrite/oxidative stress/inflammation pathway, which are each elevated by EMFs. An apparent vicious cycle in AD involves amyloid-beta protein (A $\beta$ ) and  $[Ca^{2+}]_i$ . Three types of epidemiology suggest EMF causation of AD, including early onset AD. Extensive animal model studies show that low intensity EMFs cause neurodegeneration, including AD, with AD animals having elevated levels of A $\beta$ , amyloid precursor protein and BACE1. Rats exposed to pulsed EMFs every day are reported to develop universal or near universal very early onset neurodegeneration, including AD; these findings are superficially similar to humans with digital dementia. EMFs producing modest increases in  $[Ca^{2+}]_i$  can also produce protective, therapeutic effects. The therapeutic pathway and peroxynitrite pathway inhibit each other. A summary of 18 different findings is provided, which collectively provide powerful evidence for EMF causation of AD. The author is concerned that smarter, more highly pulsed "smart" wireless communication may cause widespread very, very early onset AD in human populations.

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## The roles of intensity, exposure duration, and modulation on the biological effects of radiofrequency radiation and exposure guidelines

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<sup>a</sup>Department of Bioengineering, University of Washington, Seattle, WA, USA; <sup>b</sup>New Preston, CT, USA

### ABSTRACT

In this paper, we review the literature on three important exposure metrics that are inadequately represented in most major radiofrequency radiation (RFR) exposure guidelines today: intensity, exposure duration, and signal modulation. Exposure intensity produces unpredictable effects as demonstrated by nonlinear effects. This is most likely caused by the biological system's ability to adjust and compensate but could lead to eventual biologic breakdown after prolonged exposure. A review of 112 low-intensity studies reveals that biological effects of RFR could occur at a median specific absorption rate of 0.0165 W/kg. Intensity and exposure duration interact since the dose of energy absorbed is the product of intensity and time. The result is that RFR behaves like a biological "stressor" capable of affecting numerous living systems. In addition to intensity and duration, man-made RFR is generally modulated to allow information to be encrypted. The effects of modulation on biological functions are not well understood. Four types of modulation outcomes are discussed. In addition, it is invalid to make direct comparisons between thermal energy and radiofrequency electromagnetic energy. Research data indicate that electromagnetic energy is more biologically potent in causing effects than thermal changes. The two likely function through different mechanisms. As such, any current RFR exposure guidelines based on acute continuous-wave exposure are inadequate for health protection.

### ARTICLE HISTORY

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### KEYWORDS

Radiofrequency radiation (RFR); intensity; duration of exposure; modulation; specific absorption rate (SAR); biological effects

BENTHAM  
SCIENCE

# Low Intensity Electromagnetic Fields Act *via* Voltage-Gated Calcium Channel (VGCC) Activation to Cause Very Early Onset Alzheimer's Disease: 18 Distinct Types of Evidence

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**Abstract:** Electronically generated electromagnetic fields (EMFs), including those used in wireless communication such as cell phones, Wi-Fi and smart meters, are coherent, producing very high electric and magnetic forces, which act on the voltage sensor of voltage-gated calcium channels to produce increases in intracellular calcium  $[Ca^{2+}]_i$ . The calcium hypothesis of Alzheimer's disease (AD) has shown that each of the important AD-specific and nonspecific causal elements is produced by excessive  $[Ca^{2+}]_i$ .  $[Ca^{2+}]_i$  acts in AD *via* excessive calcium signaling and the peroxynitrite/oxidative stress/inflammation pathway, which are each elevated by EMFs. An apparent vicious cycle in AD involves amyloid-beta protein (A $\beta$ ) and  $[Ca^{2+}]_i$ . Three types of epidemiology suggest EMF causation of AD, including early onset AD. Extensive animal model studies show that low intensity EMFs cause neurodegeneration, including AD, with AD animals having elevated levels of A $\beta$ , amyloid precursor protein and BACE1. Rats exposed to pulsed EMFs every day are reported to develop universal or near universal very early onset neurodegeneration, including AD; these findings are superficially similar to humans with digital dementia. EMFs producing modest increases in  $[Ca^{2+}]_i$  can also produce protective, therapeutic effects. The therapeutic pathway and peroxynitrite pathway inhibit each other. A summary of 18 different findings is provided, which collectively provide powerful evidence for EMF causation of AD. The author is concerned that smarter, more highly pulsed "smart" wireless communication may cause widespread very, very early onset AD in human populations.

ELECTROMAGNETIC BIOLOGY AND MEDICINE  
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## REVIEW

## Genetic effects of non-ionizing electromagnetic fields

Henry Lai

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### ABSTRACT

This is a review of the research on the genetic effects of non-ionizing electromagnetic field (EMF), mainly on radiofrequency radiation (RFR) and static and extremely low frequency EMF (ELF-EMF). The majority of the studies are on genotoxicity (e.g., DNA damage, chromatin conformation changes, etc.) and gene expression. Genetic effects of EMF depend on various factors, including field parameters and characteristics (frequency, intensity, wave-shape), cell type, and exposure duration. The types of gene expression affected (e.g., genes involved in cell cycle arrest, apoptosis and stress responses, heat-shock proteins) are consistent with the findings that EMF causes genetic damages. Many studies reported effects in cells and animals after exposure to EMF at intensities similar to those in the public and occupational environments. The mechanisms by which effects are induced by EMF are basically unknown. Involvement of free radicals is a likely possibility. EMF also interacts synergistically with different entities on genetic functions. Interactions, particularly with chemotherapeutic compounds, raise the possibility of using EMF as an adjuvant for cancer treatment to increase the efficacy and decrease side effects of traditional chemotherapeutic drugs. Other data, such as adaptive effects and mitotic spindle aberrations after EMF exposure, further support the notion that EMF causes genetic effects in living organisms.

### ARTICLE HISTORY



Received 22 September 2020  
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### KEYWORDS

Radiofrequency radiation; static/extremely low frequency EMF; genetic effects; genotoxicity; gene expression

Article

# The Effect of Continuous Low-Intensity Exposure to Electromagnetic Fields from Radio Base Stations to Cancer Mortality in Brazil

Nádia Cristina Pinheiro Rodrigues <sup>1,2,\*</sup> , Adilza Condessa Dode <sup>3</sup>, Mônica Kramer de Noronha Andrade <sup>1</sup> , Gisele O'Dwyer <sup>1</sup>, Denise Leite Maia Monteiro <sup>4</sup>, Inês Nascimento Carvalho Reis <sup>1</sup>, Roberto Pinheiro Rodrigues <sup>5,6</sup>, Vera Cecília Frossard <sup>1</sup> and Valéria Teresa Saraiva Lino <sup>1</sup>

**Abstract:** Background: this study aims to estimate the rate of death by cancer as a result of Radio Base Station (RBS) radiofrequency exposure, especially for breast, cervix, lung, and esophagus cancers. Methods: we collected information on the number of deaths by cancer, gender, age group, gross domestic product per capita, death year, and the amount of exposure over a lifetime. We investigated all cancer types and some specific types (breast, cervix, lung, and esophagus cancers). Results: in capitals where RBS radiofrequency exposure was higher than 2000/antennas-year, the average mortality rate was 112/100,000 for all cancers. The adjusted analysis showed that, the higher the exposure to RBS radiofrequency, the higher cancer mortality was. The highest adjusted risk was observed for cervix cancer (rate ratio = 2.18). The spatial analysis showed that the highest RBS radiofrequency exposure was observed in a city in southern Brazil that also showed the highest mortality rate for all types of cancer and specifically for lung and breast cancer. Conclusion: the balance of our results indicates that exposure to radiofrequency electromagnetic fields from RBS increases the rate of death for all types of cancer.



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Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radiofrequency field representative of a 1.8 GHz GSM base station environmental emission

## ABSTRACT

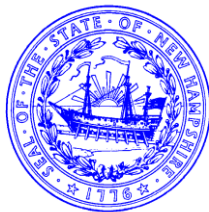
**Background:** In 2011, IARC classified radiofrequency radiation (RFR) as possible human carcinogen (Group 2B). According to IARC, animals studies, as well as epidemiological ones, showed limited evidence of carcinogenicity. In 2016, the NTP published the first results of its long-term bioassays on near field RFR, reporting increased incidence of malignant glial tumors of the brain and heart Schwannoma in rats exposed to GSM – and CDMA – modulated cell phone RFR. The tumors observed in the NTP study are of the type similar to the ones observed in some epidemiological studies of cell phone users.

**Objectives:** The Ramazzini Institute (RI) performed a life-span carcinogenic study on Sprague-Dawley rats to evaluate the carcinogenic effects of RFR in the situation of far field, reproducing the environmental exposure to RFR generated by 1.8 GHz GSM antenna of the radio base stations of mobile phone. This is the largest long-term study ever performed in rats on the health effects of RFR, including 2448 animals. In this article, we reported the final results regarding brain and heart tumors.

**Methods:** Male and female Sprague-Dawley rats were exposed from prenatal life until natural death to a 1.8 GHz GSM far field of 0, 5, 25, 50 V/m with a whole-body exposure for 19 h/day.

**Results:** A statistically significant increase in the incidence of heart Schwannomas was observed in treated male rats at the highest dose (50 V/m). Furthermore, an increase in the incidence of heart Schwann cells hyperplasia was observed in treated male and female rats at the highest dose (50 V/m), although this was not statistically significant. An increase in the incidence of malignant glial tumors was observed in treated female rats at the highest dose (50 V/m), although not statistically significant.

**Conclusions:** The RI findings on far field exposure to RFR are consistent with and reinforce the results of the NTP study on near field exposure, as both reported an increase in the incidence of tumors of the brain and heart in RFR-exposed Sprague-Dawley rats. These tumors are of the same histotype of those observed in some epidemiological studies on cell phone users. These experimental studies provide sufficient evidence to call for the re-evaluation of IARC conclusions regarding the carcinogenic potential of RFR in humans.



# State of New Hampshire

GENERAL COURT

CONCORD

## MEMORANDUM

---

**DATE:** November 1, 2020

**TO:** Honorable Christopher T. Sununu, Governor  
Honorable Stephen J. Shurtleff, Speaker of the House  
Honorable Donna Soucy, President of the Senate  
Honorable Paul C. Smith, House Clerk  
Honorable Tammy L. Wright, Senate Clerk  
Michael York, State Librarian

**FROM:** Representative Patrick Abrami, Chair

**SUBJECT:** Final Report on Commission to Study the  
Environmental and Health Effects of Evolving 5G Technology  
(RSA 12-K:12-14, HB 522, Ch. 260, Laws of 2019)

---

Pursuant to RSA 12-K:14, III, enclosed please find the Final Report of the Commission to Study the Environmental and Health Effects of Evolving 5G Technology.

If you have any questions or comments regarding this report, please do not hesitate to contact me.

I would like to thank those members of the commission who were instrumental in this study. I would also like to acknowledge all those who testified before the commission and assisted the commission in our study.

Enclosures

cc: Members of the Commission

**Final Report of the**  
**Commission to Study**  
**The Environmental and Health Effects of**  
**Evolving 5G Technology**

(HB 522, Chapter 260, Laws of 2019, RSA 12-K:12–14)

**Membership**

<u>Name</u>	<u>Organization/Representing</u>
Rep. Patrick Abrami (Chair)	NH House of Representatives
Rep. Kenneth Wells	NH House of Representatives
Rep. Gary Woods	NH House of Representatives
Sen. James Gray	NH Senate
Sen. Tom Sherman	NH Senate
Denise Ricciardi	Public
Brandon Garod, Esq.	Attorney General’s Office
Carol Miller	Department of Business and Economic Affairs
David Juvet	Business and Industry Association
Kent Chamberlin, PhD	University of New Hampshire
Bethanne Cooley	CTIA – wireless communications industry
Michele Roberge	Department of Health and Human Services
Paul Héroux, PhD	McGill University Medicine

November 1, 2020

***Members of the Commission to Study the Environmental and Health Effects of Evolving 5G technology agree to the filing of this final report by the Chairman. This action should not be construed in any way as an adoption of any position by any Commission member or state agency or organization they represent on the underlying issue of the deployment of 5G technology.***



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## INTRODUCTION

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### **Commission Responsibilities and Evolving Role**

The Commission to Study the Environmental and Health Effects of Evolving 5G Technology came about from the passage and signing into law of [HB 522](#). The Legislature, after hearing testimony of potential health risks and the political ramifications of small cell antennae being deployed on the public rights-of-way throughout New Hampshire, agreed that a Commission be formed to take a deeper look at this evolving technology. For the record, 5G stands for the 5<sup>th</sup> Generation of wireless communication. This technology utilizes frequencies in the millimeter wave range of the electromagnetic spectrum. See [Appendix A](#) for a chart showing this spectrum.

What the Commission learned early on in its work is that you cannot talk about 5G without talking about the earlier generations 3G and 4G. Then the Commission embraced the concept of the Internet of Things (IoT) which is a world in which all electronic devices communicate via electromagnetic waves. This led to discussion of routers and other internal technologies. The devices receiving and sending signals via electromagnetic waves also became part of the discussion. So as the presentations and discussions went on, the Commission concluded that all things emitting radio frequency (RF) radiation needed to be considered together because of the interaction of all these waves. We also discovered early on that 5G means something different to each of the major cellular companies ranging from how 5G antennae interact with other generation antennae to whether small cell towers in the public right-of-way will be needed. The conclusion by many experts is that 5G is a marketing concept centered around speed of data transmission using many different engineering strategies.

At the heart of the discussion was the research as to whether non-ionizing radiation causes biological effects on humans as well as other living organisms, either animal or plant. No one argues that ionizing radiation from the high energy and frequency ultraviolet, x-ray, and gamma ray end of the electromagnetic spectrum are a danger to all living things. Of concern to the Commission, and internationally, are the electromagnetic waves in the microwave range of energy and frequency. There is mounting evidence that DNA damage can occur from

radiation outside of the ionizing part of the spectrum.<sup>1, 2, 3, 4</sup> The Commission heard arguments on both sides of this issue with many now saying there are findings showing biological effects in this range. This argument gets amplified as millimeter waves within the microwave range are beginning to be utilized.

Then the Commission was presented with varying facts about the Federal Communication Commission (FCC) having total say over this issue as granted to it by Congress in the Telecommunication Act of 1996. In brief, this Act says, among many other things, that the siting of any antennae cannot be denied due to health concerns. Many on the Commission are concerned that this Act did not contemplate small cell towers being located on the public rights-of-way in front of people's homes. In addition, the FCC, using the science that they receive from other agencies and scientific/engineering associations, has set the allowable power intensity that can be emitted from these antennae. Testimony shows these limits are set well above many other industrialized nations. There are concerns by many Washington, DC watchers that the FCC is a captive agency whose Commission members come from the industry they are overseeing. These are the realities that can only be altered by Congressional action. As a New Hampshire Commission, as we moved through the Commission process, many of the members concluded we could first encourage our federal delegation to enact changes and second, assuming the federal realities cannot be changed, recommend protective measures that will stay within the current federal framework.

As far as the FCC and federal agencies, we made several attempts to have them testify before the Commission. The Commission was disappointed that they did not reply to these requests, because we thought it important for completeness of our work to hear from these agencies. When the agencies did not reply, we asked several agencies to answer very specific written questions. Instead of answering

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<sup>1</sup> Aitken RJ, Bennetts LE, Sawyer D, Wiklendt AM, King BV. "Impact of radio frequency electromagnetic radiation on DNA integrity in the male germline." *Inter J Androl* 28:171-179, 2005, <https://pubmed.ncbi.nlm.nih.gov/15910543/>

<sup>2</sup> Akdag MZ, Dasdag S, Canturk F, Karabulut D, Caner Y, Adalier N. "Does prolonged radiofrequency radiation emitted from Wi-Fi devices induce in various tissues of rats?" *J Chem Neuroanat*, 75(Pt B):116-122, 2016, <https://pubmed.ncbi.nlm.nih.gov/26775760/>.

<sup>3</sup> Akdag M, Dasdag S, Canturk F, Akdag MZ. "Exposure to non-ionizing electromagnetic fields emitted from mobile phones induced DNA damage in human ear canal hair follicle cells." *Electromagn Biol Med*. 37(2):66-75, 2018.

<sup>4</sup> Al-Serori H, Ferk F, Kundi M, Bileck A, Gerner C, Mišik M, Nersesyan A, Waldherr M, Murbach M, Lah TT, Herold-Mende C, Collins AR, Knasmüller S. "Mobile phone specific electromagnetic fields induce transient DNA damage and nucleotide excision repair in serum-deprived human glioblastoma cells." *PLoS One*. 13(4):e0193677, 2018.

our specific questions, the responses directed Commission members to certain locations on websites for what turned out to be more general information on topics of public interest. The communications with these agencies are contained in [Appendix B](#).

### Summary of Commission Meetings

The Commission met a total of 13 times over a period from September 2019 to October 2020. Unfortunately, due to the Covid-19 pandemic, all activity at the NH State House came to a halt from mid-March to mid-June this year. This meant that the Commission missed four meetings and thus heard from fewer experts on this topic than planned. It is important to stress that the Chair was planning to call additional witnesses from the scientific community as well as the telecommunication industry. When we resumed meeting, starting with one on July 1, all remaining meetings were conducted via Zoom. After our July 24<sup>th</sup> meeting, a work group consisting of seven members was formed to start formulating recommendations for the full Commission to consider. This work group met approximately every other week through the finalization of this report at the end of October. The table below summarizes the full Commission meeting dates and who the main speakers were.

#	Date	Major Topics and/or Guest Speakers
1	9/16/19	Organizational meeting
2	10/10/19	Electromagnetic Spectrum Physics Presentation Dr. Kent Chamberlin, Chair of UNH Electrical and Computer Engineering Department  Presentation on Biological Effects of RF radiation Dr. Paul Heroux, Professor of Toxicology, McGill University
3	10/31/19	National Toxicology Program Study on RF-Radiation Michael Wyde, PhD  Framing the Issue Video Frank Clegg, Former Microsoft Canada President
4	11/21/19	Non-Existence of RF-Radiation Biological Effects Argument Eric Swanson, PhD, University of Pittsburgh.
5	12/13/19	Reinventing Wires and 5G in Colorado Tim Schoechle, PhD, Colorado State University

6	1/10/20	Studies Showing RF-Radiation Biological Effects Devra Davis, PhD, MPH, Founder/President Environmental Health Trust (EHT)  The Landscape Nationally and Internationally Surrounding RF-Radiation, Theodora Scarato, Executive Director EHT
7	2/14/20	What is 5G and What Do We Know About the Health Effects of 5G David Carpenter, MD, Director, Institute for Health and the Environment, University of Albany
<i>COVID-19 NH STATE HOUSE CLOSURE</i>		
8	7/1/20	13 Objections To 5G/4G Herman Kelting, PhD, Retired Las Vegas, NV
9	7/24/20	Around the table discussion of where we are and next steps. Established a work group to formulate recommendations.
10	8/31/20	Presentation of work group recommendations and discussion. Discussed that a minority report would be required.
11	9/22/20	Discussion and voting on first half of recommendations
12	10/8/20	Discussion and voting on second half of recommendations
13	10/27/20	Review and vote on final report.

There are extensive minutes of all of these meetings that are included at the end of this report in [Appendix O](#). In addition, the Commission has maintained a [webpage](#) on which is posted the various documents and links to information that it has collected during the course of its study, including many of the presentations provided during the meetings.

### **Questions Posed in HB 522**

There were eight questions asked in the legislation creating the Commission. Research by the Commission has resulted in lengthy answers with supporting credits. With that we are showing the questions asked in the body of this report only, with the answer to each question shown in [Appendix C](#). The questions are as follows:

1. Why does the insurance industry recognize wireless radiation as a leading risk and has placed exclusions in their policies not covering damages by the pathological properties of electromagnetic radiation?
2. Why do cell phone manufacturers have in the legal section within the device saying keep the phone at least 5mm from the body?
3. Why have 1,000s of peer-reviewed studies, including the recently published U.S Toxicology Program 16-year \$30 million study, that are showing a wide

range of statistically significant DNA damage, brain and heart tumors, infertility, and so many other ailments, been ignored by the Federal Communication Commission (FCC)?

4. Why are the FCC-sanctioned guidelines for public exposure to wireless radiation based only on the thermal effect on the temperature of the skin and do not account for the non-thermal, non-ionizing, biological effects of wireless radiation?
5. Why are the FCC radiofrequency exposure limits set for the United States 100 times higher than countries like Russia, China, Italy, Switzerland, and most of Eastern Europe?
6. Why did the World Health Organization (WHO) signify that wireless radiation is a Group B Possibly Carcinogenic to Humans category, a group that includes lead, thalidomide, and others, and why are some experts who sat on the Who committee in 2011 now calling for it to be placed in the Group 1, which are known carcinogens, and why is such information being ignored by the FCC?
7. Why have more than 220 of the world's leading scientists signed an appeal to the WHO and the United Nations to protect public health from wireless radiation and nothing has been done?
8. Why have the cumulative biological damaging effects of ever-growing numbers of pulse signals riding on the electromagnetic sine waves not been explored, especially as the world embraces the Internet of Things, meaning all devices being connected by electromagnetic waves, and the exploration of the number of such pulse signals that will be created by implementation of 5G technology?

The answers to these questions have been embraced by the majority of the members of the Commission.



## SUMMARY AND OBSERVATIONS

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House Bill 522 established “a Commission to study the environmental and health effects of evolving 5G technology.” The Commission that was convened as a result of this legislation is comprised of thirteen members with backgrounds that include physics, engineering electromagnetics, epidemiology, biostatistics, occupational health, toxicology, medicine, public health policy, business, and law. The Commission also has representation from the telecommunications industry. The Commission began its work on September 16, 2019 and submitted this report on November 1, 2020.

The Commission recognizes that cellular and wireless communications is very important to the citizens of New Hampshire. The rollout of wireless services and new products in the industry can be key to enhancing public safety, economic opportunity, and healthcare. Regardless of the evidence presented and the risks associated with RF electromagnetic field effects, business and residents alike want 100% coverage and seamless connectivity. The majority of the Commission believes that some balance can be struck to achieve the benefits of technology without jeopardizing the health of our citizens.

To become acquainted with the issues relevant to 5G radiation exposure and health, the Commission heard from ten recognized experts in the fields of physics, epidemiology, toxicology, and public policy. All but the presenter representing the Telecommunications Industry (the transcript of that presentation can be found in the Commission’s minutes of Nov 21<sup>st</sup>) acknowledged the large body of peer-reviewed research that shows that the type of RF-radiation generated by wireless devices can have a deleterious effect on humans, especially children, as well as animals, insects, and vegetation (see [Appendix D](#)).

The Commission was unable to meet for four months due to the shutdown of the NH State House caused by COVID-19. While this loss of time did limit the number of presenters that could be accommodated, the majority of the Commission did not believe that additional presenters were necessary because the information provided by the ten experts was deemed sufficient.

5G is moving forward because of its potential benefits and because of assurances by federal regulatory agencies that 5G technology is not harmful. However, those

assurances have themselves come into question because of the thousands of peer-reviewed studies documenting deleterious health effects associated with cellphone radiation exposure. Most of the federal regulatory agencies' radiation exposure limits were established in the mid-1990s before the studies were carried out, so they did not take those studies into account when setting exposure limits. In addition, the initial exposure limits were developed at a time before wireless devices, and the radiation associated with them, became ubiquitous. Not only are wireless devices far more prevalent than in the past, but these radiating devices are typically carried in direct, or near direct, contact with peoples' bodies. Further, the total radiation exposure for individuals is compounded by the radiation from nearby sources, including others' devices, cell towers, wireless routers, Bluetooth devices, etc. Because of the large number of radiating devices in today's environments, exposure for people is many times greater than when radiation thresholds were established, and the nature of today's radiation (high-data-rate signals) has been shown to be more harmful than the lower-data-rate signals that were prevalent before.

The significant disconnect between the regulatory agencies' pronouncements that cellphone radiation is safe and the findings of thousands of scientific studies was one of the major issues that the Commission sought to address. The Commission is not alone in wrestling with this issue as many others (see [Appendix E](#)) have challenged the radiation thresholds specified. It is to be noted that the only country with higher radiation thresholds than the U.S. is Japan (see [Appendix F](#)), and a large number of independent scientists have concluded that the thresholds for Japan and the U.S. are unsafe.

A likely explanation as to why regulatory agencies have opted to ignore the body of scientific evidence demonstrating the negative impact of cellphone radiation is that those agencies are "captured" (see Harvard University publication entitled, "Captured Agency: How the Federal Communications Commission Is Dominated by the Industries It Presumably Regulates" linked in [Appendix G](#)). This report documents how the leadership roles in some agencies (the FCC in particular) are filled by individuals with strong industry ties and hence are more focused on industry interests than the health of citizens. As is shown in other sections of this report, federal legislation uses policy set by the regulatory agencies to wrest control of wireless facility placement from individuals, cities, and states. Consequently, some of the Commission's recommendations call for a

reassessment of the makeup and policies of federal regulatory agencies. Current policies in place by federal regulatory agencies (such as section 704 of the Telecommunications Act of 1996) are tailored to prevent local objections to cell tower siting that are based upon health or environmental concerns, and this leaves citizens with little legal recourse regarding equipment placement.

Industry projects that over 800,000 small cell towers<sup>5</sup> will be necessary to implement 5G. Many are being erected in the public rights-of-way in New Hampshire neighborhoods and mounted on new poles, streetlights, and utility poles directly in front of homes. However, because of the rules currently in place, individuals and municipalities cannot use health or environmental concerns as a reason to object.

The majority of the Commission has endorsed the 15 recommendations presented in this report. These recommendations are not in prioritized order, and each should be given equal consideration. The objective of those recommendations is to bring about greater awareness of cell phone, wireless and 5G radiation health effects and to provide guidance to officials on steps and policies that can reduce public exposure. We also recommend partnering with our federal delegation to facilitate the reevaluation of radiation exposure guidelines and policies by federal agencies (i.e., the FCC, FDA, NASA, NOAA, FAA, EPA, etc.) to protect people, wildlife, and the environment from harmful levels of radiation.

Since the Commission could not reach full agreement on all that is contained in this report, the minority of the Commission has been given the opportunity to express its opinion as provided in the Minority Report.

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<sup>5</sup> The number of projected cell towers for 5G was taken from the CTIA website: “There are 154,000 cell towers today. To meet growing mobile data demands and win the Race to 5G Accenture projects we will need to install hundreds of thousands of small cells in the next few years. S&P Global Market Intelligence projects more than 800,000 small cells deployed by 2026.”

## RECOMMENDATIONS

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The Commission has heard from many experts on both sides of the argument concerning the health and environmental effects of 5G and RF-radiation in general; reviewed countless study reports; attempted to get direct answers to our specific questions from the FCC and other federal agencies to no avail; has become aware of a number of lawsuits against the FCC for not accounting for biological effects in the setting of their standards; is still not certain why the standards for acceptable RF-radiation are set so much higher in the United States than other industrialized nations; is concerned that the modulation of frequencies and the combined effect of “the soup” of RF-waves surrounding us today, which will likely increase with time; is aware that there is much research showing potential health risks and understands that much more research is required; is cognizant that our country historically has been beset by examples of products being declared safe only later to be proven unsafe; and is very aware that the World Health Organization and the whole insurance industry are hedging their bets against RF-radiation because of potential harm. Given these considerations, the majority of the Commission yields to the precautionary principle in formulating many of these recommendations. These recommendations cover a broad range of topics. One topic given much consideration had to do with liability from potential harm caused by small cell antennae placed on the public rights-of-way. A majority of the Commission could not agree upon a recommendation surrounding this topic.

***RECOMMENDATION 1- Propose a resolution of the House to the US Congress and Executive Branch to require the Federal Communication Commission (FCC) to commission an independent review of the current radiofrequency (RF) standards of the electromagnetic radiation in the 300MHz to 300GHz microwave spectrum as well as a health study to assess and recommend mitigation for the health risks associated with the use of cellular communications and data transmittal.*** The Telecommunications Act of 1996 was adopted before the health risks and biological effects of RF-radiation to the human body were fully known to the scientific community as well as the public. The majority of the Commission believes that the FCC has not exercised due diligence in its mission to manage the electromagnetic environment by not setting exposure limits that protect against health effects. They have failed to support technical means and investigations aimed at reducing human exposures to electromagnetic radiation (EMR) in

telecommunications systems and optimize wireless modulations to reduce biological and health impacts. Commissioned research should study the health effects and should be conducted by an independent research organization with standards which have been mutually agreed to by all the stakeholders. The FCC shall then ensure that the findings and recommendations are adequately disseminated to the public.

***RECOMMENDATION 2- Require that the most appropriate agency (agencies) of the State of New Hampshire include links on its (their) website(s) that contain information and warnings about RF-radiation from all sources, but specifically from 5G small cells deployed on public rights-of-way as well as showing the proper use of cell phones to minimize exposure to RF-radiation, with adequate funding granted by the Legislature. In addition, public service announcements on radio, television, print media, and internet should periodically appear, warning of the health risks associated with radiation exposure. Of significant importance are warnings concerning the newborn and young as well as pregnant women.*** Even without further study, there is evidence that the public should be warned of the potential dangers of RF-radiation and be told simple steps to lessen the risks of unnecessary exposure. [Appendix H](#) shows an example of a simple RF-radiation warning.

The website must provide an option for visitors to register their opinions about current FCC exposure guidelines. In particular, this registry should provide a convenient and formal mechanism for New Hampshire municipalities and residents to weigh in concerning the 1996 Telecommunications Act Section 704 that disallows using radiation-related health concerns as a reason to challenge cell phone tower siting. The primary use for the data collected on this registry will be to gauge the level of interest about RF-radiation exposure on the part of New Hampshire citizens.

