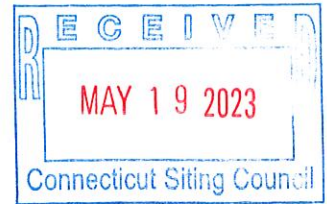


Connecticut for Responsible Technology of Brookfield  
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Registered Mail requested signature: RF 519 430 345 US



STATE OF CONNECTICUT SITING COUNCIL

Jurisdiction

Application of Homeland Towers, LLC and  
New Cingular Wireless PCS, LLC d/b/a AT&T

Docket # 512

May 8, 2023

ORIGINAL

**MOTION TO REOPEN THE EVIDENTIARY HEARING AND MODIFY THE  
DECISION DUE TO CHANGED CONDITIONS**

Pursuant to the CT General Statutes Section 4-181a(b), any individual may submit a motion to reopen any matter based on changed conditions at any time per your email dated March 3, 2023 to Paska Nayden. The inhabitants of the Connecticut town of Brookfield respectfully ask the Connecticut Siting Council to re-open an evidentiary hearing to allow the Citizens of Brookfield to address new evidence that was lacking at the initial evidentiary hearing and evidence that was submitted but not acknowledged. The Connecticut for Responsible Technology of Brookfield, herein “CT4RT Brookfield”, have discovered facts – unknown at

time of hearing of November 3, 2022 – concerning the location at 60 Vale Road, Brookfield, Connecticut to be hazardous relevant to the proposed tower that will jeopardize the safety of the people and property of Brookfield. The location issue is even more important in light of the potential safety implications posed by the numerous explosive train car incidents such as the recent disaster in Ohio (Exhibit A), the ethanol fire in Washington State (Exhibit A1) and cell towers on fire such as shown in (Exhibit B) in Brooklyn, New York, Hanover, Virginia, and Gaston County, North Carolina and more.

In addition, the question of a significant or substantial gap in cellular service is being challenged. The information provided on the docket appears to be based on a model. The data provided by our independent consultant shows the actual drive through site antenna access points. This data was submitted to the Council both prior to the November 3, 2022 hearing and afterwards, but prior to the final decision, but it seems that this data was not considered at either time.

**Background of the Telecommunications Act:**

1. RadioFrequency / Microwave (RF/MW) radiation, including maser, or “microwave amplification by stimulated emission of radiation”, of signal strength metered at and near the reported, publicly-accessible location in excess of -85 decibel-milliwatts, or dBm, for any frequency or channel band specified by a transmitting entity’s FCC transmission license, which must comply with all of the following:
  - (a) The Federal 1934 Communications Act (CA) requirement at 47 U.S.C. §324 ch.652, Title III, 48 Stat.109: “minimal amount of power necessary to carry out the communication”; (emphasis added)

- (b) The primary purpose of 47 U.S.C. §151, as reaffirmed in the 1996 Telecommunications Act (TCA) purpose at U.S.C. §332 (a)(1) Mobile Services, which is to “promote the safety of life and property”;
  - (c) TCA requirements, including the circumscribed preemptions at 47 U.S.C. §332 (c)(7)(A) and (c)(7)(B)(iv) omitting the “health effects” and “operations” of wireless facilities, so as to avert any preemption thereof, and preserving state and local officials’ authorities to promote health, safety, life and property; while acknowledging the actuality of “the environmental effects” of the radiation; stating positively, “Except as provided in this paragraph, nothing in this chapter shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities”;
  - (d) TCA’s preemption bounds, which apply solely to mobile phone calls made outdoors and not to internet data or any other wireless communication, rendering all other communications outside the bounds of said preemption; and rendering the states as holding full regulatory authority by way of zero extant preemption for all wireless transmissions that are not “personal wireless service facilities” as defined under TCA;
2. We have presented substantial written evidence for the Council to consider both prior to their decision and herein pursuant **47 U.S.C. Section 332(c)(7)(B), entitled “Limitations.”**
- i. **(ii)** A State or local government or instrumentality thereof shall act on any request for authorization to place, construct, or modify personal wireless

service facilities within a reasonable period of time after the request is duly filed with such government or instrumentality, taking into account the nature and scope of such request.

- ii. (iii) Any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.

Further confirmation by the U.S. District Court, E.D.N.Y., that “**if the Court find that even one reason given for the denial [of an applied-for wireless facility] is supported by substantial evidence, the decision of the local zoning body cannot be disturbed.**”

(emphasis added) (T-Mobile Ne LLC v. Town of Islip, 893 F. Supp. 2d 338, 355

E.D.N.Y 2012); and that an applicant-corporation must “first obtain. . . permission to use the streets,” meaning local control must likewise be supported by the State.

