

**Before the
White House Environmental Justice Advisory Council
Washington, D.C.**

In the Matter of:)
Federal Disaster Preparedness, Relief and)
Community Resilience; Climate Resilience,) Docket ID No. EPA-HQ-OA-2022-0050
Beta Version of the Climate and Economic)
Justice Screening Tool (CEJST) and Justice40)
Initiative)

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

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submit these comments in response to the notice for public comments¹ relating to the above-captioned matters.

INTRODUCTION

In order to receive any federal benefits for disaster preparedness, a disadvantaged community must first be recognized. There is a large, diverse and growing community of individuals who suffer significant injuries from wireless radiation exposure from wireless base stations, cell towers, “small” cells, cell phones and other telecommunications infrastructure and devices placed right next to their homes, businesses, schools, medical facilities and other public locations. They have heretofore been largely ignored by federal agencies.

Many have symptoms from these injuries 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 from these injuries are “EMS disabled.”

Because wireless radiation is invisible, so, apparently, have been the sufferings of the EMS disabled. 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. Presenting these comments is an effort to make visible what has otherwise been invisible – the EMS disabled and their need for access to necessary and safe broadband, particularly during disaster emergencies.

Chair Brenda Mallory of the White House Council on Environmental Quality (CEQ) has stated that “The Climate and Economic Justice Screening Tool (CEJST or ‘Tool’) will 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.”² The EMS disabled have been “left out” and ignored. This presents an opportunity to rectify this omission.

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.”³ The project focuses on how Communities should be defined⁴ and what metrics the Environmental Protection Agency (EPA) should use to achieve the Initiative’s goals.

¹ Notice of virtual public meeting and request for public comments, Docket ID No. EPA-HQ-OA-2022-0050, <https://www.federalregister.gov/documents/2022/04/13/2022-07867/white-house-environmental-justice-advisory-council-notification-of-virtual-public-meeting>.

² <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/>.

³ <https://www.whitehouse.gov/omb/briefing-room/2021/07/20/the-path-to-achieving-justice40/>

⁴ 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.

Incorporating metrics for these Communities into the Tool would aid federal agencies to comply with the guidance issued under the Justice40 Initiative, that when agencies engage with stakeholders that “agencies consider their obligation ... pursuant to Section 504 of the Rehabilitation Act to take appropriate steps to ensure effective communication for individuals with disabilities.”⁵

In these comments, we will address conditions that the Justice40 Initiative is intending to address:

- Proposed methodology and metrics to identify the EMS disabled Communities
- And to Measure Cumulative Impact to these CommunitiesThe EMS disabled are disadvantaged communities;
- Energy consumption and (legacy) pollution from wireless infrastructure as adverse cumulative climate impacts on EMS disabled communities;
- Reducing climate change impacts on EMS disabled communities by adopting Tom Wheeler’s “fiber-first” policy: fiber-optics broadband is a necessity for EMS disabled Communities and the best solution to bridge the digital divide;
- Creation of community resiliency plans: The need to accommodate EMS disabled Communities, metrics, guidelines and disaster emergencies;
- Increased technical assistance and community engagement: Digital discrimination cannot be remedied without digital literacy; and
- The settled science on adverse health effects from wireless radiation: from industry, FCC, FDA, scientists and experts.

Proposed Methodology and Metrics to Identify the EMS Disabled Communities And to Measure Cumulative Impact to these Communities

Taking into account the EMS disabled Communities, a proposed methodology for the Tool is to include the following components and metrics to measure cumulative impact to these Communities, with respect to each geographical area in the U.S.:

- (1) the number of people who are EMS disabled, with an accompanying national registry (widely publicized to the public) to facilitate their ability to report their disabilities;
- (2) the locations of EMS disabled Communities;
- (3) the extent of accommodation for EMS disabled Communities;
- (4) the number of public institutions (e.g., schools, libraries, medical facilities, school buses) that have wireless-free zones to accommodate the EMS disabled;
- (5) the number of geographical areas (residential, business, etc.) that are solely wired to and through the premises (e.g., by fiber optics, cable or copper wire) to

⁵ Executive Office of the President, Office of Management and Budget, Washington, D.C. 20503, July 20, 2021, Interim Implementation Guidance for the Justice40 Initiative, Memorandum for the Heads of Departments and Agencies, by Shalanda D. Young, Acting Director, Office of Management and Budget, Brenda Mallory, Chair of the Council on Environmental Quality, Gina McCarthy, National Climate Advisor, at <https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf>.