***RECOMMENDATION 3- Require every pole or other structure in the public rights-of-way that holds a 5G antenna be labeled indicating RF-radiation being emitted above. This label should be at eye level and legible from nine feet away.*** In the view of the Commission, the State of New Hampshire has the right to warn the public of potential harm of 5G antennae deployed in the public rights-of-way. Large cell towers all currently have fencing around them at their base to protect the public. This will not be the case with small cell towers or any pole with an

antenna on top in the public right-of-way. These public rights-of-way are the jurisdiction of our municipalities and not of the Federal Government. The Telecommunication Act of 1996 did not contemplate antennae being placed on the public rights-of way of municipalities. Thus, the State of New Hampshire has the right to warn the public by requiring the owners of these antennae to inform the public of potential harm from RF-radiation. See [Appendix I](#) for an example symbol.

***RECOMMENDATION 4- Schools and public libraries should migrate from RF wireless connections for computers, laptops, pads, and other devices, to hard-wired or optical connections within a five-year period starting when funding becomes available.*** There is strong evidence that the younger the child the more susceptible they are to the negative impacts of RF-radiation. Hard-wired connections or optical wireless do not subject children to RF-radiation. The Commission is aware that school districts and public libraries have invested much in wireless infrastructure and that a movement to radiation-less connections would require additional investment of resources.

New optical networking solutions for the classroom and office spaces (such as LiFi) offer faster, healthier, and more secure connections than RF-based WiFi. This technology utilizes visible light, which organisms can withstand without any harm at far higher intensity levels (such as direct sunlight) than is required for data transmission. Such optical data transmission using visible light offers gigabit speed, as well as plug-and-play replacement of current RF WiFi routers. The optical wireless system can be incorporated in an upgrade to cost-efficient LED room lighting which can save schools and public libraries significant energy dollars.

The hard-wiring and/or optical projects should be completed within five years from when the federal funding (e.g., through the FCC's E-Rate program for telecommunications and IT in schools and public libraries) is procured.

***RECOMMENDATION 5- Signal strength measurements must be collected at all wireless facilities as part of the commissioning process and as mandated by state or municipal ordinances. Measurements are also to be collected when changes are made to the system that might affect its radiation, such as changes in the software controlling it. Signal strength is to be assessed under worst-case***

***conditions in regions surrounding the tower that either are occupied or are accessible to the public, and the results of the data collection effort is to be made available to the public via a website. In the event that the measured power for a wireless facility exceeds radiation thresholds, the municipality is empowered to immediately have the facility taken offline. The measurements are to be carried out by an independent contractor and the cost of the measurements will be borne by the site installer.*** It is recognized that theoretical calculations show that existing FCC guidelines will be met by standard cell tower configurations. However, there are cases where the radiation from towers can be focused by buildings, terrain, and beamforming antennas, causing signal levels to be considerably higher than would be expected in theoretical calculations unless those effects are taken into account. Collecting field measurements provide the only valid approach for determining whether exposure guidelines have been met. It is to be noted that some municipalities (e.g., the town of Burlington, MA [1]) have ordinances requiring measurements at cell towers.

Federal law and NH law grant to municipalities the power to enact zoning rules regulating the placement of personal wireless service facilities within the geographic boundaries of the municipalities. Municipalities should be proactive in this area and, through the exercise of zoning power, establish where, how, and a process for compliance with existing FCC guidelines for signal strength in the surrounding coverage area. Municipalities should establish a hierarchy of siting values and compliance acknowledgements so that the siting most favored by the municipality is the easiest siting for the wireless applicant to obtain and, conversely, the siting which is least desirable should be the most difficult siting for the applicant to obtain. The zoning ordinance should lay out the compliance requirement as part of the zoning approval.

[1] Burlington, MA zoning Bylaw Wireless Facilities section 8.4.6.2 - “Annual RF emissions monitoring is required for all sites by an independent RF engineer to be hired with Planning Board approval and at the applicant’s expense. Test results will be submitted to the Town as soon as available, and not later than the close of the calendar year. Annual testing of electromagnetic emission shall be required to ensure continual compliance with the FCC regulations.”



***Recommendation 6- Establish new protocols for performing signal strength measurements in areas around wireless facilities to better evaluate signal characteristics known to be deleterious to human health as has been documented through peer-reviewed research efforts. Those new protocols are to take into account the impulsive nature of high-data-rate radiation that a growing body of evidence shows as having a significantly greater negative impact on human health than does continuous radiation. The protocols will also enable the summative effects of multiple radiation sources to be measured.***

Contemporary approaches to performing signal level measurements do not provide a means to evaluate signal impulsiveness or the contribution of multiple radiation sources because of equipment limitations. The measurement protocols proposed will employ wideband equipment that is currently available but is not typically used to measure compliance with radiation safety limits. References that address the deleterious effects of impulsive radiation on organisms are given in [Appendix J](#). The development of the proposed protocols should be funded by the appropriate federal agency (e.g., NSF, NIH, FCC, etc.) and should be facilitated by New Hampshire's federal delegation.

***RECOMMENDATION 7- Require that any new wireless antennae located on a state or municipal right-of-way or on private property be set back from residences, businesses, and schools. This should be enforceable by the municipality during the permitting process unless the owners of residences, businesses, or school districts waive this restriction.*** Local public rights-of-way are under the jurisdiction of municipalities, and the Commission feels that municipalities should uphold the rights of individuals impacted by antennae. The Commission also supports the right of property owners to manage decisions on non-essential devices being placed in front of their property.

The Commission believes that it is important to prioritize citizen safety, particularly as 5G is an upgrade, rather than the provision of wireless service to unserved areas. Additional rationale for this recommendation is shown in [Appendix K](#).

***RECOMMENDATION 8- Upgrade the educational offerings by the NH Office of Professional Licensure and Certification (OPLC) for home inspectors to include RF intensity measurements.*** Home inspectors currently operate as private contractors who may be hired by citizens or enterprises to measure such things as

radon, to collect water quality samples, or search for mold or insect damage. Home inspectors routinely supply test results to both their clients and government entities.

The majority of the Commission believes the public has the right to discover, on a voluntary basis, the RF power intensity related to radio frequencies at a property which they will be purchasing or renting before the transaction is closed. Also, the proprietors of publicly accessible venues may wish to reassure the public about the RF power intensity within their establishments, by posting the data collected by a state-approved inspector. In addition, such testing should be paid for by the party requesting it and the testing itself should be performed by a professional who owns or rents the test equipment and has met the state requirements for training of home inspectors regarding RF measurements.

The majority of the Commission proposes that home inspectors be offered training by NH OPLC on how to measure on-site peak and 24-hour average RF intensities. Measurements of frequencies and intensities will be performed using low-cost equipment (such as GQ-390 meters). [Description of existing home inspector training offered for radon, mold, etc. may be seen at <https://oplc.nh.gov/home-inspectors/index.htm>]

***RECOMMENDATION 9- The State of New Hampshire should begin an effort to measure RF intensities within frequency ranges throughout the state, with the aim of developing and refining a continually updated map of RF exposure levels across the state using data submitted by state-trained home inspectors.*** The data should be collected in such a way as to identify geographic areas of notably high RF exposure, places where RF signal for wireless communication is inadequate (dead spots), and places where RF is unusually low (white spots) sought by people who wish to minimize their RF exposure. One possible use of this data will be buyers/renters of property or the public, in general, using benchmark values to make comparisons and make their own decisions based on their comfort level with RF exposure. After a while, an extensive New Hampshire RF database will exist to provide useful maps and data for future public health investigations. [Appendix L](#) outlines in more detail the technical aspects of this recommendation.

***RECOMMENDATION 10- Strongly recommend all new cell phones and all other wireless devices sold come equipped with updated software that can stop the phone from radiating when positioned against the body.*** The Commission has been made aware that cell phones contain proximity sensors that will allow a cell phone to only radiate signals when a certain distance from the body, for example, held in the fingers or placed on a table. This does not change the functionality of the device, only the way it is used, specifically not held against the head or body. Implementation is a software update in the cell phone, as these phones already have a proximity detector to turn off the screen and soft keys when an obstacle is present. With this change, the screen and the RF circuit are automatically turned off. This removes the problems of brain cancers (glioblastomas and acoustic neuromas) and the issue of SAR limits for the industry. See [Appendix M](#) for more detailed references to the science behind this recommendation. Cell phones should come set with this inhibition, with instructions in the manual on how to disable it. There should be a soft button on the unit to easily re-enable the radiation inhibition, for example if the unit is handed to a child. In all cases, it should be easier to enable the restriction than to disable it. Cellular phones marketed specifically for children should stop radiating when positioned against the body under all circumstances. The installation of such proximity sensors is also encouraged in laptops and tablets.

***RECOMMENDATION 11- Promote and adopt a statewide position that would strongly encourage moving forward with the deployment of fiber optic cable connectivity, internal wired connections, and optical wireless to serve all commercial and public properties statewide.*** The majority of the Commission believes that fiber optic transmission is the infrastructure of the future. When compared, RF wireless transmission lacks fiber optic characteristics: speed, security, and signal reliability while avoiding biological effects on humans and the environment.

The State should encourage partnerships between towns to make this happen and encourage our federal delegation to support grant money to assist with such deployments when it comes to funding fiber optic cable deployment, especially in rural locations.

**RECOMMENDATION 12- Further basic science studies are needed in conjunction with the medical community outlining the characteristics of expressed clinical symptoms related to radio frequency radiation exposure.** Further studies are just beginning to explore the quantum mechanical mechanisms which are the fundamental basis for understanding the biological changes occurring during the interaction of radio frequency radiation and molecules. These mechanisms can affect cells, tissues, and whole organs, as well as accumulate over time.

The majority of the Commission feels the medical community is in the ideal position to clarify the clinical presentation of symptoms precipitated by the exposure to radio frequency radiation consistent with the Americans with Disabilities Act (ADA) which identifies such a disability. The medical community can also help delineate appropriate protections and protocols for affected individuals.

All of these endeavors (basic science, clinical assessment, epidemiological studies) must be completely independent and outside of commercial influence.

**RECOMMENDATION 13- Recommend the use of exposure warning signs to be posted in commercial and public buildings. In addition, encourage commercial and public buildings, especially healthcare facilities, to establish RF-radiation free zones where employees and visitors can seek refuge from the effects of wireless RF emissions.** Many NH citizens report sensitivity to electromagnetic radiation emitted from devices used in the delivery of in-building cellular and fixed wireless services. A majority of the Commission suggests that owners of commercial and public buildings, especially healthcare facilities, voluntarily place signage at entrances concerning RF-levels and RF-free zones within these structures so those entering the building are aware.

**RECOMMENDATION 14- The State of New Hampshire should engage agencies with appropriate scientific expertise, including ecological knowledge, to develop RF-radiation safety limits that will protect the trees, plants, birds, insects, and pollinators.** The majority of the Commission understands that current federal safety limits were made with the intention of only protecting humans from short term effects, but not protecting flora or fauna from harm. The State of New Hampshire needs to ensure our natural environment and wildlife are protected by effective safety standards. Tree limbs, birds, and pollinators will be closer than

humans to 5G cell antennae and associated 4G densified infrastructure. In fact, the wireless radiation from cell antennae is very high in a plume surrounding the antennae. It could exceed FCC limits for several feet in this area, yet this is the exact area where leaves of trees, birds, and pollinators live. Thus, they may have higher exposures being in direct line of sight of wireless RF beams. When pollinators are impacted so are all forms of vegetation that depend on them for reproduction. Research on this issue is shown in [Appendix N](#).

***RECOMMENDATION 15- The State of New Hampshire should engage our Federal Delegation to legislate that under the National Environmental Policy Act (NEPA) the FCC do an environmental impact statement as to the effect on New Hampshire and the country as a whole from the expansion of RF wireless technologies.*** Concern comes from the FCC projection that there will be numerous low orbit satellites and 5G small cell antennae, plus many additional macro towers required for these networks to function. The majority of the Commission is concerned that any new large-scale project that will densify antennae networks to this extent truly requires an environmental impact study. The NEPA statute requires that the agency consider environmental concerns in its decision-making process. NH should be provided documentation of such considerations. Until there is Federal action, NH should take the initiative to protect its environment.

## MINORITY REPORT

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The following members, being unable to agree with the majority of the Commission, endorse this Minority Report:

Senator James Gray, David Juvet, and Bethanne Cooley

Contrary to the position taken in the Recommendations section, the science related to radiofrequencies, wireless devices, and health is well studied and well known: The consensus of the U.S. and international scientific community is that there are no known adverse health risks from the levels of RF energy emitted at the frequencies used by wireless devices (including cellphones) and facilities (including small cells). Some of those who presented to the NH 5G Commission have sought to sow confusion, but the facts demonstrate otherwise.<sup>6</sup> *First*, when setting limits for the RF emissions of wireless devices, the Federal Communications Commission (“FCC”) intentionally provided a significant safety margin—50 times below the threshold at which adverse effects have been observed in laboratory animals.<sup>7</sup> And in its 2019 order, the FCC assessed the available science, including studies related to the safety of 5G networks, and based on the relevant scientific research, concluded that wireless devices and small cells are safe when they adhere to the FCC’s current RF exposure limits, as required by law. *Second*, numerous, independent analyses of peer-reviewed studies conducted over several decades by national and international organizations conclude that there are no known health risks to humans from RF

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<sup>6</sup> Commission discussions indicated that the Commission was comprised of many individuals who had preconceived opinions about the safety of RF devices and wireless technology in general. Due to many factors, experts in favor of wireless technology were cut short in participating. For example, an additional expert in favor of wireless technology was offered as a speaker during the summer and the Commission indicated no additional experts would be permitted. However, after that request was denied, an “expert” opposed to RF devices and wireless technology spoke at a subcommittee meeting of the majority. In addition, the Commission heard only a portion of expert Eric Swanson’s testimony and failed to consider in a balanced fashion the well-developed reviews of the science from the U.S. and international health and safety organizations. Thus, in this report we have cited those authorities even though the Commission did not include them as part of the formal record.

<sup>7</sup> The threshold for adverse effects was set at the level at which heating caused a “disruption of observable behavior” in animals. See *Proposed Changes in the Commission’s Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, First Report and Order, Further Notice of Proposed Rulemaking, and Notice of Inquiry, 28 FCC Rcd. 3498, 3582 ¶ 236 (2013) (“FCC NOI”) (“exposure limits are set at a level on the order of 50 times below the level at which adverse biological effects have been observed in laboratory animals as a result of tissue heating resulting from RF exposure”); IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz, IEEE Std C95.1-2019, Annex B Sec. B.5.3.3 and Annex C Sec. C.2.1 (2019) (“Typically, the effect observed has been a decreased rate of responding or decreased reaction time.”).

energy emitted by wireless devices and infrastructure. Thus, the scientific consensus as evaluated by experts, international standard-setting bodies, and federal health and safety agencies is that wireless devices and base stations at the FCC's RF exposure levels is safe.

Given the scientific consensus, it is our opinion that the Recommendations exceed what a reasonable response should be to the evidence on this issue. This Minority Report purposely chose not to highlight each recommendation but instead highlights findings from federal agencies, including the FCC and the Food and Drug Administration (FDA), studies conducted by leading international and national health organizations, the IEEE and the scientific community at-large. It will also note the federal preemption issues associated with the Recommendations. Given the scientific consensus, it is our opinion that the Recommendations have no basis in scientific fact, are irresponsible, and will subject the state and any localities implementing these Recommendations to needless and expensive challenges that will drain time and resources from more important and credible priorities.

## THE FCC SAFETY REGULATIONS

FCC limits govern RF energy from antennas used in all wireless devices including cellular transmissions from cellphones, cell towers, and 5G small cells. The FCC based these limits on recommendations from the scientific community and expert non-government organizations; the FCC limits currently cover frequencies from 100 kHz to 100 GHz, including the “millimeter wave” or “mmW” frequencies.<sup>8</sup> These guidelines—based on internationally-recognized scientific organizations—set limits for the maximum amount of RF exposure from wireless devices and include a significant margin of safety.<sup>9</sup> Specifically, the FCC has set its limit for a consumer device's Specific Absorption Rate—the measurement for RF emissions for consumer devices such as cellphones—“at a level on the order of *50 times below* the level at which adverse biological effects have been observed in laboratory animals.”<sup>10</sup> The agency explained that this 50-fold factor can well

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<sup>8</sup> NPRM, 34 FCC Rcd at 11742 ¶ 120.

<sup>9</sup> Testimony of Christopher C. Davis, Professor of Electrical and Computer Engineering, University of Maryland, *Hearing on S.B. 637 and S.B. 894 Before the Mich. H. Comm. on Energy Policy*, 2018 Leg., 99th Sess., at 4:17 (May 29, 2018) (“[Professor Davis Testimony](http://www.house.mi.gov/SharedVideo/PlayVideoArchive.html?video=ENER-052918-2.mp4)”), <http://www.house.mi.gov/SharedVideo/PlayVideoArchive.html?video=ENER-052918-2.mp4>.

<sup>10</sup> FCC NOI at ¶236 (emphasis added).



accommodate a variety of variables such as different physical characteristics and individual sensitivities—and even the potential for exposures to occur in excess of [FCC] limits without posing a health hazard to humans.”<sup>11</sup> In reality, wireless devices and antennas typically operate well under FCC thresholds.<sup>12</sup>

Further, all wireless devices sold in the U.S. must go through a rigorous approval process to ensure they meet the science-based guidelines set by the FCC.<sup>13</sup> The FCC’s testing regime requires cellphones to be tested under “the *most severe, worst-case (and highest power) operating conditions for all the frequency bands* used in the USA for that cell phone” to ensure that they meet the limits under everyday (non-worst-case) conditions.<sup>14</sup> The FDA stands in full support of the adequacy of the FCC’s standards. The Director of the FDA’s Center for Devices and Radiological Health wrote in 2018: “[B]ased on our ongoing evaluation of this issue and taking into account all available scientific evidence we have received, ***we have not found sufficient evidence that there are adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits.***”<sup>15</sup>

## HEALTH ORGANIZATIONS AND FDA STUDIES

International health organizations have also studied the effects of RF exposure and determined that there is no risk from RF emissions from modern wireless device usage. The World Health Organization (“WHO”) concludes “[c]onsidering the very low exposure levels and research results collected to date, there is no

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<sup>11</sup> *Id.*; see also *Targeted Changes to the Commission’s Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, Resolution of Notice of Inquiry, Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion and Order, 34 FCC Rcd 11687, 11696 ¶14 (2019) (“Order”) (“[O]ur existing exposure limits are set with a large safety margin, well below the threshold for unacceptable rises in human tissue temperature.”).

<sup>12</sup> See Professor Davis Testimony (6:00-7:45) (discussing the 50-fold safety factor and typical emissions from small cells); Christopher C. Davis, Professor of Electrical and Computer Engineering, University of Maryland, *Hearing on S.B. 637 and S.B. 894 Before the Mich. H. Comm. on Energy Policy*, 2018 Leg., 99th Sess., Written Testimony at 2 (May 29, 2018), <http://www.wirelesshealthfacts.com/wp-content/uploads/2019/06/Davis-Testimony.pdf> (observing that “RF exposure levels from wireless base stations are invariably far below the FCC limits”).

<sup>13</sup> See generally 47 C.F.R. § 1.1307; *id.* part 2 Subpart J; Order, 34 FCC Rcd at 11697-742 ¶¶ 17-118.

<sup>14</sup> FCC, Consumer Guides, Health, Safety and Emergencies, *Specific Absorption Rate (SAR) for Cell Phones: What It Means for You* (emphasis in original), <https://www.fcc.gov/consumers/guides/specific-absorption-rate-sar-cell-phones-what-it-means-you> (last updated Oct. 15, 2019).

<sup>15</sup> News Release, FDA, *Statement from Jeffrey Shuren, M.D., J.D., director of the FDA’s Center for Devices and Radiological Health on the recent National Toxicology Program draft report on radiofrequency energy exposure* (Feb. 2, 2018) (“Shuren Statement”), <https://www.fda.gov/news-events/press-announcements/statement-jeffrey-shuren-md-jd-director-fdas-center-devices-and-radiological-health-recent-national>.

convincing scientific evidence that the weak RF signals from base stations and wireless networks cause adverse health effects.”<sup>16</sup> The WHO has also concluded that “research has not been able to provide support for a causal relationship between exposure to electromagnetic fields and self-reported symptoms, or ‘electromagnetic hypersensitivity’”.<sup>17</sup> Likewise, both the United Kingdom Health Protection Agency Independent Advisory Group on Non-Ionizing Radiation and Swedish Council for Working Life and Social Research agree that RF exposure below guideline levels consistent with FCC limits do not cause health effects.<sup>18</sup>

The majority also justifies its recommendations by referencing “the problems of brain cancers (glioblastomas and acoustic neuromas) and the issue of specific absorption rate (SAR) limits for the industry.” Some have raised questions with respect to cancer and tumors, but experts in cancer have repeatedly found no link between mobile devices and cancer. For example, the National Cancer Institute reported that: “although many studies have examined the potential health effects of non-ionizing radiation from radar, microwave ovens, cell phones, and other sources, there is currently no consistent evidence that non-ionizing radiation increases cancer risk in humans.”<sup>19</sup> Likewise, the American Cancer Society explained that the “RF waves given off by cell phone towers don’t have enough energy to damage DNA directly or to heat body tissues. Because of this, it’s not clear how cell phone towers might be able to cause cancer.”<sup>20</sup>

Earlier this year, the FDA released a large-scale review of published literature to

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<sup>16</sup> WHO, *Electromagnetic fields and public health: Base stations and wireless technologies*, Backgrounder (May 2006), <https://www.who.int/peh-emf/publications/facts/fs304/en/>.

<sup>17</sup> WHO, *Electromagnetic fields and public health: mobile phones*, Backgrounder (Oct. 8, 2014) (“WHO Mobile Phones Fact Sheet”), <https://www.who.int/news-room/fact-sheets/detail/electromagnetic-fields-and-public-health-mobile-phones>.

<sup>18</sup> See Health Protection Agency Independent Advisory Group on Non-Ionizing Radiation, *Health Effects from Radiofrequency Electromagnetic Fields* (RCE-20), at 3 (Apr. 2012), [https://webarchive.nationalarchives.gov.uk/20140722075005/http://www.hpa.org.uk/webc/HPAwebFile/HPAweb\\_C/1317133827077](https://webarchive.nationalarchives.gov.uk/20140722075005/http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317133827077) (“The evidence suggests that RF field exposure below guideline levels does not cause acute symptoms in humans, and that people, including those who report being sensitive to RF fields, cannot detect the presence of RF fields.”); Anders Ahlbom, et al., *Radiofrequency Electromagnetic Fields and Risk of Disease and Ill Health: Research during the last ten years*, Swedish Council for Working Life and Social Research, at 6 (2012), <https://forte.se/app/uploads/sites/2/2015/11/10-y-rf-report.pdf> (“Extensive research for more than a decade ... has found no evidence for health risks below current exposure guidelines.”).

<sup>19</sup> National Cancer Institute, *Cell Phones and Cancer Risk*, (Jan. 9, 2019) <https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/cell-phones-fact-sheet>.

<sup>20</sup> American Cancer Society, *Cell Phone Towers* (emphasis omitted) (“ACS Cell Phone Towers”), <https://www.cancer.org/cancer/cancer-causes/radiation-exposure/cellular-phone-towers.html> (last visited October 7, 2020).

“assess any possible causal relationship between [RF energy] exposure and the formation of tumors.”<sup>21</sup> After examining approximately 125 animal studies and 70 epidemiological studies, the FDA stated that “there are no quantifiable adverse health effects in humans caused by exposures at or under the current cell phone exposure limits.”<sup>22</sup> As Dr. Jeffrey Shuren, Director of the FDA’s Center for Devices and Radiological Health, observed in 2018: “Even with frequent daily use by the vast majority of adults, we have not seen an increase in events like brain tumors.”<sup>23</sup> Courts too, after hearing extensive testimony, have determined that there is “no sufficiently reliable and relevant scientific evidence in support of either general or specific causation” that cellphone use caused the plaintiff’s brain cancer.<sup>24</sup> Dr. Otis Brawley, chief medical officer of the American Cancer Society, explained that “[t]he incidence of brain tumors in human beings has been flat for the last 40 years. ... That is the absolute most important scientific fact.”<sup>25</sup>

## THE SCIENCE AROUND EXPOSURES FROM 5G TECHNOLOGY

The majority has expressed concern with exposures from 5G technology using millimeter wave (“mmW”) bands and on the proliferation of small cell network architecture, and whether there are studies demonstrating that 5G does not create risks to human health.

Although 5G represents a new frontier for wireless communications, mmW frequencies do not. mmW frequencies are well understood by the international scientific community. The Institute of Electrical and Electronics Engineers (“IEEE”) has assembled a list of dozens and dozens of studies on mmW frequencies. The IEEE’s RF exposure standards over the last thirty years have cited 85 different mmW studies, the earliest was published in 1976 and the most recent in 2018.<sup>26</sup>

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<sup>21</sup> FDA, *Review of Published Literature between 2008 and 2018 of Relevance to Radiofrequency Radiation and Cancer*, at 4 (Feb. 2020), <https://www.fda.gov/media/135043/download>.

<sup>22</sup> *Id.* at 5.

<sup>23</sup> Shuren Statement.

<sup>24</sup> *Newman v. Motorola, Inc.*, 218 F. Supp. 2d 769 (D. MD 2002), *aff’d per curiam Newman v. Motorola, Inc.*, 78 Fed.Appx. 292 (4th Cir. 2003); *see also Murray v. Motorola, Inc.*, Memorandum Opinion and Order on Expert Witness Admissibility, Case No. 2002 CA 001371 A (Aug. 8, 2014).

<sup>25</sup> Luran Neergaard & Seth Borenstein, *Cross talk: Federal agencies clash on cellphone cancer risk*, Associated Press (Nov. 1, 2018), <https://apnews.com/4da5f1cdfd774af29143ff3f5ccffa0b>; *see also* IEEE Std C95.1-2019 at 16 n.8 (“The preponderance of epidemiologic evidence does not provide a sufficient basis for concluding that adult brain cancer is positively associated with mobile telephone use and, by implication, with RF exposures.”).

<sup>26</sup> CTIA, Resources, *Millimeter Wave Studies Cited by IEEE*, <http://www.wirelesshealthfacts.com/wp-content/uploads/2020/01/Millimeter-Wave-Studies.pdf> (last visited October 7, 2020).

Common equipment such as “airport scanners, automotive collision avoidance systems and perimeter surveillance radar security systems” all use mmW technology.<sup>27</sup>

Acting responsibly, scientists and engineers continue to research RF exposure, including RF exposure with 5G technology. IEEE’s Committee on Man and Radiation just completed a comprehensive review of 5G systems concluding that, based on the evidence to date, “the likelihood of yet unknown health hazards at exposure levels within current limits to be very low, if they exist at all.”<sup>28</sup> The authors explained that “one can expect that exposures from 5G networks will not differ greatly from those associated with present generation networks” because, like “previous generations of cellular systems: [5G must] provide a signal that is strong enough to be useful within a given cell but not so strong as to cause interference to users in nearby cells.”<sup>29</sup> In other words, 5G base stations are limited in their power because of the potential for those emissions to cause interference with other base stations.

The American Cancer Society explained that “[w]hile [5G] RF waves are higher frequency (higher energy) than those used by older generations, they are still forms of non-ionizing radiation, so they still lack the ability to directly damage DNA.”<sup>30</sup> Further, “these higher frequency RF waves are less able to penetrate the body than lower frequency waves, so in theory they might be less likely to have any potential health effects.”<sup>31</sup>

5G will also take advantage of small cell network architecture, which results in more base stations operating at *lower* power levels. A recent overview of exposure from small cells determined that such “[f]ixed small cell wireless communication installations ... that operate in compliance with the regulations of the FCC will produce RF exposures well within the recommended exposure limits of the FCC, ICNIRP [International Commission on Non-Ionizing Radiation Protection], and IEEE.”<sup>32</sup> Further, “[r]esearch to date does not provide a reliable

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<sup>27</sup> Joan Conrow, *Three reasons why 5G is unlikely to cause harm*, Cornell Alliance for Science, (June 26, 2020), <https://allianceforscience.cornell.edu/blog/2020/06/three-reasons-why-5g-is-unlikely-to-cause-harm/>.

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> *ACS Cell Phone Towers*

<sup>31</sup> *Id.*

<sup>32</sup> William H. Bailey, *Wireless 5G Radiofrequency Technology: An Overview of Small Cell Exposures, Standards and*

scientific basis to conclude that the operation of these facilities will cause or contribute to adverse health effects in the population.”<sup>33</sup>

In March 2020, ICNIRP released updated, modernized guidelines that expressly cover the new frequencies that 5G will use. Announcing their release, ICNIRP Chairman, Dr. Eric van Rongen, advised that “[t]he most important thing for people to remember is that 5G technologies will not be able to cause harm when these new guidelines are adhered to.”<sup>34</sup> The FCC’s rules are also designed to protect health and safety, and prevent harm. Indeed, the FCC notes that “the possibility that a member of the general public could be exposed to RF levels in excess of the FCC guidelines is extremely remote.”<sup>35</sup>

## FEDERAL PREEMPTION

The majority makes several recommendations related to mandated warnings, labeling, compliance regulations, and zoning requirements based on health and safety concerns. These recommendations are not warranted based on the science discussed above, but are also not viable because federal law preempts state and local action that conflicts with the FCC’s determination that compliant devices and equipment are safe. Congress determined that the FCC should be the “central[] authority” for regulating communications in the U.S.<sup>36</sup> This charge includes the regulation of “the kind of apparatus to be used” for wireless radio communications and “the emissions” that such equipment may produce.<sup>37</sup> The FCC promulgated its RF exposure rules to ensure that they protect human health nationwide as technology evolves, relying on sound scientific research of government and other expert organizations.

The FCC acted in its role as, in the words of the Supreme Court, the “exclusive”

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*Science*, at 7, Exponent (Apr. 2020), <http://www.wirelesshealthfacts.com/wp-content/uploads/2020/04/Bailey-5G-Whitepaper-4-15-20.pdf>.

<sup>33</sup> *Id.*

<sup>34</sup> Media Release, International Commission on Non-Ionizing Radiation Protection, *New Guidelines Released by the International Commission on Non-Ionizing Radiation Protection (ICNIRP)*, at 2 (Mar. 11, 2020), [https://www.icnirp.org/cms/upload/presentations/ICNIRP\\_Media\\_Release\\_110320.pdf](https://www.icnirp.org/cms/upload/presentations/ICNIRP_Media_Release_110320.pdf).