### **Findings and Areas Requiring Clarification**

3. We the Citizens of Brookfield have only recently learned that the cellular service gap analysis presented is a model and not an actual drive through, and that certain key facts, such as dropped calls, were not provided, or included in the analysis. **This represents a lack of evidence of any substantial gap in service since it is a widely accepted fact that models do not represent actual data.**
4. It has also come to our attention that two reports with notarized affidavits submitted prior to the evidentiary initial hearing and prior to the final decision were not taken into consideration, despite the notarized affidavits. Our understanding is that the consultant decided to make a public comment including her report, but because it was not presented as

an intervenor, the content could not be questioned at the hearing and therefore, the content of the reports were not added to the docket. The evidence provided by her analysis is still valid and open to interrogation with an expert witness and stands as powerful – if not more affirming as a sworn oath – testimony if presented at the evidentiary hearing. The report was not opinion but factual in that it demonstrated that there was no substantial gap in service, whereas the industry submission was only a model and not based on any actual field data from the locations in question. The Council could have reconvened a shorter hearing if they had questions, but they did not rebut the findings. A maxim of law is that an unrebutted affidavit stands as the truth. We ask in this hearing that these results be reviewed and considered as evidence that there is no substantial gap in service in the areas identified. The report also showed over 51% of the antennas scanned were emitting excessive power which has not been addressed by the Counsel. See Exhibit C which is attached hereto and fully incorporated herein.

**Location Issues Unknown at the Time of Hearing/Decision:**

5. The selected location is a hazardous site that warrants serious reconsideration. Containers and tanker train cars parked on railroad tracks indicate that the cars contain explosive or volatile substances, or both (Exhibit D). Placards indicating the substance of the tanker cars to be ethanol 1170 and isopropanol 1219 are present in the area daily. A fall zone of 54 feet is not an adequate distance from a cell tower that is 165 feet tall, and this will jeopardize the community and businesses in the area as well all the nearby areas, at least three of which would be subjected to the fumes and toxic chemical residues from an explosion; (Exhibit E); In order to determine the toxicity of the chemicals listed on the train cars, we

had to contact Greenfield who has information on the chemicals in question at the site and remarked that information on the raw product in the tanker train cars is not given to the public and we should request the information from the town officials at which time a call was placed to the Selectman also was told that the two products are highly flammable and directed him to the Greenfield web site for the SDS sheets and that the Ethanol in Tanker car is 200 Proof. The exhibit of the two MSDS sheets are from Greenfield web site that show the toxicity of the chemicals and the transportation placard numbers on the tanker train cars are the same as the SDS sheets. (Isopropanol 1219, Ethanol 1170)

6. The selected site is subject to an additional hazard from a backup generator which will be tested on a weekly basis. The hazard derives from the fact that the tanker train cars containing ethanol and isopropanol are parked on the railroad tracks 54 feet away. Where is the assurance that the generator testing will be manned to insure safety?
7. Electromagnetic pulse – EMP – hazardous conditions will arise near the highly flammable containers, leading to high risks for the community. This is similar to the potential for harm by using cell phones near gasoline pumps. Pulsed modulation microwave transmission is known to spike arbitrarily in any direction, and this presents primary dangers to the surrounding area as well as secondary consequences. Both an EMP and a transient electromagnetic disturbance, or TED, are brief bursts of electromagnetic energy. The origin of an EMP can be natural or artificial, and can occur as an electromagnetic field, as an electric field, as a magnetic field, or as a conducted electric current. The electromagnetic

interference caused by an EMP can disrupt communications and damage electronic equipment.

The short duration of an EMP means that its electromagnetic energy will be spread over a range of frequencies. Pulses are typically characterized by:

- The mode of energy transfer (radiated, electric, magnetic, or conducted)
- The range or spectrum of frequencies present
- Pulse waveform: shape, duration and amplitude (Exhibit F)

8. Brookfield's terrain is made up of rocky hillsides, valleys, and tree-covered mountains, and based on our analysis of driving in that area and using specialized equipment to access antennas, there is NO substantial gap in service there to justify another mega tower with 9 antennas, including millimeter "5G" antennas (Exhibit G). These antennas would be expanded to other providers, which could result in 36+ antennas because of the telecommunication companies' intention to "tower share" with multiple frequencies and wavelengths. Such "tower sharing" will only add to the negative effects of heterodyning. Heterodyning is a combination of waves with differing frequencies into a new frequency which is equal to the sum or the difference between the original frequencies. In other words, heterodyning compounds the deleterious effects of electromagnetic radiation. This will harm not only the Citizens of Brookfield in one location but others as well, since all antennas will be radiating electromagnetic energy from their various locations, some of which are less than 1 mile away. Adding more antennas in Brookfield in an attempt to overcome terrain so as to provide services to neighboring towns is not justifiable because of the massive extra microwave radiation pollution to which Citizens in and around

Brookfield would be subjected. The Antenna Search and Broadband Now websites confirm this.