- provide safe accommodations without the presence of wireless infrastructure either within or in close proximity to those areas;
- (6) the number and precise locations of wireless infrastructure (e.g., wireless base stations, cell towers, antennas and “small” cells);
 - (7) the number of feet between all homes, businesses, medical facilities, libraries, other public institutions and other structures, and wireless infrastructure;
 - (8) the cumulative radio frequency (RF) emissions from all wireless infrastructure, also known as electrosmog, in the environment;
 - (9) the cumulative RF emissions from all wireless infrastructure penetrating from the outside environment into homes, businesses, medical facilities, libraries, other public institutions and any other structures;
 - (10) the prospective level of additional RF emissions, or electrosmog, from proposed wireless infrastructure in the outside environment;
 - (11) the prospective level of additional emissions, or electrosmog, from all proposed wireless infrastructure that would be penetrating from the outside environment into homes, businesses, medical facilities, libraries, other public institutions and any other structures;
 - (12) the cumulative CO2 greenhouse gas emissions in the environment from wireless infrastructure;
 - (13) the amount of fiber optics deployed to and through the premises (FTTP), also referred to as fiber to the room (FTTR);
 - (14) the amount of fiber optics needed to be deployed to ensure that fiber reaches to and through the premises FTTP and FTTR; and
 - (15) the pricing and affordability of telecommunications services, capacity (symmetrical and asymmetrical upload and download speeds), scalability and adaptability, in each instance to meet the special needs of the Communities.

IMPORTANT NOTE: The FCC averages wireless emissions at exposure levels over a period of 30 minutes, which completely obscures the effects of the pulsating nature of RF emissions and does not account for 24/7 exposure by the population to RF emissions or its constant pulsations. To obtain a more accurate reading of wireless emissions, the maximum power density and peak power density levels per millisecond should be recorded, as adverse health effects arise from the peaking and pulsating nature of wireless emissions.⁶

⁶ Human-made electromagnetic fields: Ion forced-oscillation and voltage-gated ion channel dysfunction, oxidative stress and DNA damage (Review) (2021) Pangopolous DJ, et al. International Journal of Oncology. August 23, 2021. <https://pubmed.ncbi.nlm.nih.gov/34617575/>.

Computational modeling investigation of pulsed high peak power microwaves and the potential for traumatic brain injury. Sci Adv. 2021 Oct; 7(44). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8555891/>. "These studies reveal that the MAE threshold depends on the energy in a single pulse (not the average power density) for sufficiently short pulses [e.g., 32 μ s in (46)], and peak power densities of 102 to 105 mW/cm² have been known to cause auditory effects in human participants (45)."

“Diplomats' Mystery Illness and Pulsed Radiofrequency/Microwave Radiation,” Dr. Beatrice Golomb. Neural Comput. 2018 Nov; 30(11):2882-2985. <https://pubmed.ncbi.nlm.nih.gov/30183509/>; “Reported facts appear consistent with pulsed RF/MW as the source of injury in affected diplomats.”

The EMS Disabled are Disadvantaged Communities

How disadvantaged communities are defined is important and needs to be flexible and inclusive. The EMS Disabled 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.

These Communities have been largely ignored by federal agencies⁷ and left behind. Because wireless radiation is invisible, so, apparently, have been the sufferings of the EMS disabled. 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. Presenting these comments is an effort to make visible what has otherwise been invisible – the EMS disabled and their need for access to necessary and safe broadband.