<sup>35</sup> FCC Consumer Guide, *Human Exposure to Radio Frequency Fields: Guidelines for Cellular Antenna Sites*, at 2 (Oct. 15, 2019), [https://www.fcc.gov/sites/default/files/human\\_exposure\\_to\\_radio\\_frequency\\_fields\\_-\\_guidelines\\_for\\_cellular\\_antenna\\_sites.pdf](https://www.fcc.gov/sites/default/files/human_exposure_to_radio_frequency_fields_-_guidelines_for_cellular_antenna_sites.pdf).

<sup>36</sup> 47 U.S.C. § 151.

<sup>37</sup> *Id.* § 303(e).

arbiter in the “technical matters” of radio,<sup>38</sup> which includes control for any environmental effects, including, among other things, RF emissions.<sup>39</sup> For example, the FCC recognized that “very high levels of RF radiation can be harmful due to the ability of RF energy to heat biological tissue rapidly.”<sup>40</sup> Accordingly, the FCC’s rules *limit* RF exposure to humans “from *all* transmitting facilities, operations, and devices it regulates.”<sup>41</sup>

By way of background, the FCC first adopted RF exposure rules in the 1980s and has updated its rules in response to new scientific evidence.<sup>42</sup> In 1996, Congress reaffirmed the FCC’s authority to set standards on RF emissions to provide “adequate safeguards of the public health.”<sup>43</sup> The FCC updated its RF exposure rules and relied on sound scientific research of government and other expert organizations. In particular, the FCC synthesized “submissions from the Environmental Protection Agency (“EPA”), the Food and Drug Administration (“FDA”), the Occupational Safety and Health Administration (“OSHA”), and the National Institute for Occupational Safety and Health (“NIOSH”).”<sup>44</sup> Several courts have examined and affirmed the FCC’s process to develop its RF exposure limits.<sup>45</sup> The Third Circuit observed that “the FCC is well positioned to solicit expert opinions and marshal the scientific data to ensure its standards both protect the public and provide for an efficient wireless network.”<sup>46</sup> And courts have confirmed that the agency has done so. For example, the D.C. Circuit upheld the

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<sup>38</sup> *Head v. New Mexico Bd. of Exam’rs in Optometry*, 374 U.S. 424, 430 n.6 (1963) (observing that the “Commission’s jurisdiction over technical matters ... is clearly exclusive”).

<sup>39</sup> *Robbins v. New Cingular Wireless LLC*, 854 F.3d 315, 319-20 (6th Cir. 2017) (noting that Congress “delegate[ed] the task of setting RF emission levels to the FCC”). Of course, government entities can and have participated in the notice-and-comment aspect of the FCC’s rulemaking. See, e.g., *City of Boston, Massachusetts*, ET Docket No. 19-226 (filed June 17, 2020).

<sup>40</sup> FCC, RF Safety FAQ, *What Biological Effects Can Be Caused By RF Energy?*, <https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety#Q5> (last visited October 7, 2020).

<sup>41</sup> Letter from Thomas M. Johnson, Jr., General Counsel, FCC, to Joseph H. Hunt, Assistant Attorney General, DOJ, N.D. Cal. No. C 19-05322 WHA, at 3 (Apr. 13, 2020) (citing 47 C.F.R. §§ 1.1307, 1.1310, 2.1091, 2.1093) (emphasis added), <https://docs.fcc.gov/public/attachments/DOC-363717A1.pdf>.

<sup>42</sup> Letter from Thomas M. Johnson, Jr. General Counsel, FCC, to Joseph H. Hunt, Assistant Attorney General, DOJ, N.D. Cal. No. 3:15-cv-02529 EMC, at 3-5 (June 22, 2020) (examining the adoption and evolution of the Commission’s RF exposure rules).

<sup>43</sup> *Id.* at 4-5 (quoting H.R. Rep. No. 204, 104th Cong., 1st Sess. Pt. 1, at 94 (1995)).

<sup>44</sup> *Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 88 (2d Cir. 2000).

<sup>45</sup> See, e.g., *id.* at 89 (rejecting an APA challenge to the FCC’s RF emissions decisions in the 1996 and 1997 proceedings).

<sup>46</sup> *Farina v. Nokia Inc.*, 625 F.3d 97, 126 (3d Cir. 2010); see also *id.* at 129 (confirming the Commission’s expertise to select an appropriate standard for RF limits).



agency's reliance on the views of expert agencies.<sup>47</sup>

Every court since 2005 that has addressed this issue has held that federal law preempts state action that challenges the safety of wireless devices including zoning decisions based on safety concerns. The Telecommunications Act itself has an express preemption provision that prohibits state or local regulation of cellular equipment based on alleged health effects.<sup>48</sup> Courts have also struck down state law regulation of RF emissions from cell phones based on alleged health effects as impliedly preempted by the FCC's regulation.<sup>49</sup> And most recently, a United States District Court in the Ninth Circuit held that federal law preempts the City of Berkeley's Ordinance requiring warnings at the point of sale.<sup>50</sup> Preemption, therefore, would invalidate many of the Recommendations, which if adopted, would subject the state and localities to expensive challenges and litigation, and almost certain defeat.

The minority does not oppose individuals or communities who want to convert to technology that better suits their needs, so long as those decisions do not conflict with the FCC's goal of the rapid deployment of wireless technology. We also do not oppose communities providing individuals with information about how to reduce their exposure to RF emissions, consistent with what the FCC already does. While individuals should have access to equipment to measure the levels in apartments they are contemplating renting or homes they want to purchase, testing should not be mandated. Access to the testing or the equipment to conduct the test could be provided by various groups such as home inspectors, real estate agents and the county cooperative extension. Similarly, we do not agree to establishing a State funded oversight group or state funding of the measurement equipment. Nor do we believe, as a practical matter, that any of

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<sup>47</sup> *EMR Network v. FCC*, 391 F.3d 269, 272-73 (D.C. Cir. 2004).

<sup>48</sup> 47 U.S.C. § 332(c)(7)(b)(iv); *See, e.g., Cellular Phone Taskforce*, 205 F.3d at 96 (interpreting the TCA to preempt a state and local government's power to regulate the placement, construction and modification of personal wireless services facilities on the basis of health effects of RF emissions); *Santa Fe Alliance for Public Health and Safety v. City of Santa Fe, N.M.*, 2020 WL 2198120, at \*7 (D.N.M. May 6, 2020) (noting the TCA explicitly preempts states and local governments from considering environmental effects of RF emissions in siting decisions).

<sup>49</sup> *Farina*, 625 F. 3d at 129 ("there is no indication . . . that either Congress or the FCC traditionally viewed state regulation of RF emissions as a necessary complement to federal regulation"); *Murray v. Motorola, Inc.*, 982 A.2d 764, 777-778 (D.C. 2009) ("insofar as Plaintiffs' claims rest on allegations about the inadequacy of the FCC's RF radiation standard or about the safety of their FCC-certified cell phones, the claims are preempted under the doctrine of conflict preemption.").

<sup>50</sup> *CTIA – The Wireless Association v. City of Berkeley*, No. 15-cv-02529-EMC, 2020 WL 5576135 (N.D. Cal. Sept. 17, 2020) (holding the Berkeley Ordinance "overwarns and stands as an obstacle to the accomplishment of balancing federal objectives by the FCC.").



the Recommendations have any chance of receiving funding.

The minority feels strongly that the full body of literature of the science on wireless technology was ignored. Furthermore, the Commission neglected to carry out its mandate to study “...the advantages and risks associated with 5G technology.”<sup>51</sup> Had this been done, the Commission would have been made aware of the significant economic and societal benefits that 5G is predicted to provide.<sup>52</sup> The minority has strong concerns that should the majority’s conclusions regarding 5G safety – despite their complete odds with the overwhelmingly majority of verified scientific evidence – lead to the enactment of any of the majority’s recommendations, the citizens of New Hampshire would be deprived of the enormous benefits of wireless innovation in a time when wireless connectivity could not be more important.

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<sup>51</sup> See HB 522: [http://gencourt.state.nh.us/bill\\_Status/billText.aspx?sy=2019&id=267&txtFormat=pdf&v=current](http://gencourt.state.nh.us/bill_Status/billText.aspx?sy=2019&id=267&txtFormat=pdf&v=current) (last visited October 14, 2020).

<sup>52</sup> Accenture predicts deploying the next generation of high-speed 5G wireless networks could create up to three million jobs and add approximately \$500 billion to U.S. GDP through direct and indirect potential benefits, [https://newsroom.accenture.com/content/1101/files/Accenture\\_5G-Municipalities-Become-Smart-Cities.pdf](https://newsroom.accenture.com/content/1101/files/Accenture_5G-Municipalities-Become-Smart-Cities.pdf) (last visited October 14, 2020).

# APPENDICES

**For all appendices see:**

<http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>

# **Techniques for keeping “Small” Cell Towers out of your front yard**

**by Robert Janku and others**

**mocoSafeG.org**

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# Regulating 5G small cell towers

## Overview

The Appeals Court rulings define the “effective prohibition” tests that can be used to determine if a cell tower is required or not required in a location.

Using these tests, a small 5G cell tower would fail to be needed in most locations. FCC tried to correct this failure with the “material inhibition” standard.

According to lawyer Andrew Campanelli the 2<sup>nd</sup> District Court in New York has rejected the FCC’s “material inhibition” standard. Likewise, according to lawyer Scott McCollough the 9<sup>th</sup> Circuit Court of Appeals in the Portland case have rejected the FCC’s “material inhibition” standard.

This means:

- the existing “effective prohibition” standard is in effect which is defined by the “significant gap” / “least intrusive” test
- to prevent a 5G small tower you need to show the street area has good voice and text service available. This is best done by drive by testing which you can get the telecom to do as part of the application process

Using the above guidelines, a jurisdiction can keep small cell towers out of the rights-of-way.

We end up with four lawyers agreeing that it is possible to keep cell towers out of the public rights-of-way.

## Regulating 5G small cell towers

### 9th Circuit Court of Appeals -- W. Scott McCollough, Esq.

W. Scott McCollough, Esc. comments on the 9th Circuit court as part of his assistance to Malibu residents to the Malibu, California City Council:

The 9<sup>th</sup> Circuit's August 12, 2020 decision vacated the FCC's "aesthetic" limits and imposed some useful limiting interpretations on other parts of the rules it sustained. One important aspect is that the Ninth Circuit refused to be cowed by the FCC's criticism of the Court's "significant gap" / "least intrusive" test and the FCC's effort to substitute a lower bar through the "material inhibition" standard." Compare Small Cell Order, 33 FCC Rcd at 9101-9110, with City of Portland, 2020 U.S. App. LEXIS 25553 at \*19-22, 34-43. The "significant gap" / "least intrusive" test remains alive and well in the 9<sup>th</sup> Circuit.

Starts with second sentence of last paragraph on Page 7 at:

<https://drive.google.com/file/d/10R9n6l-CWqZiNyg251n4ax6d3LMqMGHQ/view>

Malibu, that Malibu, is a beach front city with rich residents. Carriers were installing unsightly Cell towers in rights-of-way that blocked ocean views. Residents hired McCollough to convince city council that something could be done and to assist in writing new zoning rules. McCollough submitted the above document as part of his initial meeting with the Malibu council. McCollough accomplish both. One of the council members observed that Malibu is a trend setter and Malibu should take the lead in managers cell tower infrastructure.

bio McCollough suit in the DC Circuit Court of Appeals showed FCC was using incorrect accounting rules to divide cost between regulated state telecommunication companies and the unregulated parent organization.

# Regulating 5G small cell towers

## 2nd Circuit Court of Appeals -- Andrew Campanelli, Esc.

MocoSafG.org invited Andrew Campanelli, Esq. to answer our questions on Small Cell Tower zoning. Campanelli put forth to us on March 30, 2021 that the Court of Appeals the 2<sup>nd</sup> Circuit rejected the FCC's "material inhibition". Several Courts of Appeal have already defined the meaning of "effective prohibition." Campanelli explained that the FCC doesn't have the authority to change court decisions.

And so, a case came to a district court in New York in the 2nd Circuit, and a federal judge basically knocked down the FCC and said, listen, we applaud the FCC. We understand that it's not happy that Congress hasn't amended the Telecommunications Act to keep up with technology, but. Is my favorite words, "it's not up to the FCC to put words in the Telecommunications Act that are unfair." And so, the federal court ruled against the FCC and said you can't just reinterpret it. In that case, I can give you the citation. That was clear Wireless LLC versus Building Department of the Village of Lynbrook. The citation is 2012, Westlaw 826749. And the and the federal court actually said under such a circumstance, it is not up to the FCC to construe the TCA. to say something it does not say, nor up to the court to fight broadband communication encompassed by the law.

Transcript: the above paragraph starts as the last paragraph on page 3  
[https://drive.google.com/file/d/1t8OlhxAd7G\\_PekZzLYeR-fJkOu4JxDaD/view](https://drive.google.com/file/d/1t8OlhxAd7G_PekZzLYeR-fJkOu4JxDaD/view)

Video: Campanelli explains "effective prohibition"

<https://u.pcloud.link/publink/show?code=XZ3DhDXZW29t1VHIFvX3sQ9EQlpUYbCVdpDX>

Campanelli's full March 30th talk: <https://mocoSafeG.org/andrew-s-presentation>

Full transcript of Campanelli's Effective Prohibition talk:  
see Appendix A Campanelli on Effective Prohibition

bio Campanelli: We offer experienced consulting to local Planning Boards, Zoning Boards of Appeals, City Councils, and other local zoning authorities in the processing of zoning applications seeking approvals for the installation of cell towers, small cells, Distributed Antenna (DAS) Systems, and other wireless facilities.

<https://campanellipc.com/practice-areas/tca-based-zoning-application-review-consulting/>

## Regulating 5G small cell towers



## Regulating 5G small cell towers

### **City of Gaithersburg consultant -- Joseph “Joe” Van Eaton, Esq**

Under the advice of Joe Van Eaton, Esc. Gaithersburg, MD has banned cell towers in the rights-of-way in December, 2018.

#### [Adoption of revised regulations for the installations in rights-of-way](#)

bio Van Eaton is advising Montgomery County. Lead lawyer in Portland vs. FCC. Crown Castle raised about every complaint they could against the City of Rye. Their lawyer wrote over 200 paragraphs of supposed violations of FCC rules and the law. To win this law suit, City of Rye employed outside counsel Van Eaton of Best, Best & Krieger.

## Regulating 5G small cell towers

### City of Gaithersburg resident -- Sheldon Pine, Esq.

In early 2019, Pine gave a presentation to the City of Gaithersburg Mayor and council meeting. He submitted supplemental document which explains the legal background behind zoning. With the rejection of “material inhibition”, his comments should be relevant today.

This is from my transcript of Sheldon L. Pine’s testimony on March 4<sup>th</sup>, 2019 to the City of Gaithersburg.

Contrary to what they've said [ cell tower companies] refusing to allow the placement of cell towers in a way that maximizes cell tower company returns and minimizes their costs which is what they want is not an effective prohibition of service a violation of what would only occur if there is an actual, actual prohibition of service and effective prohibition of all service where a community is already served.

For a full transcript of Pine’s talk see Appendix B below.

Video of Pine’s talk: <https://www.youtube.com/watch?v=xCulOxxwirM&t=27m34s>

Sheldon submitted a supplemental paper to explain the legality of Gaithersburg’s use of Effective Prohibition. See Appendix C

bio Pine 1981 graduate of Yale Law School and clerked for the 11th Circuit Court of Appeals

### Appendix A – transcript of Campanelli talk on Effective Prohibition

#### Effective Prohibition

So, one of the issues they want me to discuss today is the issue of the effective prohibition under the Telecommunications Act and what local governments can and cannot do in light of the recent FCC interpretive orders and the City of Portland case. It's probably one of the hottest issues in Telecommunications Act cases right now.

To give you an accurate answer, I have to first talk a little bit about the Telecommunications Act and Congress's intent, because it's critical to any understanding of exactly what is at work here. So back in 1996, when Congress enacted the Telecommunications Act of 1996, Congress actually considered giving the FCC the power to control the placement of wireless facilities. At the end of the day, what Congress did was almost the opposite. The very first paragraph of C-7 of the act is entitled C-7-A. It's entitled General Authority. And in that provision, they preserved what they described as the general authority of state and local governments to control the siting placement, installation, construction and modification of wireless facilities.

So, the general rule is local governments have the power to control the placement of wireless facilities, which would include cell towers or macro cells, small cells and or Distributed Antenna Systems, DAS. So that's the general rule. That's never changed since 1996. Then they proceeded to adopt C-7-B, which imposes five, what I call procedural limitations upon the ability of governments to regulate the placement of wireless facilities. Now, one of those restrictions, if you will, is the prohibition language. And what it says basically is local governments cannot prohibit or effectively prohibit the provision of personal wireless services.

Not surprisingly, immediately when this was enacted, site developers and carriers started filing lawsuits every time an application to build a new cell-tower, wireless facility was denied by a local government. They'd say, aha, you're effectively prohibiting us from providing personal wireless service. And the Telecommunications Act was less than crystal clear as to what constitutes an effective prohibition. Theoretically, a one effective prohibition would occur if someone was to say, OK, you can't put a cell tower in a residential district and

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then classify every property in the entire county as residential. That's an effect of prohibition. Can't do that.

But it took only two years from 1996 the enactment for these lawsuits to get up to the United States Circuit Courts of Appeals. For those of you who aren't familiar with the federal court system, it essentially consists of three levels, the district court level or the trial court level where all federal lawsuits start. Then if you want to appeal from a district court, you [go] up to the United States Circuit Court of Appeals. There are 13 circuit courts that cover the entire country — and the only court above them is the United States Supreme Court.

It only took two years for this effective prohibition litigation to reach the Circuit Courts of Appeals and the Circuit Courts of Appeals. Each adopted their own tests, which are fairly consistent across the country. And what they said was this for an applicant to claim that a denial of their particular application for a particular installation is tantamount to an effective prohibition and thus would violate the Telecommunications Act, they have to prove two things. Number one, they have to prove that an identified wireless carrier suffers from a significant gap in their personal wireless services.

That means that there's a physical geographic area where they don't have personal wireless services. Then they must also number to prove that their proposed installation is the least intrusive means of remedying that gap or the only feasible means of remedying that gap, or that they've looked at other locations, possibly less intrusive locations, and they're not feasible. So, they're all kind of the same.

And federal courts across the country have been interpreting the effective prohibition language this way for more than twenty-four years. All the circuits including the Fourth Circuit, just so you're where you're located in the Fourth Circuit, that means that the Fourth Circuit Court of Appeals has jurisdiction over any trial courts, any district courts in your state.

That's very important because if someone was to file a lawsuit claiming now that an application was denied in a way that violated the effective prohibition, the district court in your state would not be bound necessarily by any recent FCC new interpretation.

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They would be bound by the 4th Circuit because the Fourth Circuit sets precedent there above the district courts. That's one of the first things that's hard-to-get local governments to understand. The ultimate determination is going to be made if someone files a lawsuit by a district court that is bound by the superior decisions of the circuit court.

Now, the Fourth Circuit. They're one of their lead cases with *Cellco Partnership versus Board of Supervisors of Fairfax County*, the citation, since you're quoting this, is 140 F Sub 1/3 548. The decision came down in 2015. And the Fourth Circuit said, quote, To, prevail on a prohibition of service claim, a wireless carrier must show either that a local governing body has a general policy that essentially guarantees rejection of all wireless facility applications, or that denial of an application for one particular site is tantamount to a general prohibition of service. Under the latter theory, a plaintiff must demonstrate both a legally cognizable deficit and coverage amounting to an effective absence of coverage and a lack of reasonable alternative sites to provide coverage.

Now. Significantly, the Federal Fourth Circuit also embraces the view of other circuits that once a carrier has some level of service in the area, the power of local governments to regulate these things becomes much broader. So, if, for example, a carrier has 4G service and 5G 4G service and has great coverage, the government has more power, the local government to regulate any additional facilities, irrespective of whether it's a 4G or 5G.

You see, I have to teach local governments on a regular basis and what the federal courts say and I've said since 1996, when Congress enacted the Telecommunications Act of 1996. It created a balancing, deliberately. It tried to balance the country's interest in the rollout of wireless infrastructure against the interests of local governments, enforcing the local zoning codes to prevent the irresponsible placement of wireless facilities and the unnecessary adverse impacts which invariably follow. If you put a cell tower 10 feet from someone's bedroom window, it's going to adversely impact their home. Forget about the radiation effects, but it's going to reduce property values, have an adverse aesthetic impact, probably won't have it, won't have a sufficiently safe fall zone, things like that. So federal courts have since 1996 recognized this balancing.

And so, when you're talking about an effective prohibition, federal courts keep that in mind. When does something constitute an effective prohibition? And we'll talk about what they have to prove and things like that. So, for twenty-four years,

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that's what the Fourth Circuit says. You've got to prove you have a gap in service and there's no alternative site that can fill the gap.

Now, within the context of 5G rollout, you're not really worried so much about the carriers as much as site developers. For those of you who don't know, site development companies are companies that don't provide any personal wireless service. You can't get a telephone contract with a site developer there in the gauge in the business of building wireless infrastructure for profit. They build facilities and then they lease space or capacity on these facilities to wireless carriers like your AT&T, Verizon, your T-Mobile. They don't look for the best place to put towers, meaning the least intrusive locations. They look for the cheapest locations.

When they come in right now -- under in the 5G rollout, they are looking to build wireless facilities where there is no 5G coverage. They're building it in advance so that if and when a carrier wants to go into an area for 5G coverage, then they already have the infrastructure. Now, as you might suspect, you can't have a gap in coverage if you don't have any coverage. They can't claim site developers that they have a gap in coverage because they don't provide any wireless service. And if they go in the area where there is no 5G coverage because nobody's offering it, again, they can't claim that it's an effective provision because you can't have a cap in coverage that doesn't exist.

So, the wireless industry went to the FCC for help because they knew they couldn't pass this test of all the circuit courts. And lo and behold, the FCC doing what they do best, cater to the wireless industry. And what they did is they said in September of 2018, we're going to come up, we're going to reinterpret the effective prohibition language of the Telecommunications Act, not because the federal law was changed. The Telecommunications Act has not been changed. They simply said we're going to come up with a new interpretation because Congress has not amended the Telecommunications Act to keep up with the changes in technology.

Now, it's critical to understand this is not the first time this has happened. The FCC tried to do this once before, and that was in the context of broadband. The FCC initially, when broadband came into existence, the FCC said, well, we read the Telecommunications Act is covering personal wireless services. It doesn't cover broadband. Then when the wireless industry uses their clout with the FCC, the FCC decided to reinterpret this effective prohibition or actually reinterpret the

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language of the Telecommunications Act to say no, we reinterpreted and it does cover broadband.

And so, a case came to a district court in New York in the 2nd Circuit, and a federal judge basically knocked down the FCC and said, listen, we applaud the FCC. We understand that it's not happy that Congress hasn't amended the Telecommunications Act to keep up with technology, but. Is my favorite words, "it's not up to the FCC to put words in the Telecommunications Act that are unfair." And so, the federal court ruled against the FCC and said you can't just reinterpret it. In that case, I can give you the citation. That was Clear Wireless LLC versus Building Department of the Village of Lynbrook. The citation is 2012, Westlaw 826749. And the and the federal court actually said under such a circumstance, it is not up to the FCC to construe the TCA. to say something it does not say, nor up to the court to fight broadband communication encompassed by the law.

Well, the FCC is at it again. Now, they say we're going to reinterpret the Telecommunications Act and we are going to reject the US Circuit Court of Appeals decisions that rely solely and that's the word they use solely upon the effective prohibition, least intrusive means test. We, the FCC now interpret an effective prohibition to occur if they can show that denial of the application would materially inhibit the provision of personal wireless services. And by the way, I have no idea what that's supposed to mean. And they can show that if they need a new facility, either to simply improve existing service or to add a new service. If this decision with this interpretation was actually upheld by the federal courts, it would all but destroy the balancing of interests that was created by Congress. So that interpretation is actually directly contrary to the intent of the Telecommunications Act and what Congress intended when it drafted it.

So, what has happened now since that FCC ruling has come down? Well, many local municipal attorneys who really know very little about the Telecommunications Act say, oh, this is the new law. We have to follow this. Other local attorneys. Drink the Kool-Aid that's fed to them by the wireless industry saying, no, now we've got to we're bound by the FCC, that's simply not the case.

So, let's talk about what has happened since then. You've got cases like City of Portland. You've got the T-Mobile case and the Third Circuit, but of greatest



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import, you have Crown Castle in the Second Circuit because Crown Castle is the only court that actually ruled directly on that issue.

So, let's talk about the most. The one that everybody talks about is Portland, city of Portland and city of Portland. The 9th Circuit Court of Appeals. Entertained a challenge to this new ruling, but significantly, it did not directly address the effective prohibition challenge or area of that FCC interpretive order. That case was focused on the fees and the timing, because in that ruling, two of the things the FCC did was it said an effective prohibition can occur if you if local government charges too much money for wireless carriers or site developers to put on public polls and rights of way or if they take too long to entertain applications for small cells and DAS nodes.

And that's really what the 9th Circuit addressed in City of Portland. It did not directly address, as none of the other courts did, except for the Second Circuit, this effective prohibition argument. So, in my view, the city of Portland has very little effect on the effect of prohibition, which, quite frankly, remains in full force and effect as far as I'm concerned, including in the 4th Circuit. So, someone asked me about the Third Circuit, one of the cases that was called to interpret. Now the effective prohibition since the City of Portland case and since the FCC ruling was T-Mobile NE LLC vs. City of Wilmington. And that case, the citation is. 2020 Westlaw 1245306 and in City of Wilmington excuse me and T-Mobile Northeast vs. City of Wilmington, the Third Circuit did the same thing that the City of Portland did, and it punted.

It avoided the issue. Here's how the court, the Third Circuit and T-Mobile said, OK, so the plaintiff is arguing now there's a new standard. This new you can't go with the least intrusive means, effective probation standard. The new standard under the FCC order would be would give the wireless providers more leeway. They only have to show material inhibition.

However, we don't have to get to that. And the reason is because we're bound by the law as it existed when this case came into existence, because the FCC ruling, whatever it may be, can't be applied retroactively.

So, the court in the 3rd Circuit applied the effective prohibition, least intrusive means standard and never decided whether or not the new ruling is actually binding upon them. So, it avoided the issue, as did the city of Portland, as did the 10th Circuit.

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Nobody actually ruled directly on the FCC ruling, with one exception, and that is District Court in New York. That ruling came in the case of Crown Castle, NG E. LLC versus Town of Hempstead. The citation is 2019 Westlaw 5188923. In that case, Crown Castle, which is probably one of the most aggressive, largest site developers in the country. They're probably the biggest. And I've gone up against them more times than I can count. They brought a lawsuit in a federal district court and they argued that here's the new rule. If we want to install small cells or nodes, local governments cannot apply the effective prohibition under the old test, the significant gap in service, least intrusive means and the town towns attorneys didn't know how to address it. We're not really sure what to do. So, we think we should get guidance from the Second Circuit.

So, both parties to the lawsuit ask the district court judge to send the case up for what's called an interlocutory decision from the 2nd Circuit Court of Appeals, saying we need the 2nd Circuit Court of Appeals to determine if the ruling is binding or if the district court is bound by the 2nd Circuit.

The federal judge said exactly what I expected he would, he said. In his words,

The parties failed to meaningfully refute the controlling effect of this Second Circuit precedent, plaintiff's solitary reference to the controlling wealth decision suggests that the court should reject the analysis of the Court of Appeals because the commission further rejected the Second Circuit's view. However, this position misperceives the role of the FCC in interpreting the law.

Basically, the court said we don't have to ask the FCC, we are a district court, we are bound by the 2nd Circuit, not by the FCC. The Second Circuit has already interpreted what the effective prohibition language of the Telecommunications Act means. And we've been relying upon that in federal courts across the country have been relying upon that for twenty-four years. The FCC has no power to simply come up with its own new interpretation, not because the Telecommunications Act has changed, but because in the FCC's view, Congress has been lazy. They have an update of the act to keep up with modern technology. That's too bad the FCC can't, in one pen stroke, wipe out twenty-four years of judicial precedent. It's federal courts that get to interpret the law and they've interpreted that effective prohibition language for twenty-four years. And when I say they at least nine of the 13 circuit courts have interpreted what it means and that's what's binding on the district courts.

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So, if, for argument's sake, someone filed an application to build a wireless facility and a local government in your state denied the application and the applicant said, we're going to sue you under the Telecommunications Act because the FCC says we're going to have to prove significant gap, least intrusive means. And that case went to a district court because that's the only place they can file it. Theoretically, they could file in a state court, but they would never do it. So, we'd file it in federal court. Well, theoretically, that district court would recognize they're bound by the judicial precedent of the circuit court above them, which in your state is the Fourth Circuit, which embraces the effective prohibition interpretation that's been in existence for twenty-four years.

So, I'm sorry for the long-winded explanation, but it's important to understand this would also be consistent. Upholding the Fourth Circuit's decision would be consistent with the balancing test which Congress intentionally created and which every federal circuit court always mentions. We have to view this against the backdrop that there's supposed to be a balancing.

And it's only logical because if you take the FCC's logical interpretation of what they're claiming is the new effective prohibition within the context of the 5G rollout, I've heard site developers say they want to build 5G facilities every one hundred feet in residential neighborhoods. Why? Because the 5G signal doesn't travel as far as 4G signals. So, who could argue that this would not upset the balancing if all the carriers have perfect 4G coverage and still they can interpret the Telecommunications Act in such a way? What if they came out with 12G and said we've got to put a cell tower in front of everybody's front door? Well, that's a new service. Theoretically, under the interpretation offered by the FCC, you'd have to allow it. And that's nonsense. It makes absolutely no sense.