9. The CT Siting database and PURA indicate substantial deployment in the area providing coverage. For example, according to AntennaSearch.com, Brookfield has access to on or about 33 towers and 142 antennas, with 99.8% of the Brookfield Citizens having access to broadband. According to the CT Siting Council database, between Brookfield, Bethel, Danbury, and new Fairfield, there are a total of 93 different structures erected for coverage based on the CT Siting Council database as of 1/19/23 (Exhibit H)
10. Due to the actual physical makeup of the town with its many hills, valleys, mountain sides, rock ledges, no number of additional microwave-emitting radiation pollution structures will give or can give 100% coverage in all areas. Will the provider give a guarantee backed by their indemnity bond to assure that service will improve, and if it does not, will they commit to removing all structures and return the property to as-is now condition?
11. This is 2023, not 1996, when we had few towers and antennas and did not have access to the thousands of peer-reviewed independent studies and recently released classified military radiofrequency studies dating back to the 1970s that clearly proved harmful and cumulative effects when combined with all the other towers and multitudes of frequencies – especially pulsed modulated microwave radiation. This research cannot be ignored or pushed aside based on some false premise that environment and health effects are to be ignored, especially in light of the fact that Brookfield has 99.8 percent broadband access (Exhibit I) We are not living in 1996, when we didn't have the



quantity, diversity of frequencies, densification, and proximity of towers and antennas getting closer and closer to our homes, offices, and shops.

12. There are no valid FCC guidelines as determined on August 13, 2021, in the case EHT et al vs FCC case (United States Court of Appeals for the District of Columbia Circuit). In this case, the FCC was remanded by the court because the FCC did not provide any scientific evidence or reasoned foundation to support their “guidance” standards what guidelines is CT Siting Council using? Specifically, the DC Circuit judges ruled the following in Case 20-1025:

“ . . . we grant the petitions in part and remand to the Commission to provide a reasoned explanation for its determination that its guidelines adequately protect against harmful effects of exposure to radio-frequency [microwave] radiation. It must, in particular,

- (i) provide a reasoned explanation for its decision to retain its testing procedures for determining whether cell phones and other portable electronic devices comply with its guidelines,
- (ii) address the impacts of RF radiation on children, the health implications of long-term exposure to RF radiation, the ubiquity of wireless devices, and other technological developments that have occurred since the Commission last updated its guidelines, and
- (iii) address the impacts of RF radiation on the environment.”

Wireless radio frequency microwave radiation is bioactive and is currently being insufficiently regulated. Therefore, each state or locality can regulate the maximum power output of microwave radiation from wireless infrastructure antennas that reaches any areas that are accessible to human beings and other living organisms, consistent with the 11,000+ pages of peer-reviewed, scientific evidence that Environmental Health Trust and Children’s Health Defense and others plaintiffs placed in the FCC’s public record:[Vol-1,Vol-2,Vol-3,Vol-4,Vol-5,Vol-6,Vol-7Vol-8,Vol-9,Vol-10,Vol-11,Vol-12,Vol-13,Vol-14,Vol-15,Vol-16,Vol-17,Vol-18,Vol-19,Vol-20,Vol-21,Vol-22,Vol-23,Vol-24,Vol-25,Vol-26andVol-27.](#)

13. In addition, according to the Federal Public Health Service Act Amendment of 1968

states at § 354: “Congress hereby declares that the public health and safety must be

protected from the dangers of electronic product radiation;" which means CT Siting Council and the applicant are violating Federal Public Health law. Exhibit J

14. The people of Brookfield want to preserve a safe and clean environment, free of electronic pollution, and any other harmful contaminants. (Global insurance companies will not insure telecom companies, as they consider RF radiation to be a "pollutant" and therefore a risk to people and all living things.

The following information as well as links to more than 70 scientific studies specifically on the effects of cell towers on people living near them, was emailed to the Council prior to their decision to approve the Vale Road tower. It was not acknowledged, nor did it appear to be considered in their decision-making process.

Studies on people who live near cell towers show numerous harmful biological effects from the exposure to electromagnetic frequencies in their homes. The Constitution guarantees us protection from intrusions in our homes. The building of a cell tower with multiple antennas, denies the people of their right to control the electromagnetic waves that enter their homes, their children's bedrooms and their private living space. They are stripped of their rights to safety in their homes.

The fact that the Siting Council is funded wholly by the industry and not by tax dollars, suggests a serious conflict of interest. It appears that the welfare of the residents of Brookfield is not being considered.