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. The U. S. Access Board provided a designation of EMS disability going back to 2002.⁸ 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.⁹

“5G: Great risk for EU, U.S. and International Health! Compelling Evidence for Eight Distinct Types of Great Harm Caused by Electromagnetic Field (EMF) Exposures and the Mechanism that Causes Them,” Martin L. Pall, PhD, <https://peaceinspace.blogs.com/files/5g-emf-hazards--dr-martin-l.-pall--eu-emf2018-6-11us3.pdf>.

Belyaev, I., Dean, A., Eger, H. et al. "EUROPAEM EMF Guideline 2016 for the prevention, diagnosis, and treatment of EMF-related health problems and illnesses." *Rev environ Health*. 2016;31(3):363-397. Doi:10.1515/reveh-2016-0011.

B. W. G. (2012). "Bioinitiative Report 2012: A Rationale for Biologically-based Exposure Standards for Low-Intensity Electromagnetic Radiation."

⁷ Native Americans may also be 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.

⁸ U.S. Access Board, *Advancing Full Access & Inclusion for All*, “Indoor Environmental Quality Project,” <https://www.access-board.gov/research/building/indoor-environmental-quality/>.

⁹ “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>.

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),¹⁰ (b) in 2007 by the Canadian Human Rights Commission,¹¹ and (c) in 2009 by the European Parliament.¹² Courts have awarded disability claims to people with ES in Australia,¹³ France,¹⁴ Spain,¹⁵ United Kingdom,¹⁶ and United States.¹⁷

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.¹⁸ There are other sources showing the proliferation of EMF sensitivities and disabilities.¹⁹

A 2019 Bevington study,²⁰ 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:

Percentages	Number of U.S. EMF Sensitive/Disabled
Can't work – 0.65%	2.16 million

¹⁰ 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.

¹¹ Policy on Environmental Sensitivities, Canadian Human Rights Commission, 2007, Policy Reviewed 2014.

¹² Full recognition of electromagnetic hypersensitivity (EHS) in Europe, European Parliament, 2009.

¹³ 'Wi-fi allergies' issue flares up in Australia, iNews, <https://www.itnews.com.au/news/wi-fi-allergies-issue-flares-up-in-australia-356354>.

¹⁴ 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>.

¹⁵ 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/>.

¹⁶ Gadget 'allergy': French woman wins disability grant, August 27, 2013, BBC News, <https://www.bbc.com/news/technology-34075146>.

¹⁷ 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>.

¹⁸ U.S. Access Board – Advancing Full Access & Inclusion for All - “Indoor Environmental Quality Project,” <https://www.access-board.gov/research/building/indoor-environmental-quality/>.

¹⁹ 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=XiIsy3mcjY>; “The Bioinitiative Report,” <https://bioinitiative.org/>.

²⁰ "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>.

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 disabled 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.²¹

It was recently announced that the FCC is considering deploying Wi-Fi in school buses. No accommodation is being contemplated for EMS disabled children who will have no other safe school transportation alternative.²²

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.²³ 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 and home environments.

Energy Consumption and (Legacy) Pollution from Wireless Infrastructure as Adverse Cumulative Climate Impacts

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) or microwave radiation. “ElectroSmog refers to all man-made electromagnetic radiation created and present in our surrounding environment.”²⁴

²¹ 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/>.

²² “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/>.

²³ “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>.

²⁴ <http://www.emfrf.com/electrosmog/>.

The environmental footprint of wireless infrastructure contributes more to global warming than it does in preventing it.²⁵ Wireless is not so “green.”²⁶ As far back as 2013, it was predicted that the “wireless cloud” would produce “an increase in carbon footprint from 6 megatonnes of CO₂ in 2012 to up to 30 megatonnes of CO₂ 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 ...”²⁷ More recently, energy consumption for wireless infrastructure has been reported at ten times that of fiber (with 5G requiring 2 to 3.5 times the energy needed for 4G towers).²⁸ Energy consumption from 5G “is expected to increase 61x between 2020 to 2030 due to the energy demands of powerful network elements like massive MIMO²⁹ and edge servers [and] the proliferation of 5G cell sites ...”³⁰

By contrast, fiber optics has “[l]ower energy consumption, reduced waste and sustainable architecture, characteristics that make fiber infrastructure an environmentally advantageous choice.”³¹ “Fiber has a minimal ecological impact, reduces waste, consumes very little energy and helps decrease greenhouse gas emissions.”³²

In terms of pollution, even the telecommunications industry has referred to wireless RFR 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 ...”³³

Similar definitions for pollution are in the product protection plans for other telecommunications companies.³⁴

²⁵ <https://ehtrust.org/wp-content/uploads/5G-and-Climate-Change-Flyer-EHT.pdf>.