So, my biggest fear is not that local governments will get sued in federal courts by site developers or carriers, citing the FCC rule. My biggest fear is, as I've seen in the past, when they do, local governments will hire attorneys who don't know any of this. They'll hire an attorney not because of the legal acumen, because they're friends with the town supervisor and they'll put up a half-hearted challenge. They won't know what they're talking about and they'll lose and set a bad precedent. That's the biggest danger to local governments right now.

So, that is my discussion of the effect of prohibition and the effect of Portland and the FCC ruling.

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### Appendix B – Transcript of Pine’s talk

My name is Sheldon Pine. I resided ... in our city [City of Gaithersburg] I'll preface this by saying I'm a 1981 graduate of Yale Law School and clerked for the 11th Circuit Court of Appeals and a practiced regulatory law for 35 years since graduating from law school. That's a preface to say I want to talk about the cell tower regulations. I want to take a few valuable seconds to thank [City Attorney] Lynn [Board], [Deputy City Attorney] Frank [Johnson] and [Deputy City Manager] Dennis [Enslinger] because I think they've done an extraordinary job with a very complex subject and had produced very nuanced and very complex regulations. There's been a lot of contest about what the regulations should say and a whole variety of subject matters. I gave a written statement which is five single spaced pages this deal strictly with the law. I don't have enough time to talk about that but I want to make three quick legal points and I'm broadly supportive of the regulations as proposed. First, the zoning power really is the power to preserve the character of the community [with] concomitant obligation to heed the wishes of the community. That's what we're talking about when we talk about zoning. It's a quintessential power of local government as the Supreme Court said the power to zone and control land use is undoubtedly broad and it's proper exercise and this is an essential aspect of achieving a satisfactory quality of life in both urban and rural communities. That's a famous zoning case called Mount Schad.

Specifically as the second point, I'd like to make relating to the cell tower zoning issue. It's definitely the law of the United States Court of Appeals for the 4th Circuit which governs Maryland and the contiguous state. Definitely, the law that preserving the character of the community and heeding the legitimate wishes of the community with respect to the location of zoning cell towers are legitimate aspects of the zoning process. In addition to being core zoning values nothing in any FCC regulation short of an action by the city that actually totally prohibits cell tower servers can override the power of the city to zone. And finally, and that's further to amplify this point. I mean we see this in the controversy over the regulations with two of the cell tower companies. Contrary to what they've said refusing to allow the placement of cell towers in a way that maximizes cell tower company returns and minimizes their costs which is what they want is not an effective prohibition of service a violation of what would only occur if there is an actual, actual prohibition of service and effective prohibition of all service

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where a community is already served. There are three recent fourth circuit court of appeals cases that hold that and nothing has changed that piece of the law.

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## Appendix C – Pine’s history of Effective Prohibition through court cases

### Comments of Sheldon L. Pine, Esq., Concerning Draft Regulations Establishing Application Processes, Requirements, Notices and Appeals for Installation of Facilities Within City Controlled Rights of Way

[REDACTED], Gaithersburg, MD 20878  
[REDACTED]  
[REDACTED]

My name is Sheldon L. Pine. I reside at 35 Treworthy Rd., Gaithersburg, Maryland 20878. I reside in the Westleigh community, and am one of the Petition Residents of Westleigh that previously registered strong and unanimous opposition to the Crown Castle (“CCI”) proposal to locate three cell towers in portions of the municipal right-of-way (ROW) that happened to be in three of our neighbors’ front lawns.

By way of background, I am a *summa cum laude* graduate of Yale College, and a graduate of Yale Law School. After law school, I clerked for then-Chief Judge Gerald Bard Tjoflat of the United States Court of Appeals for the Eleventh Circuit. I have been in private practice for 36 years, specializing in regulatory and administrative law. I believe I am well qualified to address legal aspects of our city’s draft regulations, particularly the aspects focused on wireless facilities.

I have only two substantive legal points to make, both addressing incorrect arguments made by CCI regarding the current draft of the regulations. Before making those points, I think it is necessary to state that City staff – **City Attorney Lynn Board, Deputy City Attorney Frank Johnson and Deputy City Manager Dennis Enslinger** – have done superb work in producing the revised draft regulations. By any measure, the quantum of work involved is prodigious. What is more, the technical-engineering and legal-regulatory complexities involved in these regulations well exceed the usual requirements asked of city staff. While the petition residents of Westleigh do not necessarily endorse every detail in the draft,<sup>1</sup> there is no doubt that the work is (1) outstanding, and (2) generally responsive to the numerous concerns expressed by Gaithersburg citizens in the several hearings relating to the cell tower matter. We are particularly grateful to Ms. Board, Mr. Johnson and Mr. Enslinger for their “above and beyond” efforts here.

The PowerPoint summary of the draft regulations indicates that the “proposed modifications do not change the current regulations with regard to the placement, spacing or height of wireless facilities within the ROW.” The Westleigh residents strongly endorse this position because it is our understanding that the regulations do not allow the installation of cell tower facilities in purely residential areas where there are no above ground utilities and the only light poles installed are of the ornamental variety that do not support cell towers and the ancillary equipment.

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<sup>1</sup> There is particular concern about the increased size of certain of the wireless facility equipment authorized in the draft regulations. Another Westleigh resident, Radio Frequency Engineer Steven Raphael, has addressed some of these technical concerns in his written testimony and comments.

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There are two important points of contention between the draft regulations and Crown Castle ("CCI") (and perhaps other cell tower service advocates such as AT&T and T-Mobile). On both points, CCI seeks to use FCC language interpreting the Telecommunications Act term "effective prohibition" of service as a stick to compel the City to override traditional municipal zoning concerns such as citizens' opinions, preservation of the traditional (residential) character of the community and aesthetics. CCI is wrong in this regard.

The authoritative interpretation of the Telecommunications Act language is that of the United States Court of Appeals for the Circuit that includes Maryland, that is, the Fourth Circuit Court of Appeals. The Fourth Circuit directly and strongly endorses the legitimacy of inclusion of citizen concerns and, specifically, traditional community aesthetic concerns in these important zoning decisions. What is more, the Fourth Circuit has declared that the cell tower advocates' burden of showing "effective prohibition" is an extremely heavy one.

CCI raises the specter of "effective prohibition" every time the City and the draft regulations do not accede to their demands, however unreasonable those demands may be and however accommodating City staff has tried to be. CCI's assertion of "effective prohibition" is without foundation and cannot stand. CCI and, sad to say, sometimes the FCC in its ardor to support the cell tower companies, overlook the Supreme Court's statement in Schad v. Mount Ephraim, 452 U.S. 61, 68 (1981):

"The power of local governments to zone and control land use is undoubtedly broad and its proper exercise is an essential aspect of achieving a satisfactory quality of life in both urban and rural communities."

The City's power to preserve our quality of life must be preserved.

## **I. Regulation Section (I)(4)(D) Prohibiting Cell Towers Where They Would Be Inconsistent With, Inter Alia, the General Character of the Community and of the Neighborhood is Entirely Consistent with the Controlling Federal Statutes**

CCI objects to just about every aspect of this section of the regulation. It objects to language about over-concentration of poles, excessive number of poles and inconsistency with the general character of the neighborhood. In its letter to the City, CCI even objects to a limitation that poles must be spaced at least 500 feet apart(!) (this would be a tremendous concentration of poles by any reasonable measure). CCI claims that these limitations work an effective prohibition of service violative of the Telecommunications Act of 1996. This is, quite simply, wrong.

In T-Mobile Ne. LLC v. Loudoun Cty. Bd. of Supervisors, 748 F.3d 185, 198 (4th Cir. 2014), the United States Court of Appeals for the Fourth Circuit restated the standard for a claim of this kind:

To show that a local government regulation or decision "prohibit[s]" service or has "the effect of prohibiting" service, the telecommunications provider may demonstrate that the regulation calls for the rejection of all wireless facilities -- i.e., that "a local governing body has a general policy that effectively guarantees rejection of all wireless facility applications." **T-Mobile**



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**Northeast LLC v. Fairfax Cnty. Bd. of Supervisors, 672 F.3d 259, 266 (4th Cir. 2012).** Or, if the local government rejects a facility at a single site, the telecommunications provider may demonstrate that the rejection was "tantamount to a general prohibition of service." **Id.** (internal quotation marks omitted). To make that showing, the telecommunications provider must demonstrate (1) **that there is an "effective absence of coverage" in the area surrounding the proposed facility, and** (2) that there is a "lack of reasonable alternative sites to provide coverage" or that "further reasonable efforts to gain approval for alternative facilities would be 'fruitless.'" **Id. at 268** (citing Albemarle Cnty., 211 F.3d at 87-88). **This burden is "substantial and is particularly heavy when . . . the [telecommunications provider] already provides some level of wireless service to the area."** **Id.** (emphases added).

Our court of appeals has been quite clear that the standard for a showing of effective absence of coverage is quite stringent, and the burden of proof on the cell tower provider to satisfy that standard is very heavy. The city's refusal to allow a cell tower provider to maximize its revenue by saturation of coverage, erecting towers in a neighborhood with no aboveground utilities, placing poles every several hundred feet etc., is **not** an effective prohibition of coverage. Quite the contrary,

we emphasize that a plaintiff's burden to prove a violation of subsection (B)(i)(II) [the effective prohibition section of the Telecommunications Act of 1996] is substantial and is particularly heavy when, as in this case, the plaintiff already provides some level of wireless service to the area. Albemarle County, 211 F.3d at 87-88. This substantial burden is consistent with the plain language of subsection (B)(i)(II), which is violated only when a local governing body's decision prohibits or has the effect of prohibiting personal wireless services. *See Albemarle County*, 211 F.3d at 88 n.1. **Importantly, the language of this subsection does not encompass the ordinary situation in which a local governing body's decision merely limits the level of wireless services available because, as we have explained, the Act cannot guarantee 100 percent coverage. *Id.***

T-Mobile Ne. LLC v. Fairfax Cty. Bd. of Supervisors, 672 F.3d 259, 268 (4th Cir. 2012) (emphasis added).

The law is clear that the City need not acquiesce in the cell tower companies' demands that every other consideration – character of the community, aesthetics, community sentiment – be subordinated to the cell tower companies' demands that the area be saturated with coverage. Where there is already some coverage, the cell tower provider's burden to show an effective prohibition of coverage is all but insurmountable. *See T-Mobile Ne. LLC v. Howard Cty. Bd. of Appeals*, 524 F. App'x 9, 14-15 (4th Cir. 2013) ("T-Mobile does not dispute that there is some level of wireless coverage in the area. J.A. 450-56 (noting, in an expert report prepared for and relied upon by T-Mobile, that there is not "reliable" in-building and in-vehicle wireless coverage in the area served by the proposed site). Thus, T-Mobile's burden to show a lack of reasonable alternatives is "particularly heavy." Fairfax Cnty., 672 F.3d at 268."). T-Mobile failed to show that it had exhausted every other avenue for showing that alternative siting was impossible, and thus its claim failed.

# Regulating 5G small cell towers

In short, notwithstanding the claims of cell tower companies and the potential interpretations of an FCC inclined to favor maximum cell tower placements, absent statutory amendments, the authoritative opinions of the United States Court of Appeals for the Fourth Circuit control the issue of “effective prohibition”. The standard is extremely stringent, and the burden of proof rests entirely on the cell tower companies and cell service providers. Nothing in the new FCC regulations alters those realities. For a recent and comprehensive summary of the controlling legal standards, standards that unequivocally support the City’s draft regulations, see New Cingular Wireless PCS, LLC v. Fairfax Cty. Bd. of Supervisors, 674 F.3d 270, 276 (4th Cir. 2012).

## **II. There is Ample Legal Support for the Council and Its Cell Tower Regulations to Heed Community Concerns Based on Aesthetic Considerations and the Character of the Community**

Over the course of several public hearings concerning cell tower permit requests and these draft regulations, the Council has heard strong opposition from communities concerned that tower sitings would be inconsistent with the character of the community and with aesthetic considerations. These concerns have been particularly strong in communities where all utilities are located below ground, and the utility easements in these communities, from their very inception, indicate that all utilities are to be located below ground. It is likely for that reason that the street lights in these communities are entirely ornamental in character and not of the so-called “cobra”-like style.

An unbroken line of Fourth Circuit Court of Appeals precedent supports the Council’s consideration of these concerns in deciding upon cell tower sitings, and also in designing regulations addressing these issues. These cases are anchored by the Fourth Circuit’s important decision in AT&T Wireless Pcs v. City Council of Va. Beach, 155 F.3d 423 (4th Cir. 1998). The Virginia Beach situation mirrors our situation in Gaithersburg to a great degree. Thus, according to the court of appeals,

Similar sentiments emerged at the City Council’s March 25, 1997 meeting. *See* J.A. at 104 (Mr. Alcaraz expressing concern over towers “in a residential environment” and Mr. Shank stating that “the proper place for telecommunication towers is an industrial or commercial area” and referring to the towers as “unsightly”). A representative of a local community group covering 425 homes testified to his opposition on the grounds that the towers would be “visual pollution” and “unsightly,” notwithstanding appellees’ efforts to soften their impact. J.A. at 105 (Mr. Haven).

The above evidence is more than enough to demonstrate the real, and surely reasonable, concerns animating the democratically elected City Council’s ‘discrimination.’ None of those who testified suggested any ill will toward appellees, nor did any of them demonstrate dislike for digital service as opposed to analog. On the contrary, they hoped that towers might be located in a nearby commercial zone. *See* J.A. at 69, 75.

Id. at 427-28. The court of appeals upheld the Virginia Beach Council’s decision to deny the permits in question.

## Regulating 5G small cell towers

Some 15 years later, the Fourth Circuit, in the Cingular Wireless and T-Mobile decisions discussed above, recapitulated the analysis of the Virginia Beach decision and sustained it in the later settings involved in each case. In T-Mobile, 672 F.2d at 270-71, the court explained “we cited a House of Representatives Conference Report, in which the conferees expressed their intent that [the statute] provide ‘localities with the flexibility to treat facilities that create different visual, aesthetic, or safety concerns differently to the extent permitted under generally applicable zoning requirements even if those facilities provide functionally equivalent services.’ *Virginia Beach*, 155 F.3d at 427 n.3 (quoting H.R. Rep. No. 104-458, at 208 (1996) (Conf. Rep.)). We also described the evidence in the record supporting the local governing body's decision, noting both the significant opposition voiced by community members based on aesthetic concerns, and the lack of evidence suggesting ‘ill will’ toward the applicants or their services. *Id.* at 427-28.”

The analysis in Cingular Wireless is quite similar. According to the court,

‘a reasonable mind’ should be understood as ‘the mind of a reasonable legislator.’ *Nottoway County*, 205 F.3d at 694. Under this reasonable-legislator standard, ‘[i]t is not only proper but even expected that a legislature and its members will consider the views of their constituents to be particularly compelling forms of evidence.’ *Virginia Beach*, 155 F.3d at 430. Hence, ‘[i]f a legislative body denies a permit based on the reasonably-founded concerns of the community, then undoubtedly there is substantial evidence to support the body's decision.’ *Nottoway County*, 205 F.3d at 695 (internal quotation marks and emphasis omitted).

Cingular Wireless, 674 F. 3d at 275.

The law is thus clear that the City Council acts rationally and reasonably in heeding traditional community zoning concerns when drawing regulations or assessing permit requests in the cell tower context. The draft regulations are faithful to the law, and should be finalized in accordance with the existing draft.

**Respectfully submitted,**

**Sheldon L. Pine**

ZTA 19-07

# Small Cell Towers: Unneeded and Unwanted

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July 5<sup>th</sup>, 2021

Electronic copy of this paper:

<https://rebrand.ly/SmallCellTowers-UnneededAndUnwanted>





I attest and affirm that the following statements are true and within my personal knowledge.



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## Overview

There is no longer a need for cell towers in the residential right-of-way. In a CNBC interview, Lowell McAdam former Chairman and former CEO of Verizon said 5G cellular towers could be 2,000 feet from a home. This distance allows cell tower placement in less obtrusive locations than people's front yards.

We need to figure out how to maintain citizen's property values so the current tax rates will generate sufficient County real estate revenue. Even with the cell tower companies paying 10 percent of revenue for cell towers in the utility right-of-way, my back of the envelop calculations shows the county losing somewhere between a half a million dollars to one and a half million in revenue per year on the installation of 61 DAS towers.

The cell towers proposed by several cell tower companies are obsolete. Zoning proposals need to be adjusted to the new reality that 5G cell towers can be 2,000 feet from our homes. Don't allow obsolete cell towers to be placed in residential neighborhood right-of-ways.

This paper is written from the perspective of a Westleigh resident in North Potomac, Montgomery County of Maryland.

## Promises

Who promised me that all my utilities would be underground? Isn't it the council through zoning?

How is the county council living up to their commitment? What's so hard to understand? The proposed cell towers in the right-of-way do not meet aesthetic values in communities with all underground utilities. End of story.

Real estate agents calculate that buyers like myself paid a premium for a neighborhood with all underground utilities. I do not mind. I do not mind paying for clear vistas. I do not mind paying extra for the Internet if I continue to have all underground utilities. I do not want my investment to be devalued which will be much more costly to me than paying a few extra dollars for the Internet.

4<sup>th</sup> Circuit -- Allows jurisdictions to forbid cell towers in right-of-way  
Sheldon L. Pine's City of Gaithersburg presentations



This is my transcript of Sheldon L. Pine's testimony on March 4<sup>th</sup>, 2019 to the City of Gaithersburg. In summary, he states that the United States Court of Appeals for the Fourth Circuit, Maryland's court, allows jurisdictions to reject cell towers in the utility right-of-way as long as cell towers are allowed in other places.

My name is Sheldon Pine. I resided ... in our city [City of Gaithersburg]

I'll preface this by saying I'm a 1981 graduate of Yale Law School and clerked for the 11th Circuit Court of Appeals and a practiced regulatory law for 35 years since graduating from law school. That's a preface to say I want to talk about the cell tower regulations. I want to take a few valuable seconds to thank [City Attorney] Lynn [Board], [Deputy City Attorney] Frank [Johnson] and [Deputy City

Manager] Dennis [Enslinger] because I think they've done an extraordinary job with a very complex subject and had produced very nuanced and very complex regulations. There's been a lot of contest about what the regulations should say and a whole variety of subject matters. I gave a written statement which is five single spaced pages this deal strictly with the law. I don't have enough time to talk about that but I want to make three quick legal points and I'm broadly supportive of the regulations as proposed. First, the zoning power really is the power to preserve the character of the community [with] concomitant obligation to heed the wishes of the community. That's what we're talking about when we talk about zoning. It's a quintessential power of local government as the Supreme Court said the power to zone and control land use is undoubtedly broad and it's proper exercise and this is an essential aspect of achieving a

satisfactory quality of life in both urban and rural communities. That's a famous zoning case called Mount Schad.

Specifically as the second point, I'd like to make relating to the cell tower zoning issue. It's definitely the law of the United States Court of Appeals for the 4th Circuit which governs Maryland and the contiguous state. Definitely, the law that preserving the character of the community and heeding the legitimate wishes of the community with respect to the location of zoning cell towers are legitimate aspects of the zoning process. In addition to being core zoning values nothing in any FCC regulation short of an action by the city that actually totally prohibits cell tower servers can override the power of the city to zone. And finally, and that's further to amplify this point. I mean we see this in the controversy over the regulations with two of the cell tower companies. Contrary to what they've said refusing to allow the placement of cell towers in a way that maximizes cell tower company returns and minimizes their costs which is what they want is not an effective prohibition of service a violation of what would only occur if there is an actual, actual prohibition of service and effective prohibition of all service where a community is already served. There are three recent fourth circuit court of appeals cases that hold that and nothing has changed that piece of the law.

<https://www.youtube.com/watch?v=xCulOxxwirM&t=27m34s>

Here is a copy of written testimony as Sheldon mentioned in his talk.

**Comments of Sheldon L. Pine, Esq., Concerning Draft Regulations Establishing Application Processes, Requirements, Notices and Appeals for Installation of Facilities Within City Controlled Rights of Way**

[REDACTED], Gaithersburg, MD 20878  
[REDACTED]  
[REDACTED]

My name is Sheldon L. Pine. I reside at 35 Treworthy Rd., Gaithersburg, Maryland 20878. I reside in the Westleigh community, and am one of the Petition Residents of Westleigh that previously registered strong and unanimous opposition to the Crown Castle (“CCI”) proposal to locate three cell towers in portions of the municipal right-of-way (ROW) that happened to be in three of our neighbors’ front lawns.

By way of background, I am a *summa cum laude* graduate of Yale College, and a graduate of Yale Law School. After law school, I clerked for then-Chief Judge Gerald Bard Tjoflat of the United States Court of Appeals for the Eleventh Circuit. I have been in private practice for 36 years, specializing in regulatory and administrative law. I believe I am well qualified to address legal aspects of our city’s draft regulations, particularly the aspects focused on wireless facilities.

I have only two substantive legal points to make, both addressing incorrect arguments made by CCI regarding the current draft of the regulations. Before making those points, I think it is necessary to state that City staff – **City Attorney Lynn Board, Deputy City Attorney Frank Johnson and Deputy City Manager Dennis Enslinger** – have done superb work in producing the revised draft regulations. By any measure, the quantum of work involved is prodigious. What is more, the technical-engineering and legal-regulatory complexities involved in these regulations well exceed the usual requirements asked of city staff. While the petition residents of Westleigh do not necessarily endorse every detail in the draft,<sup>1</sup> there is no doubt that the work is (1) outstanding, and (2) generally responsive to the numerous concerns expressed by Gaithersburg citizens in the several hearings relating to the cell tower matter. We are particularly grateful to Ms. Board, Mr. Johnson and Mr. Enslinger for their “above and beyond” efforts here.

The PowerPoint summary of the draft regulations indicates that the “proposed modifications do not change the current regulations with regard to the placement, spacing or height of wireless facilities within the ROW.” The Westleigh residents strongly endorse this position because it is our understanding that the regulations do not allow the installation of cell tower facilities in purely residential areas where there are no above ground utilities and the only light poles installed are of the ornamental variety that do not support cell towers and the ancillary equipment.

---

<sup>1</sup> There is particular concern about the increased size of certain of the wireless facility equipment authorized in the draft regulations. Another Westleigh resident, Radio Frequency Engineer Steven Raphael, has addressed some of these technical concerns in his written testimony and comments.



There are two important points of contention between the draft regulations and Crown Castle ("CCI") (and perhaps other cell tower service advocates such as AT&T and T-Mobile). On both points, CCI seeks to use FCC language interpreting the Telecommunications Act term "effective prohibition" of service as a stick to compel the City to override traditional municipal zoning concerns such as citizens' opinions, preservation of the traditional (residential) character of the community and aesthetics. CCI is wrong in this regard.

The authoritative interpretation of the Telecommunications Act language is that of the United States Court of Appeals for the Circuit that includes Maryland, that is, the Fourth Circuit Court of Appeals. The Fourth Circuit directly and strongly endorses the legitimacy of inclusion of citizen concerns and, specifically, traditional community aesthetic concerns in these important zoning decisions. What is more, the Fourth Circuit has declared that the cell tower advocates' burden of showing "effective prohibition" is an extremely heavy one.

CCI raises the specter of "effective prohibition" every time the City and the draft regulations do not accede to their demands, however unreasonable those demands may be and however accommodating City staff has tried to be. CCI's assertion of "effective prohibition" is without foundation and cannot stand. CCI and, sad to say, sometimes the FCC in its ardor to support the cell tower companies, overlook the Supreme Court's statement in Schad v. Mount Ephraim, 452 U.S. 61, 68 (1981):

"The power of local governments to zone and control land use is undoubtedly broad and its proper exercise is an essential aspect of achieving a satisfactory quality of life in both urban and rural communities."

The City's power to preserve our quality of life must be preserved.

**I. Regulation Section (I)(4)(D) Prohibiting Cell Towers Where They Would Be Inconsistent With, Inter Alia, the General Character of the Community and of the Neighborhood is Entirely Consistent with the Controlling Federal Statutes**

CCI objects to just about every aspect of this section of the regulation. It objects to language about over-concentration of poles, excessive number of poles and inconsistency with the general character of the neighborhood. In its letter to the City, CCI even objects to a limitation that poles must be spaced at least 500 feet apart(!) (this would be a tremendous concentration of poles by any reasonable measure). CCI claims that these limitations work an effective prohibition of service violative of the Telecommunications Act of 1996. This is, quite simply, wrong.

In T-Mobile Ne. LLC v. Loudoun Cty. Bd. of Supervisors, 748 F.3d 185, 198 (4th Cir. 2014), the United States Court of Appeals for the Fourth Circuit restated the standard for a claim of this kind:

To show that a local government regulation or decision "prohibit[s]" service or has "the effect of prohibiting" service, the telecommunications provider may demonstrate that the regulation calls for the rejection of all wireless facilities -- i.e., that "a local governing body has a general policy that effectively guarantees rejection of all wireless facility applications." **T-Mobile**

**Northeast LLC v. Fairfax Cty. Bd. of Supervisors**, 672 F.3d 259, 266 (4th Cir. 2012). Or, if the local government rejects a facility at a single site, the telecommunications provider may demonstrate that the rejection was "tantamount to a general prohibition of service." *Id.* (internal quotation marks omitted). To make that showing, the telecommunications provider must demonstrate (1) **that there is an "effective absence of coverage" in the area surrounding the proposed facility**, and (2) that there is a "lack of reasonable alternative sites to provide coverage" or that "further reasonable efforts to gain approval for alternative facilities would be 'fruitless.'" *Id.* at 268 (citing *Albemarle Cnty.*, 211 F.3d at 87-88). **This burden is "substantial and is particularly heavy when . . . the [telecommunications provider] already provides some level of wireless service to the area."** *Id.* (emphases added).

Our court of appeals has been quite clear that the standard for a showing of effective absence of coverage is quite stringent, and the burden of proof on the cell tower provider to satisfy that standard is very heavy. The city's refusal to allow a cell tower provider to maximize its revenue by saturation of coverage, erecting towers in a neighborhood with no aboveground utilities, placing poles every several hundred feet etc., is **not** an effective prohibition of coverage. Quite the contrary,

we emphasize that a plaintiff's burden to prove a violation of subsection (B)(i)(II) [the effective prohibition section of the Telecommunications Act of 1996] is substantial and is particularly heavy when, as in this case, the plaintiff already provides some level of wireless service to the area. *Albemarle County*, 211 F.3d at 87-88. This substantial burden is consistent with the plain language of subsection (B)(i)(II), which is violated only when a local governing body's decision prohibits or has the effect of prohibiting personal wireless services. *See Albemarle County*, 211 F.3d at 88 n.1. **Importantly, the language of this subsection does not encompass the ordinary situation in which a local governing body's decision merely limits the level of wireless services available because, as we have explained, the Act cannot guarantee 100 percent coverage.** *Id.*

T-Mobile Ne. LLC v. Fairfax Cty. Bd. of Supervisors, 672 F.3d 259, 268 (4th Cir. 2012) (emphasis added).

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In short, notwithstanding the claims of cell tower companies and the potential interpretations of an FCC inclined to favor maximum cell tower placements, absent statutory amendments, the authoritative opinions of the United States Court of Appeals for the Fourth Circuit control the issue of "effective prohibition". The standard is extremely stringent, and the burden of proof rests entirely on the cell tower companies and cell service providers. Nothing in the new FCC regulations alters those realities. For a recent and comprehensive summary of the controlling legal standards, standards that unequivocally support the City's draft regulations, see New Cingular Wireless PCS, LLC v. Fairfax Cty. Bd. of Supervisors, 674 F.3d 270, 276 (4th Cir. 2012).

## **II. There is Ample Legal Support for the Council and Its Cell Tower Regulations to Heed Community Concerns Based on Aesthetic Considerations and the Character of the Community**

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The above evidence is more than enough to demonstrate the real, and surely reasonable, concerns animating the democratically elected City Council's 'discrimination.' None of those who testified suggested any ill will toward appellees, nor did any of them demonstrate dislike for digital service as opposed to analog. On the contrary, they hoped that towers might be located in a nearby commercial zone. See J.A. at 69, 75.

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The law is thus clear that the City Council acts rationally and reasonably in heeding traditional community zoning concerns when drawing regulations or assessing permit requests in the cell tower context. The draft regulations are faithful to the law, and should be finalized in accordance with the existing draft.

**Respectfully submitted,**

**Sheldon L. Pine**



A big Change – 5G Antenna Signals Reach 2,000 feet or more

There is no longer a technological need for towers near homes in a residential community.

### 1) Verizon finds Samsung 5G antennas send signals over 2,000 feet

Take the word of Lowell McAdam prior Chairman of Verizon and prior CEO who says the towers can be 2,000 feet from homes. He made this statement in an interview with CNBC's David Faber in May of 2018 after Verizon tested 5G for a year. This is plenty of distance to site the towers in non-intrusive locations.



[5:29] Faber: Can you get through trees? Get through leaves? Can you actually get somewhere where you don't need cell sites every[where]; 25 feet from my house?



McAdam: Those are what I call the myths of millimeter waves. No one thought that was good. ... [Skipped to 5:53]

When we went out in these eleven [5G test] markets, we tested well over an year, so we could see every part of foliage and every storm that went through. We now busted the myth that it [5G frequencies] had to be line of sight. It does not. We busted the myth that foliage would stop it that was in the days that a pine needle would shut it down that does not. And 200 feet from the home? **We are now designing the network for 2,000 feet from transmitter to receiver.**

<https://www.youtube.com/watch?v=lYAufhlgkpl#t=5m29s>



Youtube author "What Is5G" shows Jason L's, Verizon Field Engineer, demonstration. Taken May/June 2018.



It's [Verizon 5G] really high frequency so everybody thinks it doesn't go very far, but it's a really big pipe, so that's what allows you to gain the super fast speed. We are here on top of this parking garage. We are 3000 feet away from our radio node. The cool thing about this is that we did not move the radio node. It's pointing down to serve the customers in that area. But here even three thousand feet away we're still getting gig [1gig] speeds.

So, we've driven about a 1/3-mile [1,760 feet] away from the radio node. It's located over there behind the trees. We're still getting very good speeds [800 megabits in back of SUV with hatch open] even though we have foliage in between.