²⁶ 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>.

²⁷ <https://ehtrust.org/wp-content/uploads/5G-and-Climate-Change-Flyer-EHT.pdf>.

²⁸ <https://www.emfacts.com/2020/09/5g-base-stations-use-up-to-three-and-a-half-times-more-energy-than-4g-infrastructure/>.

²⁹ 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>.

³⁰ <https://ehtrust.org/report-5g-to-increase-energy-consumption-by-61-times/>.

³¹ <https://www.cablinginstall.com/cable/fiber/article/16465844/how-fiber-can-help-make-your-network-greener>

³² Fiber Optic Broadband, A Greener Internet Solution, <https://www.otelco.com/a-greener-internet-solution/>.

³³ <https://ehtrust.org/wp-content/uploads/device-protection-brochure-nationwide.pdf>;

³⁴ <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>.

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.^{35,36,37} Insurance companies, reviewing potential RFR injuries to the public from a risk analysis perspective, have assessed RFR as “high” risk by the insurance industry and is, therefore, excluded from coverage. The insurance industry 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) and FTTR are the superior choices for these Communities, for digital inclusion and environmental equity to bridge the digital divide.

**Reducing Climate Change Impacts on EMS Disabled Communities
by Adopting Tom Wheeler’s “Fiber-First” Policy:
Fiber Optics Broadband is a Necessity for EMS Disabled Communities and is
the Best Solution to Bridge the Digital Divide**

Remediation in reducing the adverse impacts on the EMS disabled requires digital inclusion and digital equity. *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 wireless 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 2021.³⁸ “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 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 ensuring digital equity and broadband inclusion is affordability, capacity and scalability to meet increasing user demands over the local network’s

³⁵ <https://5gtechnologynews.com/insurance-companies-can-refuse-claims-related-to-electromagnetic-radiation-illnesses/>

³⁶ <https://ehtrust.org/wp-content/uploads/Swiss-Re-SONAR-Publication-2019-excerpt-1.pdf>, pg. 29.

³⁷ <https://ehtrust.org/key-issues/reports-white-papers-insurance-industry>.

³⁸ 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.

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.³⁹ 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.

These Communities and 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), also referred to as fiber to the room (FTTR) 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.⁴⁰ 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.⁴¹ 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.”⁴²

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.

³⁹ “To Reduce Network Operating Expenses, Choose FTTH,” Masha Zager, July 2020,

<https://www.bbcmag.com/broadband-applications/to-reduce-network-operating-expenses-choose-ftth>.

⁴⁰ *Reinventing Wires*, National Institute for Science, Law and Public Policy (NISLAPP), authored by Timothy Schoechle, PhD, <https://electromagnetichealth.org/wp-content/uploads/2018/02/ReInventing-Wires-1-25-18.pdf>.

⁴¹ 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.

⁴² Id.

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.”⁴³

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,⁴⁴ 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.⁴⁵ 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.^{46 47} The Fiber Broadband Association (FBA) has shown that consumers prefer the symmetrical speeds that fiber provides.⁴⁸ As the largest fiber optics trade association in the U.S. states, “If it isn’t fiber, it isn’t broadband.”⁴⁹ The FBA also shows the superior technology of fiber in its white paper, “The Market Has Spoken.”⁵⁰

Fiber deployment has also been an economic boon to Hamilton County.⁵¹ 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 estate development and payments-in-lieu of

⁴³ “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>.

⁴⁴ <https://optics.fiberbroadband.org/Full-Article/reduce-network-operating-expenses-choose-ftth>.