<https://www.youtube.com/watch?v=FwAsr1pC13Q&feature=youtu.be&t=0m34s>

## 2) FCC has freed up longer mid-range bands for 5G

Using mid-range bands, the antennas will not need to be in people's front yards.

*"Mid-band:* Mid-band spectrum has become a target for 5G buildout given its balanced coverage and capacity characteristics. With our work on the [2.5 GHz](#), [3.5 GHz](#), and [3.7-4.2 GHz](#) bands, we could make up to 844 megahertz available for 5G deployments."

<https://www.fcc.gov/5G>



## Coverage comparison

Times faster  
than  
low-band 4G  
LTE

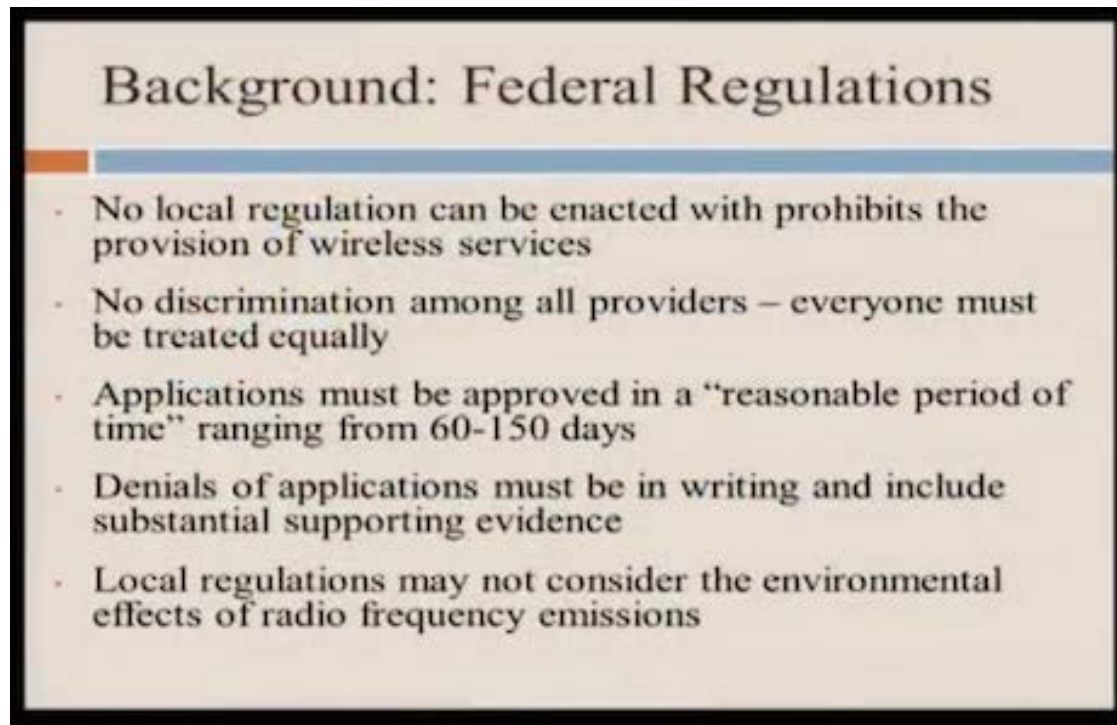


<https://www.digitaltrends.com/mobile/what-is-5g/>

Notice the red 5G has comparable coverage to LTE at the mid and low range bands. This means for the most part cell tower companies can place low and mid range one the same polls as the current LTE poles.

### Conclusion:

The LEAST INTRUSIVE MEANS to close a significant Gap in Coverage is for Wireless companies to place the antennas on existing poles on arterial roads.



This slide was shown at the Gaithersburg city council meeting.

<https://www.youtube.com/watch?v=ic2KLPMcJRw&t=101m13s>

#### All for Curtailed or Banned Cell Towers

City of Gaithersburg has banned cell towers in the utility right-of-way in residential neighborhoods with underground utilities. Ocean City was able to reach an agreement with Crown Castle not to put cell towers in residential neighborhoods with beach views. New York City hasn't allowed poles in Manhattan for the last hundred years. Rancho Palos Verdes, California has gotten Crown Castle to move towers and rejected towers on a case-by-case base in residential neighborhoods. San Francisco has regulations about cell towers in utility right-of-way.

#### Encinitas, California

Amendments the council unanimously agreed to Wednesday include barring 5G antennas from being installed in residential zones, park lands and “very high” fire hazard areas. They also cannot be installed

within 500 feet of a day care center, a school or a residence that is not in a residential zone.

[https://www.sandiegouniontribune.com/communities/north-county/story/2019-10-31/encinitas-to-ban-5g-wireless-antennas-near-schools-daycares-residences?fbclid=IwAR135VUcv\\_lwDNnotKU3N4FQPGIFNS1aMP0xKeL23tAh8SgaIgUBF-PGA0](https://www.sandiegouniontribune.com/communities/north-county/story/2019-10-31/encinitas-to-ban-5g-wireless-antennas-near-schools-daycares-residences?fbclid=IwAR135VUcv_lwDNnotKU3N4FQPGIFNS1aMP0xKeL23tAh8SgaIgUBF-PGA0)

## Gaithersburg

Follow City of Gaithersburg lead in rejecting the siting of cell towers in the utility right-of-way in areas with underground utilities.

Gaithersburg allows “stealth” towers on homes. Thus, Gaithersburg is not forbidding poles in residential areas. Gaithersburg based some of its 2017 wireless proposals on New York City’s statutes.

The city is regulating cell tower placement by the type of the street where the pole is to be placed. This isn’t the typical way of devising zoning rules. Cell towers are allowed on arterial roads but not residential streets.

Aaron Rosenzweig <aaron a t chatnbike.com> explains Gaithersburg zoning.

I would not say that Gaithersburg is planning to “ban” cell towers because that is currently illegal. They are attempting to be creative to make it difficult to place them in residential areas. Here are the ideas Gaithersburg are trying:

a) Major vs Minor arteries - like the human heart there are major and minor roads. Roads that connect communities are generally larger so the city is calling them “major” arteries. The draft legislation makes the wireless industry justify why a cell tower must be put on a minor road when a major road is possible. The idea is to green light the big roads and make it hard to put it on small roads. In this way, we are not “banning” a 5G rollout.

b) Roof antennas - the city is explicitly allowing the wireless industry to approach individual homeowners and put an antenna on their roof. Again, the idea is not “ban” anything anywhere but putting the onus on the wireless industry to convince individual citizens. I have

asked the council to add additional protections making it possible to break out of a lease at any time and have the tower removed from your roof when you want to sell your home. If they are going to make a law to allow roof towers they need to protect citizens from predatory practices. Many people will also be upset if their next-door neighbors build an antenna, as the pole will still be close to their own home.

c) No towers in the right-of-way where utilities are underground. In communities that have no overhead wires, they want to preserve that clean feel. The city says they'll make it illegal to put towers on the streets here but there still is the possibility of roof mounted towers.

## New York, New York

New York City hasn't allowed poles or towers in Manhattan for the last hundred years. [ Page 7 ] New York City "supports the comments filed by the NLC and its statements that Commission attempts to regulate right-of-way management and zoning matters is both unnecessary and violative of the Telecommunications Act of 1996." [ Page 8 ] [ FYI: this is old. 2011 ]

[https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc\\_reply\\_comments\\_acceleration\\_broadband.pdf](https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc_reply_comments_acceleration_broadband.pdf)

Crown Castle lawyer at City of Gaithersburg hearing, indicates that they do not agree with NYC regulations, but lawyer gave no indication that Crown Castle is suing.

<https://www.youtube.com/watch?v=ic2KLPMcJRw&t=128m49s>

## Ocean City

"Crown Castle has submitted a letter that confirms they will not pursue any installations in R-1 districts or MH districts at this time," in Ocean City, Maryland.

<https://mdcoastdispatch.com/2017/01/12/ocean-city-company-reach-compromise-to-keep-cell-towers-out-of-residential-districts/>

Crown Castle promise didn't last too long.

<https://mdcoastdispatch.com/2019/02/14/city-council-approves-nine-more-small-cell-towers-in-residential-communities/>

## Rancho Palos Verdes, California

Crown Castle has been cooperating with our City (i.e. complying with our municipal aesthetic requirements and moving proposed locations out of neighborhoods and away from homes) ... (in our city at least) they corrected nearly all of the really problematic practices that I had documented. ... ensure these sites were deployed on our terms rather than what was cheap and easy for Crown Castle. We have a pretty good working relationship with them now ...

... note that the reason we were successful is that we have a very strong and detailed ordinance for cell towers in the public right of way. Everything is documented and closely followed so the applicant can't claim we are acting arbitrarily:

Our ordinance has four key components; if these are met the site will almost certainly be approved:

- Minimal antenna size with screening
- All accessory equipment underground (everything except the antenna)
- Combining sites with existing vertical infrastructure (streetlights, traffic signals, etc.)
- Strict location restrictions, no sites on local, residential streets without an exception granted

If they don't comply with these, then the applicant must demonstrate the site is required to fill a significant gap and there is no less intrusive alternative to receive an exception. This is not simply checking a box (i.e. the applicant just claiming these conditions exist) but has to be demonstrated to our planning commission via engineering analysis. Fortunately, our PC is quite tech savvy now as

we have been through about 30 applications. Crown has usually found it's easier to comply than to convince our PC an exemption is required.

Here's a link to our ordinance:

[https://library.municode.com/ca/rancho\\_palos\\_verdes/codes/code\\_of\\_ordinances?nodeId=TIT12STSIPUPL\\_CH12.18WITEFAPURI-W](https://library.municode.com/ca/rancho_palos_verdes/codes/code_of_ordinances?nodeId=TIT12STSIPUPL_CH12.18WITEFAPURI-W)

As reported by Jeff Calvagna, resident of Palos Vardes, California

## San Francisco, California

“However, the City [ San Francisco ] needs to regulate placement of such facilities in order to prevent telecommunications providers from installing wireless antennas and associated equipment in the city’s public rights-of-way either in manners or in locations that will diminish the city’s beauty.”

<http://www.fiercewireless.com/wireless/tensions-rise-as-officials-struggle-to-address-small-cell-deployment-challenges>

## Spokane, Washington

“Spokane’s cell tower moratorium ends with stricter rules.”

“Councilman Mike Allen, who helped lead negotiations among city staff, telecommunication company representatives and neighborhood advocates, thanked nearly everyone in the council chambers for working toward an agreeable consensus.”

<http://www.spokesman.com/stories/2015/nov/06/spokanes-cell-tower-moratorium-ends-with-stricter-/>

## Zoning by USA cities on controlling “Small” Cell Tower

“From coast to coast local governments are taking action to protect their communities from the unfettered deployment of 4G and 5G “small cell” wireless facilities. Several cities are passing ordinances that strictly limit the buildout.”

<https://tinyurl.com/y88tytmw>

California cities’ setback, separation, and fall zone requirements



Separation and Setback are largely a matter of policy based on local preferences. There is no magic number -- the number based on balancing a desire for larger setback/separation number against how many applications would have to seek waiver based on the distance chosen.

Setbacks and separation are necessary because they provide space for people to escape in the event of a fire. They also minimize redundancy, blight, and property devaluation.

Calabasas: no placement in residential areas, open space, parks or playgrounds; 150% fall zone requirement.

Fairfax: small cell prohibited in residential areas; eligible facilities and Gov. Code 65850.6 collocations are allowed.

Mill Valley: no installations in residential areas other than exempt facilities and additional collocation under Gov. Code 65850.6.

Petaluma: 500 foot setback from residence and 1,500 separation from nearest facility. 110% fall zone requirement.

Santa Cruz County: prohibits placement in residential areas.

City of Santa Cruz prohibits placement in residential areas, natural areas and strong preference that not be "highly visible from adjacent roadways, public areas, parks, schools, greenbelts or other visually sensitive areas." There is a 1,000 foot separation requirement.

Sonoma: no installations in residential areas other than small wireless facilities; 1,500 foot separation in ROW from other wireless facilities

Suisun City: 500 foot setback from residence and 1,500 from other wireless facilities.

Walnut City: towers and antennas shall not be located within 1,500 feet of any school (nursery, elementary, junior high, and high school), trail, park or outdoor recreation area, sporting venues, and residential zones. 1,500 separation from other antennas; Monopoles and alternative antenna support structures shall be located a minimum of one-half mile from any other monopole or alternative support structure.

### Archaic Antenna Technology

Antennas and boxes shown in Crown Castle simulations appear to be much bulkier than shown by Verizon videos and on manufactures web sites. The county should require the use of the latest equipment.





## 1) The City of Gaithersburg cell pole simulation by Crown Castle

The right picture shows a simulation of a proposed cell tower by Crown Castle for placement in Westleigh neighborhood in the City of Gaithersburg. The Westleigh neighborhood is divided between the City of Gaithersburg land and Montgomery County land.



## 2) Montgomery County cell tower simulation

The following pictures were shown in the “Small Antenna & Microtower ZTA Community Meeting” slides.

Before	Canister, electronics, and meter all on pole	Canister and meter both on pole “mail” box-like electronic box	Side view of on pole
			
14' to 16' Colonial Streetlight Replaced with 19' to 20' side mounted or ground cabinet			

[Page 15 on](#)

<http://www.montgomerycountymd.gov/cable/Resources/Files/Towers/documents/ZTA%20Community%20Meeting%20Sept%202019%202017%20v4.pdf>

- Note: Existing poles in Westleigh are about 10 to 12 feet not 14 to 16 feet as stated in the caption.
- The pictures are deceptive because no house is directly behind the pole and the background of trees with visible tree trunks results in the cell tower pole being lost in the tree trunk clutter.
- I visited many of the proposed cell sites in Dufief, Flints Grove and Westleigh. The poles on the corner lots would be in direct view from the house.

## FCC commissioner

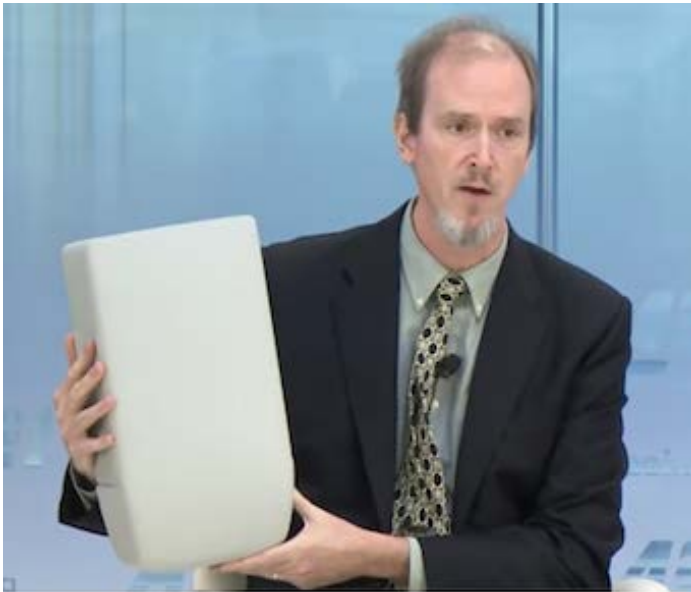
I was told that a FCC Commissioner told the Montgomery County delegation to the FCC that 5G technologies would be the size of a pizza box.

Governments should take up this offer. 😊

## Reasonable sized 5G Antennas

Examples of small size antennas:

- A. John Godfrey, Samsung Electronics America Inc, shows the 5G antenna Verizon will be using. The Antenna is the backpack-size white box on the left. All Verizon will have to do is provide a data connection and a power converter.



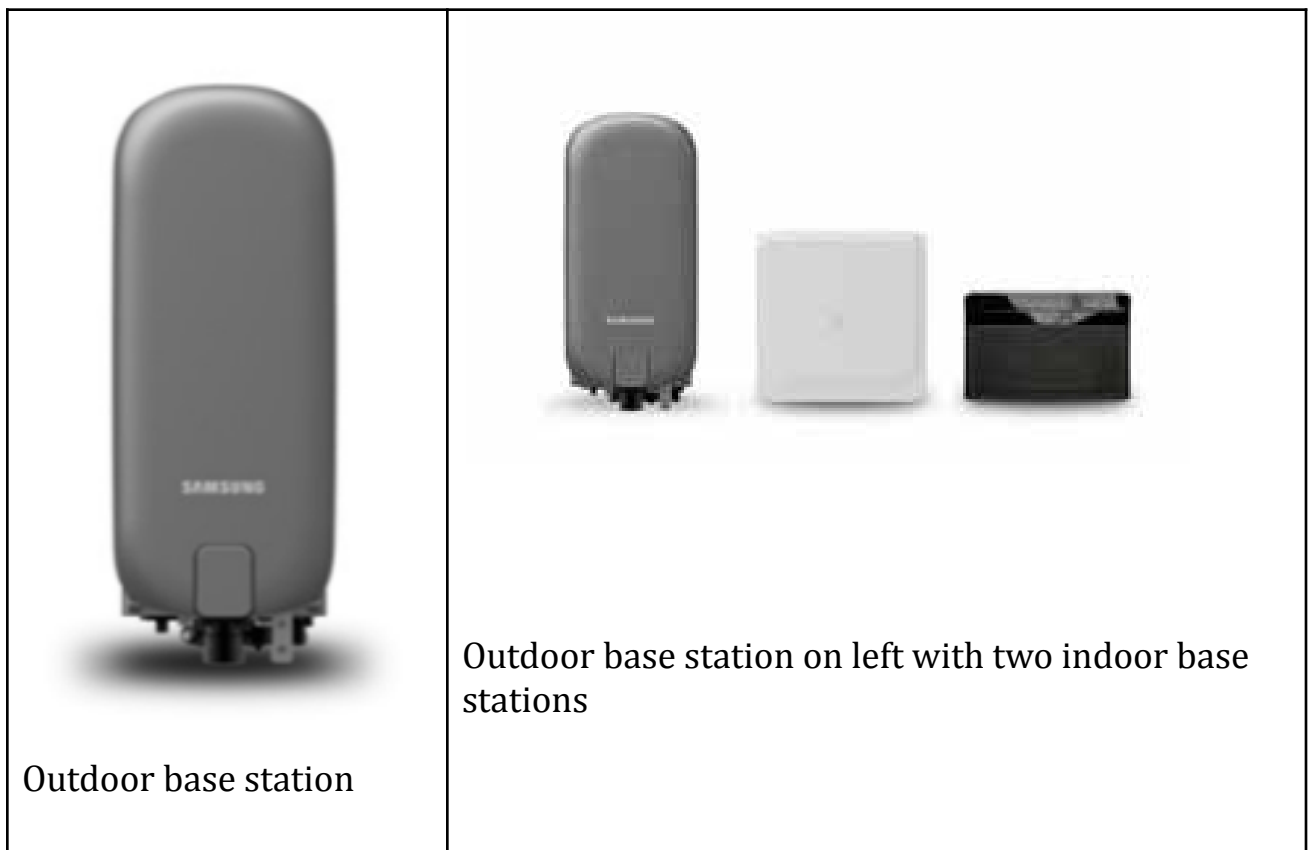
[https://www.youtube.com/watch?v=SDRMsg\\_r\\_Ss#t=44m21s](https://www.youtube.com/watch?v=SDRMsg_r_Ss#t=44m21s)

B. Samsung has these devices in pre-production.



<https://news.samsung.com/us/samsung-announces-complete-portfolio-commercial-5g-products-solutions/>

C. Micro cell LTE 4g antenna from Samsung.



<https://www.samsung.com/global/business/networks/small-cells/outdoor-small-cells/>

<https://www.samsung.com/global/business/networks/small-cells/small-cells-detail/>



#### D. Ericsson Outdoor cell antennas



<https://preview.tinyurl.com/y739wo57>



<https://www.ericsson.com/en/networks/cases/5g-live-in-korea>

## Lightpole Site Slim



<https://preview.tinyurl.com/y8mkvy5x>

## Underground 5G Antennas

### 1) Swisscom and Ericsson plant LTE small cells underground



Swisscom and Ericsson have proved that city manholes can be used worldwide to improve capacity with small cells – even below street level – using the Ericsson Vault Remote Radio Unit and Kathrein's Street Connect, an in-ground microcell antenna system. The use of existing street manholes where fiber and power already exists lowers total cost of ownership by 50 percent.

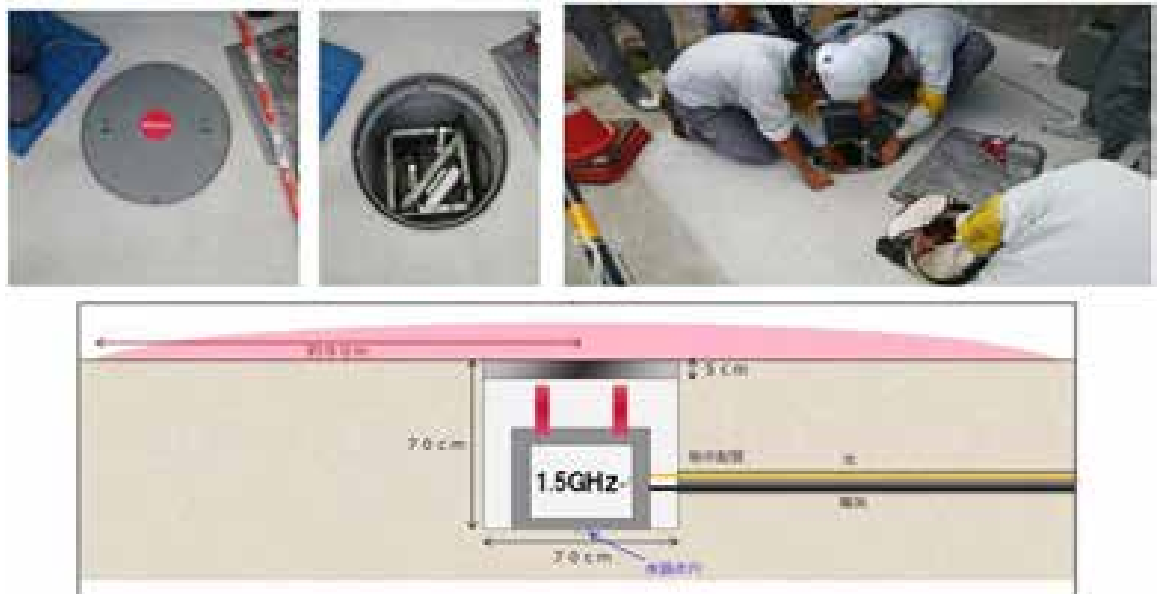
<https://www.ericsson.com/en/news/2016/3/swisscom-and-ericsson-plant-lte-small-cells-underground>

Short video entitled: Invisible sites: Underground vault sites with Swisscom.

<https://www.youtube.com/watch?v=X0IttiqQIdk>

## 2) NTT DoCoMo

NTT DoCoMo shows “first demonstration of manhole base station in Kyushu” Conducts a “demonstration experiment of manhole type base station (hereinafter, this experiment) for establishing service area began in Nanjo City, Okinawa Prefecture on July 17, 2018 (Tue) in 2018.”



[https://www.nttdocomo.co.jp/info/notice/kyushu/page/180724\\_00.html](https://www.nttdocomo.co.jp/info/notice/kyushu/page/180724_00.html)

[ Use Google Chrome to translate from Japanese to English. ]

Construct a layered zoning system.

Construct multiple legal protections for residential areas with all underground utilities in case of legal losses

- 1) Prohibit cell towers in the right-of-way. Allow stealth towers on residential roofs as the City of Gaithersburg has done.
- 2) Add 4G or 5G antennas on power and light poles on arterial roads and on commercial buildings.
- 3) Verified need for each cell tower
- 4) Better siting of cell towers: backyards, walkways or parks.  
Certainly, there are better places for the towers than people's front yard.
- 5) Include a backup set of rules for "small" cell towers in residential neighborhoods such as pole height, pole setback and size of electronics.

#### Data Antenna Towers

The tower companies have been evasive when asked about the purpose of the towers, but when looking into the filings for the towers, it is clear they are using 4G technology signal bands. If the tower companies are really putting in 4g with a new name, there is no need for the towers in my neighborhood since 4G signal are capable of reception over longer distances and we should be able to block neighborhood towers.

Why do they need to be so close to homes?

#### Data Technology – It's speed not technology

The means of sending and receiving data is irrelevant. All technologies are a data pipe. Data antenna towers in people's front yards are redundant. Technologies are transit. When a newer technology comes along like satellite, technology types and the FCC will abandon their fascination with putting towers in residential neighborhoods.

#### 1) Fios

We have Fios. It's fast and reliable. It doesn't disfigure the aesthetics of my neighborhood.

## 2) Satellite

Eleven companies are working on low Earth orbit satellites to provide Internet service. These include Boeing, OneWeb, Samsung and SpaceX. Source P. Cooper's Senate testimony.

<https://www.youtube.com/watch?v=irgaSHOuJZU&t=5m05s>

OneWeb and SpaceX are designing for 1gig data communications to homes.

"The **OneWeb** satellite constellation—formerly known as WorldVu—is a proposed constellation of approximately 720 satellites expected to provide global Internet broadband service to individual consumers as early as 2019."

[https://en.wikipedia.org/wiki/OneWeb\\_satellite\\_constellation](https://en.wikipedia.org/wiki/OneWeb_satellite_constellation)

**SpaceX** has "Initial plans as of January 2015 are for the constellation to be made up of approximately 4000 cross-linked satellites, more than twice as many operational satellites as are in orbit in January 2015." Ground station will be a pizza size antenna.

[https://en.wikipedia.org/wiki/SpaceX\\_satellite\\_constellation](https://en.wikipedia.org/wiki/SpaceX_satellite_constellation)

## 3) Arterial roads

The cell phone companies could put in more 4G towers and add modern 5G antennas along the arterial roads instead of the invasive DAS towers in residential neighborhoods with underground utilities. This is the City of Gaithersburg plan.

Additional 4G antennas have been put along arterial roads Travilah and Potomac thus sparing all but one resident from cell towers in their front yard.

Eliminate Pepco power meters

Somehow it appears that Comcast gets electrical power to a box of theirs without having a visible power meter. When a power outage occurs, a Comcast employee comes out and attaches a generator to a metal box on Joshua Tree Road. There is a breaker box attached to the cabinet. I conclude the cabinet is using electricity. However, there is no Pepco meter

on the cabinet. I assume there is a plan to pay for electricity at some calculated rate. It may be possible for cell tower companies to eliminate the power meter on their equipment.

Facing street	Facing house
	

Environment -- Legal

## Rye, New York

City of Rye, New York wins two suits by Crown Castle to place cell towers in right-of-way.

- A win in Federal Court

On Friday December 8, 2017, Federal Judge Briccetti, S.D.N.Y., granted the City [of Rye, NY] motion to dismiss Crown Castle's complaint finding that the City did not violate the Telecommunications Act ("TCA") when it rendered a Positive Declaration under the State Environmental Quality Review Act. According to Mayor Joseph A. Sack, "This Order recognizes the importance of a diligent review process that includes a review of the potential environmental impacts of installation of small cells. The City considered varying points of view and to have Judge Briccetti affirm that we have acted in accordance with federal law is gratifying." Also, Mayor Joseph A. Sack ousted the prior mayor over ineffective cell tower resistance.

Crown Castle raised about every complaint they could against the City of Rye. Their lawyer wrote over 200 paragraphs of supposed violations of FCC rules and the law.

To win this law suit, City of Rye employed outside counsel Joseph Van Eaton of Best, Best & Krieger who is also the City of Gaithersburg outside counsel for cell towers. Thinking for the future, it would be advantageous for MC to switch to Joseph as their outside counsel.

More info:

<https://www.ryeny.gov/Home/ShowDocument?id=9864>

- A win in NY State Supreme Court

"In April 2017, Rye lawmakers voted to deny Crown Castle's application to build and required the company to conduct studies on possible noise, sight and health impacts from the proposed equipment.

"A second lawsuit filed by wireless provider Crown Castle against Rye City over the company's stalled proposal to place small cell boxes throughout the city was dismissed this week by a State Supreme Court judge this week."

"The dismissal confirms that Crown Castle has no rights under the Right of Way Use Agreement, thereby leaving Rye free to protect the interests of its residents in accordance with applicable law," said Rye City Mayor Joshua Cohn.

<https://www.lohud.com/story/news/local/westchester/2018/08/23/wireless-company-lawsuit-against-rye-dismissed-again/1072682002/>

A second win by Joseph Van Eaton.

## United Keetoowah Band of Cherokee Indians in Oklahoma v. FCC

Petitioners challenged one of the FCC's orders paring some regulatory requirements for the construction of wireless facilities. The Order exempted most small cell construction from two kinds of previously required review: historic-preservation review under the National Historic Preservation Act (NHPA) and environmental review under the



National Environmental Policy Act (NEPA). Furthermore, the Order effectively reduced Tribes' role in reviewing proposed construction of macrocell towers and other wireless facilities that remain subject to cultural and environmental review.

The DC Circuit granted the petitions in part because the Order did not justify the Commission's determination that it was not in the public interest to require review of small cell deployments. In this case, the Commission did not adequately address possible harms of deregulation and benefits of environmental and historic-preservation review pursuant to its public interest authority under 47 U.S.C. 319(d). Therefore, the Order's deregulation of small cells was arbitrary and capricious. The court denied the petitions for review on the remaining claims.

<https://law.justia.com/cases/federal/appellate-courts/cadc/18-1129/18-1129-2019-08-09.html>

#### Court Order





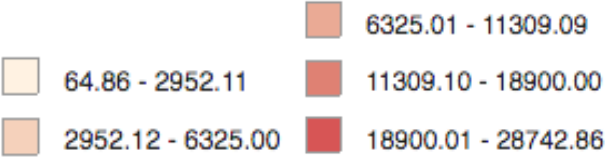
[https://www.cadc.uscourts.gov/internet/opinions.nsf/4001BED4E8A6A29685258451005085C7/\\$file/18-1129-1801375.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/4001BED4E8A6A29685258451005085C7/$file/18-1129-1801375.pdf)

#### Equity and Fairness

The selection of the areas for “small” towers focuses on middle-class areas that can afford generous cell phone service but is unlikely to collect enough money to pay for lawyers to sue.