⁴⁵ <https://bestneighborhood.org/tv-and-internet-hamilton-county-tn/>.

⁴⁶ <https://www.allconnect.com/blog/internet-speed-classifications-what-is-fast-internet>.

⁴⁷ <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2018-broadband-deployment-report>.

⁴⁸ https://www.broadbandworldnews.com/document.asp?doc_id=773546.

⁴⁹ <https://s3.amazonaws.com/files.fiberbroadband.org/download/3555.4237?AWSAccessKeyId=AKIAIZGD7FMLIYL BZNI&Expires=1650065068&Signature=CfFGHmOkZaAovAfuGmXXs2hDpKo%3D>.

⁵⁰ <https://www.fiberbroadband.org/p/cm/ld/fid=978>.

⁵¹ “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.

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’ ...”⁵²

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.⁵³

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.”⁵⁴

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.

⁵² In Kansas, Rural Chanute Built Its Own Gigabit Fiber and Wireless Network,” Christopher Mitchell 10-2-21, <https://ilsr.org/chanute-rural-gigabit/>.

⁵³ <https://www.soar-ky.org/prtc/>.

⁵⁴ “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>.

- 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.

Creation of Community Resiliency Plans: The Need to Accommodate EMS Disabled Communities, Metrics, Guidelines and Emergencies

The EMS disabled is a disadvantaged community that requires affirmance and accommodation. The Fair Housing Act (“FHA”)⁵⁵ and Americans with Disabilities Act (“ADA”)⁵⁶ 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://buildingbiologists.org/), an organization whose mission is to help create healthy homes, schools, and workplaces free of toxic hazards, including those posed by electromagnetic radiation.⁵⁷

⁵⁵ 42 U.S.C. §3601, et seq.

⁵⁶ 42 U.S.C. §12101, et seq.

⁵⁷ <https://buildingbiologists.org/>.

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.

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 a flexible zone, any wireless frequency within these institutions would require some form of wireless frequency attenuation (such as RF blocking, shielding or reduction device) over the wireless telecommunications equipment to significantly reduce 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.

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.

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.⁵⁸ The EMS disabled require access to services in such emergencies.

⁵⁸ “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>.

Increased Technical Assistance and Community Engagement: Digital discrimination cannot be remedied without digital literacy

Digital literacy requires educating the public, businesses, schools, states, municipalities about the importance 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;⁵⁹ (2) how to use ethernet cords, adaptors for every device in which to plug the ethernet cords;⁶⁰ (3) how to use a “Signal Tamer” or its equivalent, so as not to cause electromog 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.

The Settled Science on Adverse Health Effects of Wireless Radiation: From Industry, FCC, FDA, Scientists And Experts

Industry’s Settled Science:

As early as April 2000, the ECOLOG Institute, which was commissioned by T-Mobil in Germany (parent company to T-Mobile in the U.S.), issued a report on its study of the risks of electromagnetic fields (EMFs) because of the rapidly expanding mobile telecommunications industry. 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.⁶¹ The findings included risks of cancer (of the central nervous system and testicular cancer), leukemia, damage to the immune system and cognitive impairments. It found that for all stages of cancer development, power flux densities of less than 1 W/m² were

⁵⁹ 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>).

⁶⁰ “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=FFFdfAsTks8>).

⁶¹ 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>; ECOLOG is a research organization founded in 1991 by scientists from the University of Hannover.

sufficient. “For some stages of cancer development, intensities of 0.1 W/m² or even less may suffice to trigger effects.”⁶²

The ECOLOG Institute also addressed the issue of electrosensitivity. It emphasized 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 Institute also provided precautions for vulnerable populations in “residential areas, schools, nurseries, playgrounds, hospitals and all other places at which humans are present for longer than 4 hours.”⁶³

In an article, “Why Tech Leaders Don’t Let Their Kids Use Tech,”⁶⁴ it’s reported that technology executives restrict or forbid their children’s use of the very technology that they are providing to the public, including “the makers of smartphones and tablets, of social media channels and game boxes.” Technology “titans” such as former Apple’s Steve Jobs and Bill and Melinda Gates have admitted to placing restrictions on their children’s use of technology. Chris Anderson, former Wired magazine editor and CEO of 3D Robotics, said that his kids “accuse me and my wife of being fascists and overly concerned about tech, and they say that none of their friends have the same rules. That’s because we have seen the dangers of technology firsthand. I’ve seen it in myself, I don’t want to see that happen to my kids.”⁶⁵

Federal Communications Commission (FCC): 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. 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 by the population to RFR or its constant pulsations.