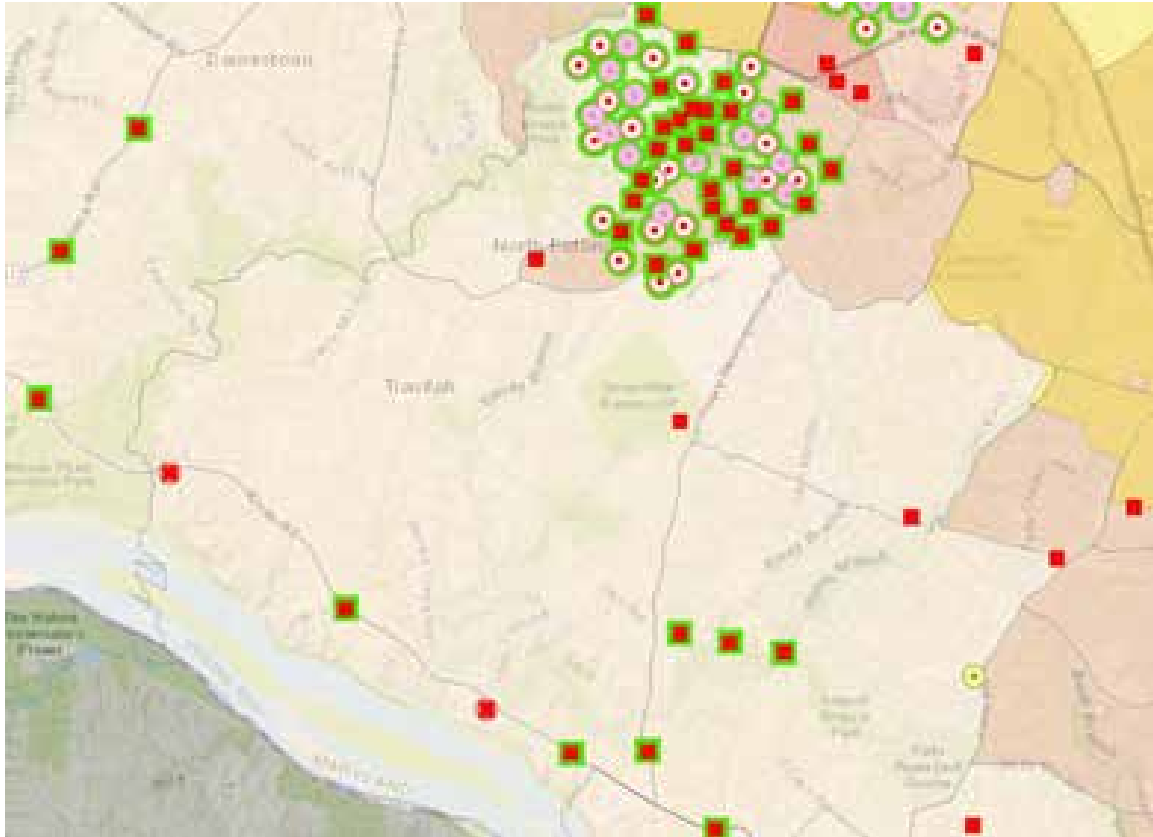
This is my evidence that the cellular companies didn't put in adequate 4G cell antennas in the Dufief, Flints Grove and Westleigh area, so I suppose there would be a better case for cell towers in people's front yards. See the “Signals” section on page for evidence.

The three maps below use these settings:

<b>Selected options</b>	<b>Symbol</b>	<b>Meaning</b>
Current Facilities	Box	 Verizon -- red box  Crown Castle -- green border around Verizon red box Includes approved, built & tabled towers
Proposed Facilities	Circle	 Verizon -- red circle  Crown Castle -- green border around red Verizon circle
Population Density (tracts 2012)	Shades of pink	<p>Persons Per Sq. Mi. (2012 ACS)</p> 
Gaithersburg, Rockville, Takoma.	Shades of brown	FYI: Montgomery County database does not include cell towers in these towns.

<https://gis3.montgomerycountymd.gov/WirelessAntennasAndTowers/>

- 1) Comparison of Travilah and Potomac versus North Potomac. In 2014 Travilah and Potomac received additional cell towers along the arterial roads, Seneca Road and River Road as shown by the red box with a green border. However, two years later cell towers were proposed in North Potomac for placement in people's front yards.



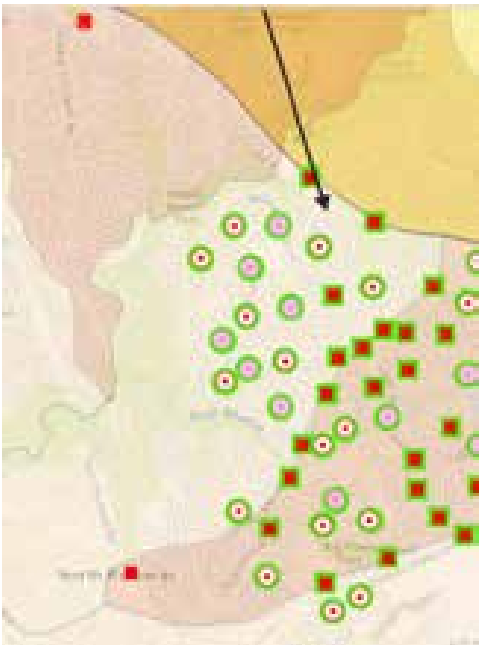
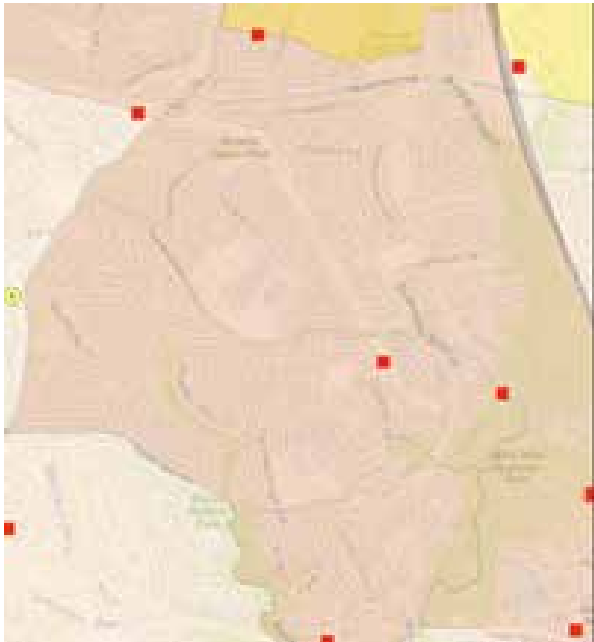
The Crown Castle poles in Travilah use a different style antenna than along Dufief Mill Road.

14700 Seneca Road Travilah	14737 Dufief Mill Road North Potomac
	

## 2) Comparing Population density

The location of small cell towers in Dufief, Flints Grove and Westleigh doesn't seem to be based on population density. It's arbitrary. It means we are getting cell towers when areas such as North Bethesda and Potomac are not.

The North Potomac area contains two different population densities. The population density in Dufief, Flints Grove and Westleigh is in light grey/tan, which means it's less dense than in North Bethesda in light pink and parts of Potomac in light pink.

Dufief, Flints Grove, Stonebridge and Westleigh in North Potomac	North Bethesda and Potomac
	

## Health

Any health effects translate directly into decreased real estate value of our homes. I believe the county council is allowed to be concerned about decreased property values under the FCC rules.

## 1) DNA Damage found in NTP Study

This peer-reviewed scientific study “Evaluation of the genotoxicity of cell phone radiofrequency radiation in male and female rats and mice following subchronic exposure” was published in Environmental and Molecular Mutagenesis by National Toxicology Program (NTP) scientists of the National Institutes of Environmental Health Sciences.”

<https://ehtrust.org/cell-phone-radiation-is-associated-with-dna-damage-in-peer-reviewed-analysis-of-ntp-study/>

Abstract

<https://www.ncbi.nlm.nih.gov/pubmed/31633839>

## 2) Ramazzini Institute Study

Fiorella Belpoggi Ph.D., Ramazzini Institute

“Our findings of cancerous tumors in rats exposed to environmental levels of RF are consistent with and reinforce the results of the US NTP studies on cell phone radiation, as both reported increases in the same types of tumors of the brain and heart in Sprague-Dawley rats. Together, these studies provide sufficient evidence to call for the International Agency for Research on Cancer (IARC) to re-evaluate and re-classify their conclusions regarding the carcinogenic potential of RFR in humans,”

<https://ehtrust.org/worlds-largest-animal-study-on-cell-tower-radiation-confirms-cancer-link/>

“I believe irresponsible to implement any new wireless technologies in neighborhoods where people would be continuously exposed before thorough evaluations are made of potential adverse health effects.”

Ron Melnick, Ph.D.

<https://www.youtube.com/watch?v=N9LLfFxJTVg&t=15m7s>

## 3) National Toxicology Program (NTP)

“Scientific panel advises there is evidence for an association between both heart and brain cancers and cell phone radiation in large-scale animal study (Triangle Park, NC).” “Scientists concluded there is “clear evidence” linking cell phone radiation to the development of cancers in rats. The U.S.

government invited an expert panel to make a majority-rules declaration in response to the \$25 million U.S. government National Toxicology Program (NTP) study of cell phone radiation in animals. After a three-day review of the study data, they voted to strengthen the conclusions that cell phone radiation caused health effects in the cell phone radiation exposed rats and mice.”

<https://ehtrust.org/clear-evidence-of-cancer-concludes-the-expert-panel-to-the-us-national-toxicology-program-on-cell-phone-radiation-study-findings/>

#### 4) Stunted Trees

Radiofrequency radiation injures trees



Damage only on one side: The tree shows damage only on one side. The damage can be recognized with the naked eye.

Full text report

[http://media.withtank.com/cf9ae35027/waldmann-selsam\\_2016\\_scitotenv572p554-569\\_rf\\_trees.pdf](http://media.withtank.com/cf9ae35027/waldmann-selsam_2016_scitotenv572p554-569_rf_trees.pdf)

“Radiofrequency Radiation injures trees around mobile phone base stations”

<http://scientists4wiredtech.com/oakland/radiofrequency-radiation-injures-trees-around-mobile-phone-base-stations/>

“RF radiation kills and damages trees”

[https://ecfsapi.fcc.gov/file/1006055687809/FCC19-360TARD\\_Catherine17June2019.pdf](https://ecfsapi.fcc.gov/file/1006055687809/FCC19-360TARD_Catherine17June2019.pdf)

Since we cannot worry about the growing evidence of a health risk to humans, maybe we can worry about the damage to trees.



## 5) US Exposure limits are much greater than other countries

Limits in the United States, most Western European countries, and many countries in other parts of the world follow IEEE C95.1-1999 or the (quite similar) ICNIRP limits. Those in the Russian Federation, (together with most of its former Warsaw Pact allies), China, Switzerland, and a few other countries are as much as a hundred times lower. I identify these limits as “science-based” and “precautionary”, reflecting major differences in philosophy and approach.

[https://www.who.int/peh-emf/meetings/day2Varna\\_Foster.pdf](https://www.who.int/peh-emf/meetings/day2Varna_Foster.pdf)

NATION	EXPOSURE LIMITS FROM WIRELESS TRANSMITTERS
USA standard	580 microwatts
Russia	10 microwatts
China	6 microwatts
Italy	5 microwatts
Switzerland	4.2 microwatts
Salzburg, Austria	.1 microwatt
Lichtenstein	.1 microwatt

## 6) More Health Studies

This site contains many links to health studies showing the negative effects of cellular signals

<https://www.telecompowergrab.org/science.html>

Land topography and terrain in Westleigh – Do not block cellular signals

The terrain of Dufief, Falls Grove and Westleigh in Montgomery County is on a hillside. Dufief Mill Road is at the top of the hill at 410 feet. The low point is farthest away from Dufief Mill road at 350 feet. This means that

antennas on top of the power poles along Dufief Mill Road have an excellent view.

Crown Castle representative at Germantown meeting stated that terrain features blocked signals. However, I didn't find my signals being blocked. I get a constant 3 bars on my iPhone 4, which uses 3g when I visited 15 of 15 the proposed cell tower sites in Dufief, Falls Grove and Westleigh. I got 2 bars at proposed pole site, but 3 bars five fee away. See Signals section below on page .



Rockville, Maryland

<https://prd-tnm.s3.amazonaws.com/StagedProducts/Maps/USTopo/1/20780/7237124.pdf>

Live poles. No zombies.

- a) Require that all pole antennas be activated within 60 days of installation.

- b) Collect a deposit on poles so that the county has money to take down unused poles.

As far as I can tell, these poles have not been activated on Dufief Mill Road. With a Verizon phone, we ran the Android Cell Map app in February, 2018 to observe cell tower locations.

<https://sites.google.com/site/montgomeryclearvistas/snooping-apps>

14914-14936 Dufief Mill Road, North Potomac	14737 Dufief Mill Road, North Potomac
	

Why are these apparently unused antennas still here after two year?

Prioritize 911 calls

Give calls to 911 a higher priority than regular calls. This will take action by FCC and cell phone companies.

Cell phone calls are already prioritize. Senior government official have the ability to prioritize their calls.

<https://www.cnet.com/news/why-obamas-cell-phone-calls-will-always-go-through/>

Emergency response personal can prioritize their official calls.

<https://www.fcc.gov/general/wireless-priority-service-wps>

More Nonsense – 5G is a requirement for Self-Driving Cars

The reason for 5G in a car is so the “driver” can watch TV.

Montgomery County tower committee gave an unsupported justification for 5G, as it would be required for self-driving cars. “The first truly autonomous cars appeared in the 1980s, with [Carnegie Mellon University's Navlab](#) and ALV projects funded by the United States' [Defense Advanced Research Projects Agency](#) (DARPA) starting in 1984 and [Mercedes-Benz](#) and [Bundeswehr University Munich's EUREKA Prometheus Project](#) in 1987.”

[https://en.wikipedia.org/wiki/Self-driving\\_car](https://en.wikipedia.org/wiki/Self-driving_car) No 5G was around in the ‘80s. Google, GM, Ford, Toyota and everyone else have been testing autonomous cars for almost ten years without 5G being on the market.

My dentist experienced a five-day power outage as the result of the March 2017 windstorm. The cell tower poles shown in the Montgomery Cell Tower simulation shows power meters. All such 5G towers would be without power. Requiring 5G for autonomous cars would make an area without power a drive-less zone. We will not be covering America’s dirt roads with 5G. Cars last longer than any cellular technology has.

<https://www.autoevolution.com/news/see-if-your-vehicle-is-affected-by-3g-network-shutdown-and-what-you-can-do-about-it-183258.html>

It’s nonsense that autonomous cars will require 5G.

Professor says it's not needed. Forget all that talk of self-driving cars needing 5G. There is another technology called Connected cars to navigate around traffic jams which will use wireless. You will note this technology is available on more expensive GPS devices.

14 February 2019

Ford: Self-driving cars "will be fully capable of operating without C-V2X (cell connection)"

"Autonomous cars do not need 5G," respected Professor Gerhard Fettweis told us in the spring. Karl-Heinz Laudan of Deutsche Telecom agrees. "Automotive does not need mmWaves. I can now add an informed source, Don Butler, executive director, Ford Connected Vehicle Platform and Product. "These vehicles will be fully capable of operating without C-V2X." (Cellular vehicle-to-everything (C-V2X) ) That's of course true. Otherwise, the cars would shut down when out of range of a cell site.

Connected cars - as opposed to autonomous cars - will be a major business. Ford is putting 4G in every car in 2018. AT&T estimates it has 27 million cars on the network today, although few have a second connection. That's mostly for entertainment today, but literally dozens of Waze-like information applications are coming to market. Butler predicts, "Road signs could provide advance warning of recent accidents or provide more context regarding road construction."

Dan Warren, now at Samsung, was the first to explain to me why cars couldn't be completely dependent on phone networks. "Will they freeze when they hit a deadspot? Of course not."

<http://wirelessone.news/10-r/1283-ford-self-driving-cars-will-be-fully-capable-of-operating-without-c-v2x>

This urban legend has been mostly generated by the cellular industry as far as I can tell.

### 1) Montgomery County Self-driving shuttle



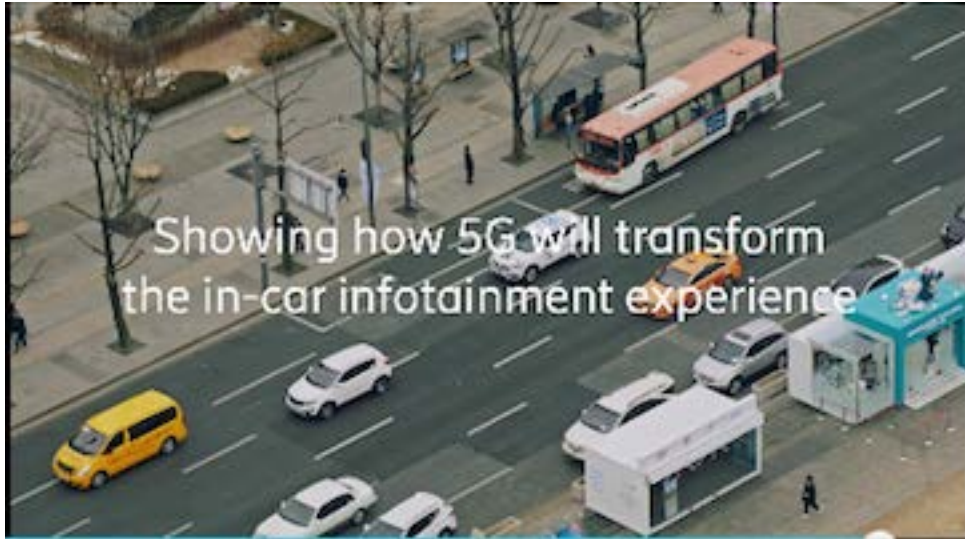
As of November 19, 2019, a self-driving electric shuttle is on the roads of Montgomery County in Clarksburg, Maryland. “Both Local Motor’s Olli [ as shown ] shuttle and Pratt Miller’s shuttle are equipped with Robotic Research’s [ a Montgomery County company ] AutoDrive™ autonomous driving appliqué and nSight™ data collection and analysis suite.”

<https://wtop.com/montgomery-county/2019/11/self-driving-shuttle-debuts-in-montgomery-county/>

### 2) Ericsson, Intel and Korea Telecom

“In February 2018 Ericsson and Korea Telecom together with Intel conducted a 5G trial connecting a car to a live 5G network.” The reason for 5G in a car was stated to be for entertainment purposes.





<https://www.ericsson.com/en/networks/cases/5g-live-in-korea>

### 3) Ford

In early 2019, "Ford will test self-driving cars in Washington, DC, with an emphasis on 'equity'"



<https://www.theverge.com/2018/10/22/18008980/ford-self-driving-car-test-washington-dc-av>

No 5G was in place in DC in 2019.



#### 4) GM

In 2019, GM plans of using its own autonomous cars its own taxi fleet.

	
<a href="https://media.gm.com/media/us/en/gm/bcportal.html/currentVideoId/5468422845001/currentChannelId/MostRecent.gsaOff.html">https://media.gm.com/media/us/en/gm/bcportal.html/currentVideoId/5468422845001/currentChannelId/MostRecent.gsaOff.html</a>	<a href="https://venturebeat.com/2018/01/12/gm-debuts-fully-autonomous-vehicle-with-no-wheel-or-pedals-as-it-plans-2019-launch/">https://venturebeat.com/2018/01/12/gm-debuts-fully-autonomous-vehicle-with-no-wheel-or-pedals-as-it-plans-2019-launch/</a>

#### Property Values

The person concerned about the health effects of cellular radiation will be reluctant to buy a home or refuse to buy a home with cell towers in front of their new home. This will translate into lower home values for the neighborhood.

Is this what the council wants for 61 more houses in Montgomery County?  
A count of 61 small cell towers is what we got.

#### 1) Appeal Board Lowers Tax Assessment

Property Tax Assessment Appeal Board for Montgomery County reduced property tax in part because of cell tower.



# STATE OF MARYLAND

PROPERTY TAX ASSESSMENT APPEAL BOARD FOR MONTGOMERY COUNTY

Tel. No. 301-279-8333

51 MONROE PL # 201, Rockville, MD 20850

FAX # 301-279-1910

TO:

[REDACTED]

SILVER SPRING MD 20903 - 1336

COPY TO:

DEPT OF ASSESSMENT  
AND TAXATION  
30 W. GUDE DR # 400  
ROCKVILLE MD 20850

COPY TO:

DEPT OF FINANCE  
MONTGOMERY CO GOV  
255 Rockville Pike # LL15  
ROCKVILLE MD 20850

PTAAB APPEAL Number: [REDACTED] (Tax Year 2010)

Date of Hearing: [REDACTED] MARCH 2011

Property ACCOUNT Number: [REDACTED]

Property under appeal: [REDACTED]

## ORDER

Date: [REDACTED] APRIL 2011

This is to certify that the Property Tax Assessment Appeal Board considered the above numbered case and has ruled that the determination by the Department of Assessments and Taxation be reversed.

Comparables warrant a reduction in value. Probability of neighboring cell tower also affects value negatively.

### Adjusted New Market Value

Land:

Improvements:

Total



*V. Shyamsunder*

Shyamsunder Viswanatha (or 'SAM')  
CLERK TO THE BOARD

<https://www.scribd.com/document/64222439/Probability-of-neighboring-cell-tower-also-affects-value-negatively>

## 2) Studies

### Cell Phone Towers Lower Property Values: Documentation And Research on Cellular Base Stations Near Homes

Research indicates that over 90% of homebuyers and renters are less interested in properties near cell towers and would pay less for a property in close vicinity to cellular antennas. Documentation of a price drop up to 20% is found in multiple surveys and published

articles as listed below. The US Department of Housing and Urban Development (HUD) considers cell towers as 'Hazards and Nuisances.'

<https://ehtrust.org/cell-phone-towers-lower-property-values-documentation-research/>

The following peer-reviewed study published in the Appraisal Journal, Summer 2005, said homes near cell phone towers are devalued 20% to 25%.

The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods

by Sandy Bond, PhD, and Ko-Kang Wang

<https://www.emfanalysis.com/wp-content/uploads/2016/04/Impact-of-Cell-Towers-on-House-Prices.pdf>

This site lists articles, videos and studies showing declining property values around cell tower installations

<https://www.emfanalysis.com/property-values-declining-cell-towers/>

Summary and a reference to numbers articles documenting a reduction in home values with the introduction of cell towers.

<https://ehtrust.org/cell-phone-towers-lower-property-values-documentation-research/>

"Increasing numbers of people don't want to live near cell towers. In some areas with new towers, property values have decreased by up to 20%."

<http://nyrej.com/examining-invisible-urban-pollution-and-its-effect-on-real-estate-value-in-new-york-city-by-william-gati>

Property Values. We need to halt this ill-advised Wireless-only project and enter into a public process that delivers the least intrusive means to get the fastest, most reliable and energy-efficient Internet access (Wireline fiber-optic service to our homes — without data caps) and to put any new Wireless antennas much farther away

from our homes. Cell phone towers installed close to homes significantly reduces property values.

<http://mystreetmychoice.com/index.html>

Permit for cell tower wasn't followed.



In this famous case, the 68-foot tower was built in the wrong place. The owner has testified at many meetings, yet the county has done nothing.

Removal.

Require poles to be removed when a less obtrusive technology becomes a viable in a few years. For instance, the FCC commissioner's pizza box antenna.

Shawn Soper reports that Ocean City regulations require that "Crown Castle will have to submit a bond to cover the cost of removing the towers if and when they reach the end of their useful lives."

<https://mdcoastdispatch.com/2017/01/12/ocean-city-company-reach-compromise-to-keep-cell-towers-out-of-residential-districts/>

Safety

We need a defined set of safety standards for cell towers. Need to verify after construction that the standards were followed. Rancho Palos Verdes, California citizens report that towers were not constructed according to paperwork filed at zoning office.

### 1) 14700 Seneca Road

This power pole struck me as I was driving by as leaning precariously into the road. I realize a cell tower company doesn't own the pole, but you would think when installing their equipment on the pole the company would report a problem.



Pole leaning towards the road more so than other poles along Seneca Road.



Wires & Wires



There are a lot of boxes and wires on this pole that some kid could climb up. Someone could strangle themselves in the wires. Boxes extend down to climbing height.





Canister is leaning in such a manner to compensate for the leaning of the pole. Run an imaginary line down the center of the wooden pole. Notice the line doesn't split the canister into equal parts.

I could hear a fan when standing near this pole on Nov 5, 2017.

## 2) High Gables Drive and Great Seneca Highway

Unfortunately, safety doesn't seem to have been a concern for the designers of the cell tower near High Gables Drive and Great Seneca Highway.





What is this road guard protecting? Would spear a car jumping the curve.



This is a second view of the guardrail. Would seem that placing barrels of sand in front of the pole and electrical structure would be better than this short guardrail.



Where do these wires on the ground go?

One could trip over the wires.



Unprotected wires



Someone could stick his or her hand inside the pole.



Regular wood. Doesn't look like pressure treated wood.



Safe approach distance seems to be 5 feet, but there is no fence around site. After Repairs or upgrades, sign ended up detached, bottom of pole and partially hidden.



## Signals

I drove around Dufief, Flints Grove and Westleigh with my Sprint 3g iPhone 4 to gauge the signal quality. I found 3 bars at each of the proposed tower locations but one. This one if you walked five feet away improved to 3 bars.

CDMA coverage, 3G, is satisfactory in the Dufief, Flints Grove and Westleigh area.

In an email exchange with a radio frequency engineer, the engineer said a 4G LTE signal would travel about the same distance as a CDMA signal. That means my iPhone 4 gives an accurate representation of 4G LTE signal coverage. The 4G antennas need to be placed on the same poles where the 3g Sprint antennas are placed. To improve coverage for Dufief, Flints Grove and Westleigh install more 4G LTE antennas on the utility poles along Darnestown Road and Dufief Mill Road.

Street address	Sprint 3g Signal Strength
14604 Antigone Drive	3 Bars
11301 Brandy Hall Lane	3 Bars
11500 Brandy Hall Lane	3 Bars
14612 Dehaven Court	3 Bars
14828 Dufief Drive	3 Bars
14924 Dufief Drive	3 Bars
14971 Dufief Drive	3 Bars
15000 Dufief Drive	3 Bars
23 Flints Grove Drive	2 Bars
15043 Joshua Tree Road	3 Bars
15077 Joshua Tree Road	3 Bars
14704 Pebble Hill Lane	3 Bars
11612 Piney Lodge Road	3 Bars
14436 Rich Branch Drive	3 Bars
11705 Silent Valley Lane	3 Bars

#### Speculation

Cell tower companies are speculating that the general case of increasing cellular data traffic means the traffic will go up in my neighborhood. Cell tower companies are speculating that more capacity will be needed in my neighborhood. Make them provide that each DAS cell tower is needed. It is my understanding that the FCC does allow the rejection of a cell tower when there isn't a need. To not let the cell tower company get away with the generality that cellular traffic is increasing therefore we need to put towers in my neighborhood.

#### Squatting

Cell tower companies, telecommunication companies that build cell towers to rent out to major carriers, could be putting up the poles to squat on the real estate.

A Crown Castle lawyer at a Gaithersburg October 2<sup>nd</sup> council meeting said, “for the kind of wireless facilities that we need to build for this new generation of wireless service.” This new technology doesn’t exist. So, I conclude that existing technology is being put on the poles. Existing technology has a range of tens of miles. Technology will change. It’s certain electronics will shrink in size. We can wait for that “pizza box” which would fit nicely on our current light poles.

Look at the frequencies use by a pole in Germantown area.



This is found on the cell tower application form.

**Antenna Height AGL: 22'-10" RAD Center**

**Frequency bands to be used: AWS: 2120-2140 MHz DL, 1720-1740 MHz UL  
PCS: 1975-1990 MHz DL, 1895-1910 MHz UL**

Look up what the stated frequency to find its usage:

<https://www.signalbooster.com/pages/what-are-the-cellular-frequencies-of-cell-phone-carriers-in-usa-canada>

## Verizon Wireless

4G : 700 MHz Block C, Band 13 (LTE). 1900 MHz PCS, Band 1 (1xRTT/ EV-DO/ eHRPD). 1900 MHz PCS, Band 2 (LTE). 1700/ 2100 MHz AWS, Band 4 (LTE).

The proposed cell towers for are to be 4G.

Tax revenue decrease from real estate tax

As home prices fall in areas with cell towers in the underground right-of-way, Montgomery County will gather less real estate tax revenue.

Values used in calculating revenue impact.

- “Montgomery County Property Tax Rates. The median home value in Montgomery County is \$448,700. The average effective property tax rate in the county is **0.93%**, and the median total of real estate taxes paid per household in Montgomery County is \$4,193”

<https://smartasset.com/taxes/montgomery-county-maryland-property-tax-calculator>

- Counted 61 cell towers in front of homes
- Assume 30 homes near to tower
- Current tax revenue would be  $4,193 \text{ tax} * 61 \text{ cell towers} * 30 \text{ near by homes} = \$7,673,190$
- There are nearly 376,000 homes in Montgomery County according to the 2008-2012 American Community Survey. Less than half, or 48.5% are single-family detached homes.

<https://ggwash.org/view/34103/single-family-homes-are-the-minority-in-montgomery-county>

- $91,180 \text{ estimated homes have underground utilities} = 376,000 \text{ homes} * 48.5\% \text{ single family} * 50\% \text{ estimate percentage with underground utilities}$

The maximum loss would occur at a lesser percentage than 100% as people adjust to cell towers.

## Revenue from 61 cellular tower



. Here is the calculation:

61	cell towers
30	homes per tower
1,830	total homes
100	cost of cell phone per month
40	percent phone bill to tower
10	rent at percent revenue
7,320	Montgomery County revenue per month
87,840	Montgomery County revenue per year

## Tax revenue decrease caused by 61 DAS cell Towers

61 towers	7% reduction in property value	20% reduction in property value
lost real estate revenue	\$537,123	\$1,534,638
cellular income	\$87,840	\$87,840
lost revenue per year	\$449,283	\$1,446,798

Tax revenue from 40 percent cellular tower coverage. If the FCC gets its way there will not be any revenue from DAS towers.

. Here is the calculation:

91,180	estimated homes having underground utilities
36,472	40 percent homes near a cell towers
1,216	new cell towers

30 homes per tower  
 100 cost of cell phone per month  
 40 percent phones bill to tower  
 10 rent at percent revenue  
 145,888 Montgomery County revenue per month  
 1,750,656 Montgomery County revenue per year

Total tax revenue decrease caused by 40 percent of residential homes with underground utilities covered by DAS cell Towers

40 percent towers	7% reduction in property value	20% reduction in property value
lost real estate revenue	\$10,707,238	\$30,592,126
cellular income	\$1,750,656	\$1,750,656
lost revenue per year	\$8,956,582	\$28,841,470

“Trust but verify” Ronald Reagan

Cell towers in neighborhoods may be speculative on part of the cell tower companies. We need to grill cell tower companies on exactly what they are doing and why. We need to verify that they are doing something new not just renaming an existing technology so they have a better chance of putting towers in residential neighborhoods.

### 1) Before installation

Have a Montgomery county employee or contractor verify the need for each pole by checking for a significant lack of signal strength to justify a new pole. New poles may be rejected when the coverage is OK.

## 2) After installation

After installation of a cell tower in a neighborhood, have a Montgomery county employee or contractor verify that the tower is using 5G technology or more accurately that the tower isn't using 4G technology. There is speculation that some cell tower companies will put 4G technology on a neighborhood cell tower. If it is 4G, force a cell tower company to remove tower or just remove the tower.

<http://scientists4wiredtech.com/what-are-4g-5g/>

## 3) Yearly there after

Require the tower company to have third party verify radio frequency meets FCC requirements yearly. Verizon declined to install towers in one New York town when faced with this requirement.

### Underground

Require cell tower equipment boxes to be placed underground. Contrary to cell tower companies implied assertions, it is technically possible to place the electronics underground. What I conclude it means is that you cannot use the same equipment as used in New Mexico and Southern California.

### Rebuttal:

These moonshiners figured out how to cool their hooch. You would think cell tower company engineers could figure out how to cool electronics underground.



Former West Virginia moonshiner John Bowman explains the workings of a still. November 1996. American Folklife Center

<https://en.wikipedia.org/wiki/Moonshine>

# 1) Cities both with Snow and Underground Ancillary Cell Boxes

City	Rain 39"	Snow 26"
Denver, CO	16"	55"
Gaithersburg, Md	42"	24"
Hempstead, NY	48"	29"
Mason, Ohio	42"	14"
Rye, NY	48"	29"

-- **Mason, Ohio -- suburb of Cincinnati**

*1133.144 SMALL CELL FACILITY.*

(Ord. 2016-69, passed 9-12-2016)

<http://library.amlegal.com/nxt/gateway.dll/?f=templates&fn=default.htm>

*1188.08 SMALL CELL FACILITIES.*

*(3) A small cell facility shall not be located within a residential zoning district, a residential subdivision, or within 100 feet of a property that contains a residential use. However, a small cell facility may be located either*

*on the property or in the right-of-way adjacent to a valid conforming non-residential use that is located in a residential zoning district provided that the use is also located on an arterial or collector street as identified on the City of Mason Thoroughfare Plan.*

*(c) Quantity. No small cell facilities may be located within 2,000 linear feet from another small cell facility or cellular or wireless communication tower, unless such facility is co-located as defined in this chapter.*

*(3) All related equipment, including, but not limited to, electrical boxes, conduit, wiring, and mounting equipment shall be placed underground or be wholly contained within an enclosure so as not to be visible. Further, all electrical and communications connections shall run underground to the facility.*

*(Ord. 2016-69, passed 9-12-2016)*

<http://library.amlegal.com/nxt/gateway.dll/?f=templates&fn=default.htm>

How to search Mason, Ohio legislative documents:

do a string search via typing in the upper right corner box.

<https://www.imagemason.org/city-government/city-council/agendas-and-minutes/>

## **-- Rye, NY**

*In Underground Areas, the equipment cabinets shall be located underground with any above ground intrusion minimized.*

H(4)C Page 58 January 9th, 2019

<https://ryeny.swagit.com/play/01092019-1373>

*Best Best & Krieger LLP Partner Joseph Van Eaton and co-counsel Kristen Wilson, city attorney for Rye, New York, filed a successful motion for the City of Rye that resulted in a dismissal of a lawsuit challenging local authority to control placement of small cells in public rights of way.*

<https://www.jdsupra.com/legalnews/lawsuit-challenging-local-authority-81373/>

## **-- Village of Hempstead, Nassau County, NY**

*Design standards. PWSFs should meet the following design standards. These standards are directory, not mandatory.*

*(1)Color. All PWSFs should be painted or complementary with natural tones (including trees and sky).*

*(2)Size. The silhouette of the PWSF should be reduced to the minimum visual impact.*

*(3)PWSFs near residences should either:*

*(a)Provide **underground vaults** for equipment shelters; or*

*(b)Place equipment shelters within enclosed structures approved by the Village of Hempstead.*

<https://ecode360.com/search/HE0909?query=underground&guids=7219471>

## 2) Existing Underground Electrical Boxes

a) Crown Castle put underground boxes in Arizona and Southern California. Solved the heat problem. It rains in these states too.

b) Crown Castle spokes person doesn't say underground boxes would be impossible at all. He made it sound like that, but put in a bunch of qualifiers to say it was possible.

<https://www.youtube.com/watch?v=1oGeRZiXhmU&feature=youtu.be&t=96m03s>

c) Pepco put under ground power transforms in my neighborhood in the 1970's.

d) Verizon put in Fios in my neighborhood in the 2000's. My observation was the Fios included running of power cables along with the fiber cables. I assume the power cables are there to power underground electronics of some sort.

e) People run electronics such as computers in their basements.

## 3) Plowed snow piles

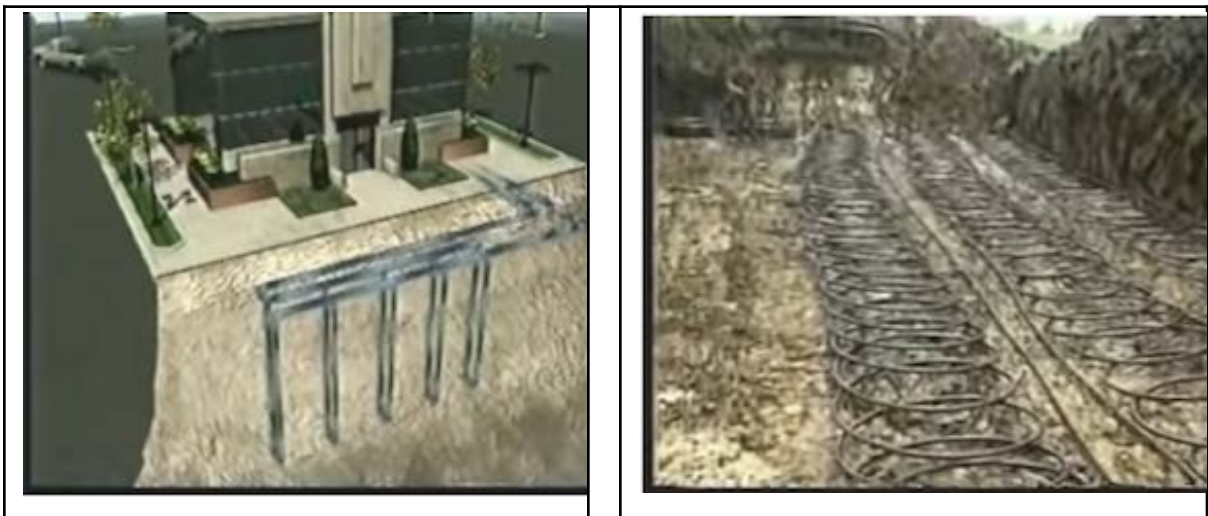
Both an above ground "mail" box and a below ground electronic box will have to deal with snow. Cell tower company's "mail" boxes near intersections will get covered in snow in the winter. "Mail" box electronics will have to survive a month or more covered in snow.

Several of the cell towers in Dufief, Flints Grove and Westleigh are replacements for a light pool at an intersection. Here is another Westleigh intersection in the winter along with a proposed site.



#### 4) GeoExchange Heating and Cooling System

The soil is 55 degrees a few feet underground which makes an excellent heat sink. The cell tower company could run some cooper or plastic pipe underground. Run the pipe through the electronics. Have a pump circulate antifreeze through the pipes. Now, you have cooled your electronics.





“Geothermal HVAC systems have been used for more than 60 years in the U.S. and beyond.”

<https://www.nationalgeographic.com/environment/great-energy-challenge/2013/10-myths-about-geothermal-heating-and-cooling/>

Video explanation:

<https://www.youtube.com/watch?v=NiNPhFqxODU>

Downhole heat exchanger

[https://en.wikipedia.org/wiki/Downhole\\_heat\\_exchanger](https://en.wikipedia.org/wiki/Downhole_heat_exchanger)

Ground-coupled heat exchanger

[https://en.wikipedia.org/wiki/Ground-coupled\\_heat\\_exchanger](https://en.wikipedia.org/wiki/Ground-coupled_heat_exchanger)

Underground Equipment Enclosures -- DIY

Utilize marine water-cooled refrigeration technology. Dig a well like hole. Please cooling loop in hole. Circulate via water pump. Place the electronics in a marine refrigerator that is water-cooled. Attach cooling line to refrigerator. My two refrigerators are over thirty years old. This equipment would be very reliable.

Water-cooled - MAGNUM

- Fridge or Freezer use
- 12/24 V Danfoss/Secop compressor
- Universal kit AC/DC optional for a complete power supply compatibility (12/24 V, 230/115 V and 50/60 Hz)
- Self-priming sea water pump to ensure extra high efficiency for tropical applications
- Variable speed water pump according to the temperature of the water circulating inside the condenser



Wait

Wait until companies propose using the latest technology and to be leaders in residential quality.

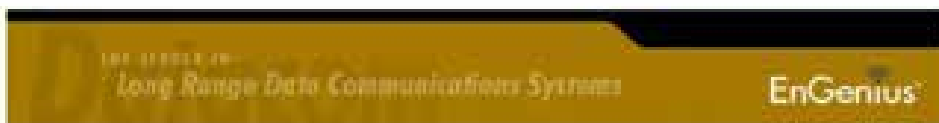
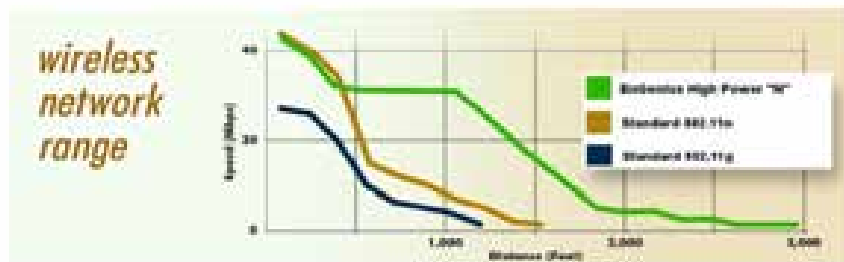
## Way Out of the box

### 1) All for Wi-Fi

Have the county sponsor community Wi-Fi. In any community with small cell towers installed or proposed, have the community vote on if they want to pay a special tax for Wi-Fi to be installed in their neighborhood.

A Wi-Fi box would fit nicely on top of an existing streetlight. You can get a common outdoor Wi-Fi router with a range of 300 feet, which would mean towers every 500 feet to allow a little fudge. The outdoor Engenius High Power “N” router has a stated range of over 1,000 feet, which would let the poles be 2,000 feet apart [ in theory ]. Thus, allowing the poles to be further apart than the off stated distance of 500 for the proposed DAS towers.

### Comparative Signal Ranges by Standard



[https://www.engeniustech.com/resources/Webinar-Presentation\\_3-13-2012.pdf](https://www.engeniustech.com/resources/Webinar-Presentation_3-13-2012.pdf)



### Dimensions and Weights

Length: 11.22", Width: 8.58" and Depth: 2.1"

Weight: 4.17 lbs



<https://www.engeniustech.com/managed-outdoor-access-points.html>

<https://nerdtechy.com/best-outdoor-Wi-Fi-range-extender>

The smaller size and longer range of the latest generation of Wi-Fi devices points out how behind the times the technology cell tower companies are promoting.

### 3) Copper wire

Force Verizon to sell its defunct copper wire. When I had DSL, Verizon charged me \$15 per month. While Verizon the owner of the wire capped the speed at 1meg, others owners using alternative technology have increase the data speed. London, UK users report speed of 30meg. A “G.fast” Technology exists to extended the speed to 1gig. A new owner should be able to achieve faster speeds at a lower cost to the customer. Faster DSL would bring more competition and a reduction in price as the theory goes.

[https://en.wikipedia.org/wiki/Digital\\_subscriber\\_line](https://en.wikipedia.org/wiki/Digital_subscriber_line)

### 4) Reciprocity

When a cell tower company installs a cell tower in a utility right of way with all under ground utilities and in a community with income above the average for Montgomery County, require the cell tower company to put in an antenna in a less well to do community.

### 5) Signal blocking

For people who do not want 5G signals in their homes, require the cell tower company to coat or replace windows with materials that reflect cellular signals.



<http://www.lessemf.com/plastic.html> - 1215

“It’s really hard to get [millimeter-wave] signals to travel through windows that are coated with material that reflects UV light (and most new homes and offices require this kind of coating in order to lower cooling costs).”

This article describes how the window treatments block cellular signals.

<http://www.fiercewireless.com/5g/editor-s-corner-verizon-says-its-new-indoor-outdoor-prototype-5g-modem-solves-one-28-ghz-biggest>

## 6) Sue FCC

Sue FCC over health issues. Should not be promoting 5G without testing health effects.

Best Best & Krieger LLP, Kissinger & Fellman are representing cities suing the FCC.

## 7) Sue cell tower companies

Sue cell tower companies over the taking of property. Cell towers in my community will reduce property tax revenue as home values decrease. There is the concept of a neighbor taking property by inconsiderate behavior.

## 8) Tax

Tax all broadband carriers based on electricity usage. Less power used means less effect on the environment

## 9) Compensation

Require tower companies to reimburse stakeholders all monetary losses. Pay homeowners for decreased property value. Reimburse county for decrease in tax revenue.

Pay legal costs for homeowners to sue cell tower companies over the decrease in their property values and decreased enjoyment of their property.

## 9) Volunteer

There are some people who want cell towers in their front yard. Require the cell tower company to seek these people out and place a pole in their front yard first.

## 10) Vote

Let the voters in each neighborhood vote on whether or not they want cell towers in their neighborhood.

This may not stand legal challenge but it would point out to the FCC and Congress that most likely the majority of voters do not want these cell towers. It would be an example of democracy in action. It would be a good basis for congressional action, as legislators would have to explain why they are not going with the will of the people.

A neighbor in Westleigh suggested this idea

## 11) Require Insurance

Tower companies should have insurance on all cell towers. Government should not be taking on this burden.

Should tower companies not be able to get insurance, they can form a consortium of their own to provide insurance.

## 12) Require tower companies to compensate for all damages.

Examples decrease in housing values and tax revenue.

I have presented no matter of mere 'concern' or any other nonsubstantive matter, but solely matters of substance, of fact and law.

“The End”



# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Children, Pregnant Women, and Adolescents Harm

- Children and adolescents are considered **a population at risk** in all matters relating to the health effects of exposure to radiation. The mental and physical characteristics of the young differ from those of adults. Therefore, exposure to radiation may affect their health in a different way.<sup>1</sup>
- The **President of the American Academy of Pediatrics** wrote to the Federal Communications Commission and the U.S. Food and Drug Administration in 2013 that “Current FCC standards do not account for the unique vulnerability and use patterns specific to pregnant women and children.” The AAP also said, “The current metric of RF exposure available to consumers, the Specific Absorption Rate, is not an accurate predictor of actual exposure.”<sup>2</sup> AAP represents 60,000 pediatricians. The FCC has yet to respond and propose standards appropriate to children, pregnant women for actual use.
- The **World Health Organization (WHO)** declared in 2010 that high priority should be given to research on the effect of radiofrequency radiation on the health of children. Accordingly, a number of large population studies are being conducted throughout the world, aimed at detecting potential effects of exposure of children to non-ionizing radiation emitted by various technologies.
- **Harvard Medical School** professor Dr. Martha Herbert, PhD, MD, a leading neuroscientist and autism expert: “EMF/RFR from wifi and cell towers can exert a **disorganizing effect on the ability to learn and remember**, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place.” **Autism Spectrum Disorders** are consistent with physiological impacts of EMF and Radiofrequency Radiation exposure:<sup>3</sup>
- **Depression and widespread neuropsychiatric effects** – “26 studies have EMFs associated with neuropsychiatric effects,” with 5 criteria showing causality. “EMFs cause at least 13 neuropsychiatric effects....”<sup>4</sup> due to voltage-gated calcium channel (VGCC) activation in the brain which controls neurotransmitters and neuroendocrine hormones. **ADHD** symptoms were documented in a study under the supervision of Hugh Taylor, MD, Yale University Chair of Obstetrics, **Yale School of Medicine** in mice exposed to cell phone radiation prenatally. The Yale study found “experimental evidence of neuropathology due to in-utero cellular telephone radiation.”<sup>5</sup>
- **Children absorb more microwave radiation (MWR)** than adults because their brain tissues are more absorbent, their skulls are thinner and their relative size is smaller. MWR from wireless devices has been declared a possible human carcinogen. Children are at greater risk than adults when exposed to any carcinogen. **Because the average latency time between first exposure and diagnosis of a tumor can be decades, tumors induced in children may not be diagnosed until well into adulthood. The fetus is particularly vulnerable to microwave radiation.**<sup>6</sup>
- The **American Academy of Environmental Medicine** has issued an Open Letter to School Superintendents that it “strongly supports the use of wired Internet connections, and encourages avoidance of radiofrequency such as from WiFi, cellular and mobile phones and towers, and “smart meters.” **The AAEM letter said, “The evidence is irrefutable.”**<sup>7</sup>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Children, Pregnant Women, and Adolescents Harm

### Reported short-term health effects from exposure to microwave radiation including children<sup>8</sup>

- Dizziness, headaches, nausea
- Fatigue, weakness
- Anxiety, depression
- Insomnia
- Numbness, tingling, joint pain
- Muscle spasms
- Skin rashes, allergies, asthma
- Blurred vision, impaired vision
- Nose bleeds, impaired sense of smell
- Shortness of breath
- Concentration problems, memory loss
- Behavioral problems, learning problems, ADHD
- Hyperactivity, heart palpitation

### Potential long term health effects from microwave radiation as indicated in scientific studies

- Brain cancers, acoustic neuromas and other tumors
- Leukemia
- Lymphoma
- Melanoma
- Reduced production of Melatonin
- Impaired fertility
- DNA damage
- Pre-natal damage, miscarriages, birth defects
- Immune dysfunction, chronic allergic responses and inflammatory responses
- Neurological and behavioral effects
- Dementia and Alzheimer's Disease
- Epilepsy

## References

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<http://ieeexplore.ieee.org/document/7131429?reload=true&arnumber=7131429&contentType=Journals%20%26%20Magazines>

IEEE is Institute of Electrical and Electronic Engineers

<sup>2</sup>Letter from American Academy of Pediatrics (President Dr. Thomas McInerney) to FCC (Acting Commissioner Clyburn) and U.S. FDA (Commissioner Hamburg), August 29, 2013. <https://ecfsapi.fcc.gov/file/7520941318.pdf>

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<sup>8</sup><http://www.wifi-in-schools-australia.org/p/emr.html>

# 4G/5G Wireless & “Small” Cell Antennas Fact Sheet

## Environmental Harm

- Radiofrequency / microwave (RF/MW) radiation from wireless infrastructures and devices produce harmful effects on human, animal, insect and plant life.<sup>1</sup>
- Cellular towers’ radiation cause harm to trees: discoloration and thinning of leaves, distorted growth of trunks as well as dead leaves and branches. Tree damage from RF/MW radiation usually starts on the side facing the antennas, and then covers the entire tree over time.<sup>2</sup> For misleadingly labeled “small” cell 4G/5G residential deployment, hundreds or thousands of trees in Montgomery County would be removed or heavily pruned, since 5G millimeter wavelengths in particular require antennas have close-proximity, direct line-of-sight near to homes to communicate successfully.<sup>3 4 5</sup>
- Plants are affected on a cellular, molecular and whole plant scale.<sup>6</sup> Among numerous plants, gene expression is altered after exposure to RF/MW radiation.<sup>6</sup> Across several plants species, seedling germination and growth are reduced.<sup>7</sup>
- Mammals, birds, fish, insects, and bacteria have basic cellular and biologic processes disrupted by RF/MW radiation.<sup>8</sup> Animals lose their ability to navigate, as the radiation disturbs the internal functions numerous animals rely upon for navigation, migration and survival.<sup>8</sup>
- Pollinators are harmed by RF/MW radiation, which affects honeybees’ life cycles.<sup>9</sup> When affected by radiation, honeybees, our key agricultural pollinators, don’t return to the hive; the strength of colonies and productivity of queens are reduced; and eggs don’t transform into larvae.<sup>9</sup> Without pollinators, 33% of our fruits and vegetables would not exist.<sup>10</sup>
- Amphibians are harmed, with tadpoles suffering deformities and a 90% mortality rate from cellular towers only 140 meters away.<sup>11</sup>
- Birds exposed to RF/MW radiation from infrastructures express abnormalities in fertility, nesting patterns, navigation and reduced populations.<sup>12</sup>
- Mammals other than (and including) humans develop heart and eye conditions, chemical imbalances in the brain and DNA damage.<sup>10</sup> See separate Fact Sheet for human effects.

# 4G/5G Wireless and “Small” Cell Antennas Fact Sheet

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# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Testicular Injury and Sperm Damage

- “Consistent evidence from experimental research, epidemiological studies and in vitro (cells) laboratory, and in vivo [animal] studies shows that the radio frequency **microwave radiation exposure from wireless devices is associated with men’s reproductive health issues...**”<sup>1</sup>
- Exposure to radio frequency microwave radiation produces increases in testicular proteins in adults that are related to carcinogenic risk and reproductive damage.<sup>2, 3</sup> Further, cell phone use has been identified to induce **sperm DNA damages**<sup>4</sup> as a result of an overproduction of reactive oxygen species (ROS) in men continuously using mobile phones. This may lead to the development of different pathologies including tumors, and problems in the spermatogenesis.<sup>5, 6, 7, 8</sup> Recently, Meena et al. reported a significant increase in sperm DNA damage after whole body RF microwave radiation exposure at 2.45 GHz causing a **rearrangement of DNA segments and breakage of DNA in the testes**. They concluded that any changes at DNA level in sperm or any other cell type may have mutagenic or tumorigenic effects.<sup>9</sup>
- The test group of human sperm in a 2009 Australian study showed a significant **decrease in sperm motility** after exposure to radio frequency microwave radiation as compared to sperm not exposed to RF microwave radiation.<sup>10</sup> Epidemiological studies of men assessed for infertility were consistent in demonstrating decreased sperm motility associated with increased use of mobile phones” and “biological effects on sperm motility related to RF microwave radiation exposure”.<sup>11</sup> Several other studies also reported a decline in sperm motility together with a decrease in an important protein necessary for motility called protein kinase C (PKC).<sup>12, 13, 14</sup>
- “A peer review published study studying the effects of long-term exposure to 4G radiofrequency microwave radiation concluded that such Long-term exposure to RF microwave radiation directly impaired testes....” These results suggested that **long-term exposure directly led to testicular morphologic injury** in rats contributing to **diminished reproductive potential** of adult male rats.”<sup>15</sup> Shahin demonstrated that long-term systemic exposure to RF microwave radiation led to **oxidative stress injury and apoptosis** in the testes of mice.<sup>16</sup>
- Radiofrequency microwave radiation has also been correlated with **reduced sperm count**.<sup>17, 18, 19</sup> Similarly, Yan conducted long-term whole-body exposure to RF microwave radiation by using a smartphone and found that RF **microwave radiation increased incidence of sperm death and aberration rate** of sperm in rats.<sup>20</sup> Similar results were found in humans in the 2009 Australian study.<sup>21</sup>
- “Cell phones have also been linked to **erectile dysfunction (ED)**. In a 2013 study published in the Central European Journal of Urology, men with ED carried switched-on cell phones for longer periods of time (average of 4.4 hours daily) than men without ED (average 1.8 hours daily).”<sup>22</sup>
- The **Cleveland Clinic** advises men that they should **not keep cell phones in their pocket** if they want to have children. “*We recommend that men who are actively trying to cause a pregnancy keep their cell phone as far as possible from their pelvic area.*”<sup>23</sup>

## Testicular Injury and Sperm Damage

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# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Property Values Reduction

- **Montgomery County Government States Cell Towers Near Homes Decrease Property Values**  
In a filing in a lawsuit against the Federal Communications Commission, the County said through its experts that “...the placement of small cells – depending on their size and visibility – may affect neighboring property values....even as small reduction in value of homes in a neighborhood may have a multi-million dollar effect.” Expert testimony states that “studies have concluded that a visible antenna up to 1,000 feet away results in property value reduction of 1.82% for a residential home or \$3,342 in the market studied.”<sup>1</sup>
- **94% of People Said a Nearby Cell Tower ... Would Negatively Impact Interest In A Property Or The Price**  
“A survey conducted in June 2014 by the National Institute for Science, Law and Public Policy (NISLAPP) in Washington, D.C....shows home buyers and renters are less interested in properties located near cell towers and antennas, as well as in properties where a cell tower or group of antennas are placed on top of or attached to a building. And **79% said under no circumstances would they ever purchase or rent a property within a few blocks of a cell tower or antennas.** And almost 90% of respondents said they were concerned about the increasing number of cell towers and antennas in their residential neighborhood, generally.”<sup>2 3</sup>
- **Reduction in Tax Assessment by Montgomery Co. Appeals Board for Probable Cell Tower**  
The Property Tax Assessment Appeal Board for Montgomery County lowered a Rockville home’s assessment: “Comparables warrant a reduction in value. Probability of neighboring cell tower also affects value negatively. April 2011, reversing determination by the Department of Assessments and Taxation.”<sup>4</sup>
- **Wireless Towers in Visual Range**  
“values declining ... up to 9.78% for homes within tower visibility range compared to homes outside tower visibility range”<sup>5</sup>
- **20-25% Devaluation Found in Peer-Reviewed Study for Homes Near Cell Towers**  
“The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods <sup>6</sup> by Sandy Bond, PhD, and Ko-Kang Wang. A peer-reviewed study found Homes near cell phone towers were devalued 20% to 25%.
- **5G Requires Cutting Down Trees in Yards – Reduces Value By Several Thousand Dollars <sup>7</sup>**  
5G requires direct “line of sight” from the cell antenna in front of the house, or from several houses away, to each house. So many thousands of trees in Montgomery County would need major branches removed or cutting down.
- **Two Reasons Buyers May Refuse to Buy Near “Small” Antennas–Health Risk and Aesthetics**  
This will translate into lower home values. This site lists articles, videos and studies showing declining property values around cell tower installations<sup>8</sup>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Property Values Reduction

### References

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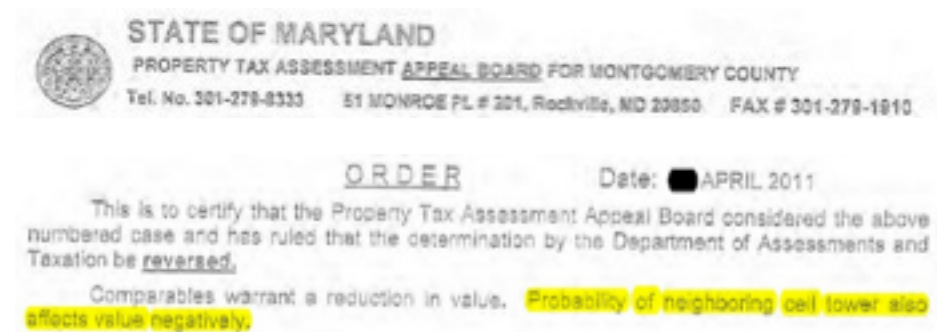
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Photocopy of reduction in tax assessment for a house in Rockville by the Appeals Board for Montgomery County:





# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Cities that have Curtailed or Banned Cell Towers

- **Mill Valley, California**

Mill Valley city council voted unanimously block deployments of 5G towers in the city's residential areas by activating an urgency ordinance. The legislation, which is effective immediately, allows authorities to enact regulations affecting the health and safety of residents. **San Anselmo** and **Ross** have already adopted similar ordinances.<sup>1</sup>

- **Encinitas, California**

City Council agreed unanimously to bar 5G antennas from being installed in residential zones, park lands and “very high” fire hazard areas. They also cannot be installed within 500 feet of a day care center, a school or a residence that is not in a residential zone.<sup>2</sup>

- **New York, New York**

Re “[t]he City’s prohibition on installation of utility poles in the public rights-of-way in Manhattan, this policy reflects the City’s determination, going back over a century, to underground all utility wiring in the City’s densest areas, including Manhattan.”<sup>3</sup> New York City “supports the comments filed by the NLC [National League of Cities] and its statements that Commission attempts to regulate right-of-way management and zoning matters is both unnecessary and violative of the Telecommunications Act of 1996.”<sup>4</sup>

- **San Francisco, California**

“The City needs to regulate placement of such facilities in order to prevent telecommunications providers from installing wireless antennas and associated equipment in the city’s public rights-of-way either in manners or in locations that will diminish the city’s beauty.”<sup>5</sup>

- **Gaithersburg, Maryland**

The City of Gaithersburg rejected the siting of cell towers in the utility right-of-way in areas with underground utilities. Gaithersburg based some of its December 2017 wireless ordinance on New York City’s statutes.<sup>6</sup>