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:

⁶² Id.

⁶³ Id.

⁶⁴ “Why Tech Leaders Don’t Let Their Kids Use Tech,” <https://kidzu.co/health-wellbeing/why-tech-leaders-dont-let-their-kids-use-tech/>.

⁶⁵ Id.

- *“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 (<10C or no detectible 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).*

IMPORTANT NOTE: NTP refers to the National Toxicology Program. 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 in another study using exposures below the FCC thermal thresholds (simulating emissions from cellular base stations and wireless transmitters).

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 has become well established that wireless radiation exposure produces or has the recognized potential of producing biological effects.

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.⁶⁶ 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).* ⁶⁷

⁶⁶ https://www.iarc.who.int/wp-content/uploads/2018/07/pr208_E.pdf.

⁶⁷ <https://www.sciencedirect.com/science/article/abs/pii/S0013935118303475>.

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).”⁶⁸

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."***⁶⁹

4. In 2021, the U.S. D.C. Circuit Court of Appeals 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.⁷⁰

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 the 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, thousands of scientific studies of biological hazards from RFR and hundreds of personal accounts of injuries from RFR were in the FCC docket which the FCC ignored, and which the D.C. Circuit Court of Appeals admonished the FCC that it cannot ignore.

The ruling called into question the underlying basis for the FCC’s extremely high thermal-only “safety” threshold and ruled in favor of health and safety advocates who sued the FCC.

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

⁶⁸ <https://ehtrust.org/science/whoiaarc-position-on-wireless-and-health/>.

⁶⁹ <https://www.saferemr.com/2021/03/expert-report-by-former-us-government.html?m=1>.

⁷⁰ [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).

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.”⁷¹

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.”⁷²

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 legislation⁷³ 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 2020.⁷⁴

You can hear directly from grassroot communities 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 after the installation of a wireless cell tower near their homes, and from which they had to evacuate.⁷⁵ 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 health effects and injuries sustained by residents as a result of the cell tower.⁷⁶ There have been other reports of health effects from cell towers.⁷⁷

⁷¹ https://www.youtube.com/watch?v=zSx_yDzxvM8&t=2295s

⁷² <https://ehtrust.org/wp-content/uploads/American-Academy-of-Pediatrics-letter-to-the-FCC-July-12-2012.pdf>

⁷³ <https://legiscan.com/NH/text/HB522/2019>.

⁷⁴ <http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>.

⁷⁵ <https://ehtrust.org/statement-by-courtney-gilardi-after-pittsfield-board-of-health-votes-to-send-cess-and-desist-order-for-verizon-cell-tower/>.

⁷⁶ <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-cess-and-desist-order-against-verizon-cell-tower-to-be-sent-on-friday-by-by-board-of-health-pittsfield-ma/>.

⁷⁷ 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.

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. 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.”⁷⁸

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 2019.⁷⁹
- 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

⁷⁸ 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.

⁷⁹ <https://midsafetech.org/2019/02/13/no-research-on-5g-safety-senator-blumenthal-question-answered/>.

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 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.”⁸⁰

Conclusion

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.

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.”⁸¹ The EMS disabled Communities “have been left out and left behind for far too long.” Now with the Justice40 Initiative, this inequality for the EMS disabled can be rectified. It can serve a significant role by prioritizing fiber as the access method of choice, creating a cleaner

⁸⁰ <http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>.

⁸¹ <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/>.

environment with reductions in electrosmog, 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.

Respectfully submitted,

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