- **Rancho Palos Verdes, California**

The city has “a very strong and detailed ordinance<sup>7</sup> for cell towers in the public right of way.”<sup>8</sup> “Crown Castle Telecom Co. has usually found it's easier to comply than to convince our Planning Commission an exemption is required.”<sup>9</sup>

- **Westminster, Maryland**

The City of Westminster established a public-private partnership to develop a local fiber broadband network at 1 Gigabit per second speed, faster than local Verizon service.<sup>10</sup>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Cities that have Curtailed or Banned Cell Towers

- **Chattanooga, Tennessee**

Chattanooga, through its city-owned electric utility, provides internet to residents.<sup>11</sup> In 2010, the Electric Power Board [of Chattanooga] was the first company in the United States to offer 1 Gbit/s high-speed internet, over 200 times faster than the national average.<sup>12</sup> In 2019, the mayor said, “the robust broadband fiber network [his] city built and operates has created the “smartest, cheapest Internet service in the world.”” In the mayor’s view, his city’s gigabit fiber network can handle the job [of “smart-cities” technology improvements] just fine.”<sup>13</sup>

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<sup>3</sup> [https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc\\_reply\\_comments\\_acceleration\\_broadband.pdf](https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc_reply_comments_acceleration_broadband.pdf)

<sup>4</sup> [https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc\\_reply\\_comments\\_acceleration\\_broadband.pdf](https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc_reply_comments_acceleration_broadband.pdf)

<sup>5</sup> <http://www.fiercewireless.com/wireless/tensions-rise-as-officials-struggle-to-address-small-cell-deployment-challenges>

<sup>6</sup> [https://library.municode.com/md/gaithersburg/codes/code\\_of\\_ordinances?nodeId=PTIITHCO\\_CH24ZO\\_ARTIVSUZORE\\_S24-167ASAANTOPOANOTSTINUSCOTRRERATESITEFA](https://library.municode.com/md/gaithersburg/codes/code_of_ordinances?nodeId=PTIITHCO_CH24ZO_ARTIVSUZORE_S24-167ASAANTOPOANOTSTINUSCOTRRERATESITEFA)

<sup>7</sup> [https://library.municode.com/ca/rancho\\_palos\\_verdes/codes/code\\_of\\_ordinance?s?nodeId=TIT12STSIPUPL\\_CH12.18WITEFAPURI-W](https://library.municode.com/ca/rancho_palos_verdes/codes/code_of_ordinance?s?nodeId=TIT12STSIPUPL_CH12.18WITEFAPURI-W)

<sup>8</sup> As reported by Jeff Calvagna resident of Palos Vardes, California

<sup>9</sup> As reported by Jeff Calvagna resident of Palos Vardes, California

<sup>10</sup> <http://www.westminstermd.gov/419/Westminster-Fiber-Network>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Cities that have Curtailed or Banned Cell Towers

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<sup>11</sup> <https://en.wikipedia.org/wiki/EPB>

<sup>12</sup>

[https://www.nytimes.com/2010/09/13/technology/13broadband.html?pagewanted=1&\\_r=1&src=busln](https://www.nytimes.com/2010/09/13/technology/13broadband.html?pagewanted=1&_r=1&src=busln)

<sup>13</sup> <https://meritalkslg.com/articles/chattanooga-mayor-pushes-back-on-5g-as-smart-cities-cure-all/>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## We Don't Need 5G

- **Myth 1: Needed to Improve 911 Coverage**
  - 911 calls can instead simply be given higher priority in the telephone network than regular calls. Prioritization of calls already exists, so it should be straight forward to add 911 calls as a priority.
  - Senior government officials, such as President Trump, have the ability to prioritize their calls,
  - California firefighters suffered “brain abnormalities and measureable neurological abnormalities” from cell towers on their stations which measured 1/1000<sup>th</sup> of the FCC microwave limits. They could not perform their jobs on 911 calls, and won complete exemption from 5G deployment. They advocate exemption of all fire stations in the U.S. and Canada from 4G and 5G towers.<sup>1</sup>
- **Myth 2: Needed to Improve Today's 4G Coverage and Services**
  - Coverage can be improved today with existing cellular technology.
  - ZTA 19-07 doesn't provide any incentives to target underserved communities.
  - The initial zoning requests for 5G “small” cell antennas targeted communities that could afford internet access via 5G, but not pay for lawyers to help stop the installations.
  - The community of Westleigh in Potomac will gladly transfer its 5G antennas to any other community. The Homeowners Association opposes their 5G deployment.
- **Myth 3: We need the Internet of Things (IoT) and Three Million Devices/Square Mile<sup>2</sup>**
  - Increased data traffic can be handled on mostly wired data highways.
  - Wired data transmission is safer, faster, more reliable, and more secure.
  - The security of 5G systems is exponentially worse than that of current 4G systems.
  - There have been no independent surveys of fully informed users if they want complete digitization of their lives at the cost of being microwaved.
  - Children today need reduced exposure to electronics, not more exposure. “Internet addiction” is a recognized condition that shrinks the brain similar to alcohol and cocaine addiction.<sup>3</sup> It is included in the Diagnostic and Statistical Manual of Mental Disorders (DSM). North American children have an epidemic of myopia, near sightedness, from screen time.<sup>4</sup>
- **Myth 4: The 5G frequencies that have been licensed have very similar characteristics to current mobile communications technologies that have been in use for 30 years, and lie within a range of 700 MHz to 3.8 GHz. Some of the frequencies were previously used for radio and TV broadcasts. Thus, in the matter of radiation exposure, no significant changes are to be expected.**
  - Many peer reviewed studies have shown major biological harm of 2G, 3G and 4G<sup>5</sup>
  - 5G will have additional, untested technology of millimeter waves and pulsed, data-modulated microwave frequencies. “We have no reason to believe 5G is safe.”<sup>6</sup>
  - FCC hasn't taken into account the cumulative effect of 3G, 4G, and 5G signals all being present, from multiple sources such as smart meters in addition to cell towers. No attempt has been made by FCC to include cumulative effects in studies.

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## We Don’t Need 5G

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<sup>1</sup> <https://scientists4wiredtech.com/2018/07/firefighters-living-next-to-cell-towers-suffer-neurological-damage/>

<sup>2</sup> <https://technology.ihs.com/611104/5g-and-massive-iot>

<sup>3</sup> <https://talbotcampus.com/how-internet-addiction-affects-your-brain/>

<sup>4</sup> <https://medicalxpress.com/news/2019-02-screen-linked-epidemic-myopia-young.html>

<sup>5</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5583901/>

<sup>6</sup> <https://blogs.scientificamerican.com/observations/we-have-no-reason-to-believe-5g-is-safe/>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Climate Change Impact

5G would facilitate a massive shift from wired and fiber-optic communication, to wireless communication. It is much more efficient to send data through copper wires or fibers than through air. An exhaustive study published in the professional journal of the Institute of Electronic and Electronics Engineers (IEEE) said: **“wireless technologies will continue to consume at least ten times more power than wired technologies, when providing comparable access rates and traffic volumes.”**<sup>1</sup> Other estimates are even higher.<sup>2</sup>

**Higher energy consumption inevitably means higher greenhouse gas emissions.** We are still getting most of our energy from fossil fuels and other forms of combustion. Less than 4% of PEPCO’s energy comes from wind and solar. Yet even wind and solar need major amounts of energy for their high-end manufacturing.

Historically, data transmission has been only a small part of overall energy consumption. But this is changing very fast. The Shift Project, an international team of scientists, engineers and telecommunications experts based in Paris, recently published a report saying that global digital energy demand is now increasing by 9% every year.<sup>3</sup> The Shift Project says that **digital technologies now emit 4% of greenhouse gases (GHG), more than civil aviation. Under the industry proposals, these emissions would double before 2025 to 8%, the amount that car emissions emitted worldwide in 2019.**

Swedish energy expert Anders Andrae estimated that **internet communications technologies could be responsible for 14% of global greenhouse gas emissions by 2040, undermining our efforts to combat climate change.**<sup>4</sup>

The Internet’s main energy demand is for data centers of thousands of servers, that never stop and must have many backups. Natural Resources Defense Council (NRDC) said the 2 million servers in data centers annually use the same amount as “electricity to power all of New York City’s households for 2 years.”

The use of the devices is the second major increase energy demand by 5G. **The industry is proposing 3,000,000 devices per square mile**<sup>5</sup> Streaming 52 hours of video consumes more electricity than running two refrigerators for a year.<sup>6</sup> The tsunami of data produced as the industry proposes to digitalize all our machines, appliances and devices would also warp the economy to dependence on this inefficient, huge energy demand far into the future.

A rollout of 5g will also result in a **major loss of tree canopy**, due to “line of sight” requirements for the higher-spectrum millimeter wavelengths. Tree canopy is essential for local cooling and increased rainwater absorption, two important ecological mitigations for increased warming and drought. While the global climate movement is beginning massive tree planting projects, 5G would reverse this effort. The “line of sight” cutting would also **remove carbon sequestration by thousands of trees.** The 5G permitting process would also eliminate the forest conservation review and other standards currently required for cell towers.

5G is not part of any safe or sustainable solution to climate change.

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Climate Change Impact

### References

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<sup>1</sup> “Energy consumption in wired and wireless access networks” Jayant Baliga ; Robert Ayre ; Kerry Hinton ; Rodney S. Tucker, IEEE Communications Magazine ( Volume: 49, Issue: 6, June 2011 ), [https://web.archive.org/web/20171114021923if\\_/http://ieeexplore.ieee.org/abstract/document/5783987/](https://web.archive.org/web/20171114021923if_/http://ieeexplore.ieee.org/abstract/document/5783987/) (paid)

<sup>2</sup> “Energy Consumption from the Internet of Things and Wireless Technology”  
<http://whatis5g.info/energy-consumption>

<sup>3</sup> “Lean ICT: Towards Digital Sobriety” by Hugues Ferreboeuf for the Think Tank The Shift Project, March 2019, p.17, [https://theshiftproject.org/wp-content/uploads/2019/03/Lean-ICT-Report\\_The-Shift-Project\\_2019.pdf](https://theshiftproject.org/wp-content/uploads/2019/03/Lean-ICT-Report_The-Shift-Project_2019.pdf)

<sup>4</sup> “‘Tsunami of data’ could consume one fifth of global electricity by 2025”  
<https://www.theguardian.com/environment/2017/dec/11/tsunami-of-data-could-consume-fifth-global-electricity-by-2025>

<sup>5</sup> “5G and Massive IoT: legacy technologies will bridge the gap for now”, Feb 13, 2019, by Christian Kim  
<https://technology.ihs.com/611104/5g-and-massive-iot>

<sup>6</sup> Singer, Kate. The Electronic Silent Spring (2014) and Limits to Electronic Growth (forthcoming). In “The Real Amount of Energy Used to Power the Internet”, Singer wrote on the importance of reducing the Internet’s footprint through her work for the EMR Policy Institute.

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Lack of Insurance

- **Corporate Company Investor Warning on Cell Phone Radiation Risks in Annual Reports:** “We may incur significant expenses defending such suits or government charges and may be required to pay amounts or otherwise change our operations in ways that could materially adversely affect our operations or financial results.” Similar wording is in the 2016, 2017 and/or 2018 Annual Reports of the following companies: **Verizon Communications Inc., Blackberry Limited, Vodafone, AT&T, China Mobile Limited, General Communications Inc., American Tower Corporation, Crown Castle, Crown Castle International, Telefonica S.A., America Movil S.A.B de C.V., T-Mobile US Inc., Waste Disposal Inquiry Involving DIRECTV, GCI Inc., Nokia Corp., Microsoft Corporation, Telstra, SoftBank Group Corp.**<sup>1</sup> Crown Castle is the major applicant for Montgomery County.
- **“In 2013, AM Best, the leading insurance rating agency, estimated that 250,000 workers are overexposed to radiation annually at wireless antenna sites.** Since then, global insurers have chosen to exclude RF coverage from their policies. **The last global insurer to exit the RF exposure market was Lloyd's of London in 2015.** The ramifications of insurance firms excluding RF coverage are considerable. Without insurance coverage, wireless providers may find property owners less willing to lease space for antennas and current property owners may be less willing to renew existing leases. Without adequate insurance, the risk to the property owners far outweighs the lease revenue they receive. A single uninsured RF injury claim can wipe out years of lease revenue and expose the property owner to expensive litigation costs.”<sup>2 3</sup>
- Swiss Re Institute, one of the world’s leading providers of reinsurance and other forms of insurance-based risk transfer: **“Existing concerns regarding potential negative health effects from electromagnetic fields (EMF) are only likely to increase.** An uptick in liability claims could be a potential long-term consequence. Other concerns are focused on cyber exposures, which increase with the wider scope of 5G wireless attack surfaces. Traditionally IoT [Internet of Things] devices have poor security features....There are also worries about privacy issues (leading to increased litigation risks), security breaches and espionage.” May 2019<sup>4</sup>
- **“Small Cell” Bill Would Have Shifted Liability From Industry to State of California (SB649):** In letter dated July 19, 2017 the Law Office of Harry Lehmann explained how the State of California could face liability for damages claims under Senate Bill 649 because the Bill would shift liability from the Telecom industry to the State of California. He documented in detail the science indicating serious harm – including DNA impacts and cancer – from microwave radiation. He stated that under California government code, lawsuits can be brought for “Dangerous condition of public property.” Lehmann pointed to the fact that the State of California allowed firefighters to be exempt from the wireless infrastructure as proof that California State has already admitted “the dangerous nature of the about to be built ‘small cell’ system, because as a matter of provable Legislative Intent, the firehouses were exempted due to health concerns.”<sup>5</sup>



# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Lack of Insurance

- **The public is increasingly aware of the possibility of harm from wireless microwave technology.** The U.S. Supreme Court allowed a Berkeley, CA, ordinance to stand that requires retailers to notify customers that the Federal Communications Commission sets radiation standards for cell phones, and that **exposure “may exceed the federal guidelines” if users carry their phone in a pants or shirt pocket or tucked into a bra while they’re connected to a wireless network. Retailers must display the warning on a poster or in a handout flyer.** December 9, 2019, CTIA-The Wireless Association vs. Berkeley, Case 19-439.<sup>6</sup>

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<sup>1</sup> <https://ehtrust.org/key-issues/corporate-company-investor-warnings-annual-reports-10k-filings-cell-phone-radiation-risks/>

<sup>2</sup> <https://talkmarkets.com/content/stocks--equities/a-coming-storm-for-wireless?post=143501>

<sup>3</sup> <http://www.ambest.com/directories/bestconnect/EmergingRisks.pdf>

<sup>4</sup> <https://www.swissre.com/institute/research/sonar/sonar2019/SONAR2019-off-the-leash.html>

<sup>5</sup> <https://ehtrust.org/law-letter-small-cell-bill-will-shift-liability-reasonably-result-bankruptcy-california-sb649/>

<sup>6</sup> <https://www.governing.com/news/headlines/Supreme-Court-Agrees-Cellphone-Companies-Must-Post-Warnings.html>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Cities that have Curtailed or Banned Cell Towers

- **Mill Valley, California**

Mill Valley city council voted unanimously block deployments of 5G towers in the city's residential areas by activating an urgency ordinance. The legislation, which is effective immediately, allows authorities to enact regulations affecting the health and safety of residents. **San Anselmo** and **Ross** have already adopted similar ordinances.<sup>1</sup>

- **Encinitas, California**

City Council agreed unanimously to bar 5G antennas from being installed in residential zones, park lands and “very high” fire hazard areas. They also cannot be installed within 500 feet of a day care center, a school or a residence that is not in a residential zone.<sup>2</sup>

- **New York, New York**

Re “[t]he City’s prohibition on installation of utility poles in the public rights-of-way in Manhattan, this policy reflects the City’s determination, going back over a century, to underground all utility wiring in the City’s densest areas, including Manhattan.”<sup>3</sup> New York City “supports the comments filed by the NLC [National League of Cities] and its statements that Commission attempts to regulate right-of-way management and zoning matters is both unnecessary and violative of the Telecommunications Act of 1996.”<sup>4</sup>

- **San Francisco, California**

“The City needs to regulate placement of such facilities in order to prevent telecommunications providers from installing wireless antennas and associated equipment in the city’s public rights-of-way either in manners or in locations that will diminish the city’s beauty.”<sup>5</sup>

- **Gaithersburg, Maryland**

The City of Gaithersburg rejected the siting of cell towers in the utility right-of-way in areas with underground utilities. Gaithersburg based some of its December 2017 wireless ordinance on New York City’s statutes.<sup>6</sup>

- **Rancho Palos Verdes, California**

The city has “a very strong and detailed ordinance<sup>7</sup> for cell towers in the public right of way.”<sup>8</sup> “Crown Castle Telecom Co. has usually found it's easier to comply than to convince our Planning Commission an exemption is required.”<sup>9</sup>

- **Westminster, Maryland**

The City of Westminster established a public-private partnership to develop a local fiber broadband network at 1 Gigabit per second speed, faster than local Verizon service.<sup>10</sup>

- **Chattanooga, Tennessee**

Chattanooga, through its city-owned electric utility, provides internet to residents.<sup>11</sup> In 2010, the Electric Power Board [of Chattanooga] was the first company in the United States to offer 1 Gbit/s high-speed internet, over 200 times faster than the national average.<sup>12</sup> In 2019, the mayor said, “the robust broadband fiber network [his] city built and operates has created the “smartest, cheapest Internet service in the world.”” In the mayor’s view, his city’s gigabit fiber network can handle the job [of “smart-cities” technology improvements] just fine.”<sup>13</sup>

# 4G/5G Wireless & “Small” Antennas Fact Sheet

## Cities that have Curtailed or Banned Cell Towers

### References

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- <sup>1</sup> <https://www.sfgate.com/local/article/mill-valley-5g-antenna-tower-cell-phone-block-13221925.php>
- <sup>2</sup> [https://www.sandiegouniontribune.com/communities/north-county/story/2019-10-31/encinitas-to-ban-5g-wireless-antennas-near-schools-daycares-residences?fbclid=IwAR135VUcv\\_liwDNnotKU3N4FQPGIFNS1aMP0xKeL23tAh8SgaIgUBF-PGA0](https://www.sandiegouniontribune.com/communities/north-county/story/2019-10-31/encinitas-to-ban-5g-wireless-antennas-near-schools-daycares-residences?fbclid=IwAR135VUcv_liwDNnotKU3N4FQPGIFNS1aMP0xKeL23tAh8SgaIgUBF-PGA0)
- <sup>3</sup> [https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc\\_reply\\_comments\\_acceleration\\_broadband.pdf](https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc_reply_comments_acceleration_broadband.pdf)
- <sup>4</sup> [https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc\\_reply\\_comments\\_acceleration\\_broadband.pdf](https://www1.nyc.gov/assets/doitt/downloads/pdf/nyc_reply_comments_acceleration_broadband.pdf)
- <sup>5</sup> <http://www.fiercewireless.com/wireless/tensions-rise-as-officials-struggle-to-address-small-cell-deployment-challenges>
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- <sup>8</sup> As reported by Jeff Calvagna resident of Palos Vardes, California
- <sup>9</sup> As reported by Jeff Calvagna resident of Palos Vardes, California
- <sup>10</sup> <http://www.westminstermd.gov/419/Westminster-Fiber-Network>
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- <sup>12</sup> [https://www.nytimes.com/2010/09/13/technology/13broadband.html?pagewanted=1&\\_r=1&src=busln](https://www.nytimes.com/2010/09/13/technology/13broadband.html?pagewanted=1&_r=1&src=busln)
- <sup>13</sup> <https://meritalkslg.com/articles/chattanooga-mayor-pushes-back-on-5g-as-smart-cities-cure-all/>

A Small Sampling of the Numerous Scientific Research Studies Published After December 4, 2019- The Day the FCC Closed Their Inquiry on Human Exposure to Radiofrequency Radiation (RFR).

The Environmental Working Group published a study in Environmental Health analyzing the findings of tumor and heart damage from the National Toxicology Program study and concluded that FCC limits should be strengthened by 200 to 400 times to protect children according to current risk assessment guidelines (Uche 2021)

European Parliament requested a research report “Health Impact of 5G” released in July 2021 concluding that commonly used RFR frequencies (450 to 6000 MHz) are probably carcinogenic for humans and clearly affect male fertility with possible adverse effects on the development of embryos, fetuses and newborns.

A landmark three part 2021 research review on effects to wildlife published in Reviews on Environmental Health by U.S experts including former U.S. Fish and Wildlife senior biologist Albert Manville states current science should trigger urgent regulatory action citing more than 1,200 scientific references which found adverse biological effects to wildlife from even very low intensities of non ionizing radiation with findings of impacts to orientation and migration, reproduction, mating, nest, den building and survivorship (Levitt et al., 2021a, Levitt et al., 2021b, Levitt et al., 2021c).

- February 2020- Scientists of the National Institute of Environmental Health Sciences National Toxicology Program published a study finding “significant increases in DNA damage” in groups of male mice, female mice and male rats after just 14 to 19 weeks of exposure to RFR (Smith-Roe et al., 2020).
- March 2020- Yale researchers published a study supported by the American Cancer Society linking thyroid cancer to cell phone use in people with a type of common genetic variation (Luo et al., 2020).
- May 2020- A meta analysis of 300 peer-reviewed scientific publications (1990-2015) describing 1127 experimental observations in cell-based in vitro models on RFR published in Environmental Research found less differentiated cells such as epithelium and spermatozoa are more sensitive to RF (Halgamuge et al., 2020).
- May 2020- A review on real world exposure to 5G published in Toxicology Letters found that 5 G will have systemic effects as well as adverse effects to the skin and eyes (Kostoff et al., 2020).
- November 2020- A systematic review and meta-analysis of case-control studies found evidence that linked cellular phone use to increased tumor risk (Choi et al., 2020).
- February 2021- A 4G study found kidney inflammation and damage to the testes in mice (Hasan et al., 2021).
- March 2021- The Switzerland Institute of the Environment expert published

review found increased oxidative stress in the majority of animal studies and cell studies with exposures within regulatory limits (Schuermann et al., 2021).

- July/August 2021- Two systematic reviews find harm to sperm (Sungjoon et al, 2021, Yu et al., 2021).
  - August 2021- A review on impacts to the thyroid found RFR might be associated alterations in thyroid hormone levels, with a possible disruption in the hypothalamic-pituitary-thyroid axis (Alkayyali et al., 2021)
  - August 2021- 2400 MHz affects the structural integrity of the hippocampus in mice (Hasan et al., 2021).
  - August 2021- A review summarizes the effects of EMR on the neurotransmitters in the brain (Hu et al., 2021).
  - August 2021- Review on RFR and the brain published in the International Journal of Radiation Biology found the threshold for an effect in EEG is far lower than the level deemed safe by the U.S. FCC (Hinrikus et al. 2021).
  - September 2021- A systematic review on the effects of RFR to male reproductive hormones found that wireless can decrease testosterone reduction (Maluin et al, 2021).
  - September 2021- A review on the genetic effects of non-ionizing electromagnetic fields found DNA strand breaks, micronucleus formation, and chromosomal structural changes (Lai 2021).
  - September 2021- A systematic review published in the Annals of the New York Academy of Sciences found that neuronal ion channels are particularly affected (Bertagna et al 2021).
  - October 2021- A review in the International Journal of Oncology describes how EMFs lead to dysfunction of ion channels which lead to reactive oxygen species/free radical overproduction providing “ a complete picture” of how exposure may indeed lead to DNA damage and related pathologies, including cancer,” (Panagopoulos et al. 2021).
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## Recovering Money Owed to Marylanders from Verizon and Other Telecoms for Safe, Secure, Reliable High Speed Internet and Solving the Digital Divide

- Internet service provided by fiber is safe, fast, reliable, more secure from hacking, costs less, and has no environmental effects compared to wireless service. Fiber is resilient against extreme climate events and endures for decades with little maintenance.<sup>1</sup>
- Maryland residents have already paid for laying fiber to every address in the state. The payments were collected via existing, inflated and bogus charges on our telephone bills about 20 years ago, paid by all customers.<sup>2, 3</sup>
- The overcharging for Maryland is estimated at \$2.6 billion over the most recent five years.<sup>4</sup> But the overcharging started years earlier, so the total will be higher.
- The telecom companies illegally switched those payments to the development of wireless, and did not lay the fiber promised. They lost a federal lawsuit on this issue.<sup>5</sup>
- Fiber-to-the-premises was to be completed by 2010 in Maryland.<sup>6</sup>
- Telecom's failure to complete fiber-to-the-premises is responsible for the digital divide.<sup>6</sup>
- Each state can now force the telecom companies to return the money, in the range of billions of dollars per state; and/or live up to their promise to lay fiber to all buildings including rural and underserved inner city communities.
- New York State has pursued this remedy vigorously:
  - A lawsuit won by New York City on 11/26/20 held Verizon accountable for approximately **\$2.8 billion dollars to ensure that 500,000 households previously lacking Verizon broadband** will have the option of fiber broadband, and creates cost competition in areas where only one provider exists. Note: Leverage used at Verizon franchise expiration date.<sup>7</sup>
  - Verizon was **obligated to install** 10,000 – 12,000 fiber optic lines in underserved areas in 2018.<sup>8</sup>
- Fiber service is regulated by the Maryland Public Service Commission, while wireless is unregulated.<sup>9</sup> Future costs are unpredictable with wireless, including business costs.
- The nature of wireless networks exacerbates the cybersecurity threat.<sup>10</sup>
- Completing fiber-to-the-premises wired Internet will eliminate the digital divide in our society permanently.



## Additional Points

- 1) Wired Internet does not raise the **issues of health and safety from the microwave frequencies of wireless Internet**.<sup>11</sup>
- 2) Wired communications are **more resilient** to storm, flood and fire, and **reduce the enormous carbon foot print** from the present wireless approach.<sup>1</sup>
- 3) Security is one of the most important reasons to use a wired connection. **Large enterprises commonly use wired connections** because of the continuous **ongoing processes and inherent security** it provides.<sup>12</sup>
- 4) Wired Internet is **supported by unions**, including the **Communication Workers of America**.<sup>6</sup>
- 5) The FCC has ignored the fact that every Verizon **fiber optic deployment is part of the state-based utility**, and it has never examined the role of intrastate phone customers.<sup>13</sup>
- 6) Maryland's fiber coverage has bypassed rural areas and the inner city, with **over half of homes and businesses missing fiber as of 2015**:  
"Verizon's own press releases, combined with U.S. Census and FCC data, revealed the following for Maryland in 2015: only 44.81% FIOS coverage, 1,300,000 of 2,901,112 homes/businesses – just in Anne Arundel, Baltimore, Charles, Harford, Howard, Montgomery, Prince George's counties alone = **55.2% missing upgrades**."<sup>14</sup>
- 7) "Fiber" = "fiber optic" = "wired Internet" = "wired broadband" = "fiber-to-the-premises" = "FTTP"  
Note: "Broadband" by itself can mean either wired or wireless.

## Resource to Recover Maryland's Already Funded Infrastructure

The lawyers and accountants group that won the major national lawsuit is available for consulting on how to determine the amount owed to Maryland rate payers. They are called the "Irregulars". Or, the state can research the financial payments itself.

[Irregulars](#) is an independent consortium of senior telecom experts, analysts, forensic auditors, and lawyers who are former staffers from the FCC, state advocate and Attorneys General Office, as well as telecom auditors and consultants. Members of the group have been working together, in different configurations, since 1999.

The Irregulars team has worked mainly with NY for which they have the most data, but has started conversations with CA, CO, MA, MN, and PA.

## The Irregulars' Estimates of What Maryland Has to Gain

The calculations for the state of Maryland are based on model developed from Verizon New York 2019 Annual Report, published June 8<sup>th</sup>, 2020 and the previous decade of state-based annual reports, SEC-based quarterly filings for the Verizon territories, last published in 2010, and the last published data from FCC's Automated Reporting and Management Information System (ARMIS) information, supplying Revenues, Access Lines in 2007. These are 'partial' estimated overcharging examining only 3 primary expense areas: Corporate Operations Expenses Construction & Maintenance and Marketing expenses applied to Local Service which were also supplied in the FCC's state-based ARMIS 2007 database.

## Estimated Partial Annual Overcharging of Verizon for Maryland Local Services Utilities 2019

### FULL CALCULATION BY STATE\*

UTILITY	STATE	2019 LOW	2019 MEDIUM	5-YEAR (2015-2019)
Verizon-	Maryland	\$ 628,074,661	\$ 426,990,325	\$ 2,637,662,465

\*Note: This accounting has multiple variables as we decided to return to examine each state's potential estimated partial overcharging, but as it clear, the original analysis is within a rounding calculation—and the FCC's own supplied financial information has major anomalies between the different areas of the same report.

<http://irregulators.org/overchargedamerica/>

"Every state utility has been using the FCC accounting rules [which dump Corporate Operations expenses into state utility accounts] and that, on average, 72% of this expense was put into the Local Service category. We also note that **since 2007, this expense doubled** in Verizon New York and **we assume that this pattern happened in every state.**"

Table shows almost \$240,000 for Maryland in 2007 alone.

### AT&T, Verizon & CenturyLink Corporate Operations Expense, by State, 2007 Source: FCC ARMIS REPORTS

	Total	Local	Access	Local	Access
Verizon-California GTE	\$258,859	\$203,080	\$55,780	78%	22%
Verizon Florida LLC	\$162,990	\$122,508	\$40,482	75%	25%
Verizon-Maryland	\$239,740	\$173,268	\$66,472	72%	28%
Verizon- Massachusetts	\$326,090	\$216,948	\$109,142	67%	33%
Verizon New Jersey	\$425,805	\$303,828	\$121,977	71%	29%
Verizon New York Telephone	\$1,092,744	\$740,543	\$352,201	68%	32%
Verizon Pennsylvania	\$422,168	\$303,753	\$118,415	72%	28%
Verizon Washington D.C.	\$67,115	\$43,884	\$23,231	65%	35%
<b>Total Percentage</b>				<b>72%</b>	<b>28%</b>

<https://kushnickbruce.medium.com/cooked-books-verizon-nys-local-service-was-charged-1-8-24f2324d7eb5>

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