The information that was sent to the Council is a review of the literature, citing 71 studies and more, showing the effects of cell tower radiation on humans. It was published by Physicians for Safe Technology on Sept. 8, 1922, 3:53 PM. A link to this review of the literature was specifically sent by Joan Polzin to the Siting Council for their review, in

the time period permitted for public comment and email comment. The full report can be found at website <https://mdsafetech.org/?s=cell+tower+radiation+health+effects>

Quotes from the paper:

“Adverse Health Symptoms Near Cell Towers: The majority of published studies in different countries have shown a relationship between distance from base stations and a variety of physical complaints. They have found that the closer to the towers people live there is increase incidence of reported physical symptoms including those noted below. These are the same symptoms that military personnel working on radar have experienced, people who have microwave illness (AKA electrosensitivity) experience and also similar to what Cuban and Chinese Diplomats reported in unusual “attacks in 2017. See (Cuban Diplomats Likely Hit by Microwave Weapons -New York Times ) (Exhibit K and K1)

114 physicians in Germany petitioned their government to investigate Cell Towers for biological damages to humans living near them, as they were seeing a cluster of physical complaints observed in their patient population. See article below:

### **“German Physicians Call for Health investigation of Cell Towers in 2005**

Dr. Cornelia Waldmann-Selsam sent an [open letter in 2005](#) to the German State Chancellor, Edmund Stoiber on behalf of 114 physicians (Bamberg Appeal), asking for an investigation into the newly reported adverse health symptoms of 356 residents who lived near cell towers. She noted, “Many humans get sick from emissions far below the recommended limit values, which consider only thermal effects, and we have a sickness picture with characteristic symptom combinations, which are new to us physicians,” The list of symptoms were, “ Sleep disturbances, tiredness, concentration impairment, forgetfulness, problem with finding words, depressive tendencies, tinnitus, sudden loss of hearing, hearing loss, giddiness, nose bleeds, visual disturbances, frequent infections, sinusitis, joint and limb pains, nerve and soft tissue pains, feeling of numbness, heart rhythm disturbances, increased blood pressure , hormonal disturbances, night-time sweat, nausea.”

Residents noted almost immediate improvement when moving away.” Dr. Waldmann-Selsam goes on to say, “physicians were able to prove, by re-testing the patients, the normalization of blood pressure, heart rhythm, hormone disturbances, visual disturbances, neurological symptoms, blood picture,”. She called this an emergency medical situation and requested an official health investigation. Cell Tower Letter 2005 Dr. Cornelia Waldmann Selsam to German State Chancellery"

One further point, to quote the article, “Of special importance are the studies performed on animals or trees near base station antennas that cannot be aware of their proximity and to which psychosomatic effects can never be attributed.”

Exhibit K2: Independent Peer-Reviewed Scientific Studies on Bio-effects from Electromagnet Studies. Attachments include studies from 1974 sponsored by WHO, The US Department of Health, Education and Welfare, and Scientific Council to the Minister of Health and Social Welfare of Poland titled Biologic Effects and Health Hazards of Microwave Radiation that represents one of many documenting harmful effects of microwave radiation from wireless structures. Another study from that period of 1976 prepared by the U.S. Army Medical Intelligence and Information Agency Office of the Surgeon General as also made public titled Biological Effects of Electromagnetic Radiation (Radiowaves and microwaves) Eurasian Communist Countires (U) that documents substantial evidence of harmful effects that cannot be ignored in light today’s environment where 99.8% of our State has broadband coverage. For the sake of economy of paper and size of exhibit only a few pages are provided in the exhibit. Entire packages are on the internet for a quick search as well as can provide prior to the hearing for examination. Exhibit K3: Starter Bibliography with Clickable Links (Microwave, Bioeffects, 4G/5G, Cell Towers document substantial evidence being brought before the CT Siting Council members to read the summaries that represent substantial evidence as required by the TCA.

We ask that these issues be acknowledged by, addressed, and rebutted with

documentation by the Citing Council. If no reasonable response can be given, we will consider that our information is accepted as correct.

15. As of today, the FCC **has not complied** with the court ordered remand to provide evidence to support their alleged guidance by submitting documented research and details as they relate to children and environment as requested by the court.
16. Since the FCC has not complied with that court order, there is no valid guidance, and the Citizens of Brookfield demand to know what guidance/standards the CT Siting Council is using and what is the documented evidence to support such guidelines.
17. Brookfield has violations of the town's zoning as it pertains to placement in relation to other towers (Exhibit L). The Connecticut Constitution provides for local rule under Article 10. This is also expressed specifically in the Brookfield Charter, § C1-3 General grant of powers:

“In addition to all powers granted to towns under the Constitution and CT General Statutes, the Town shall have all powers specifically granted by this Charter and all powers fairly implied in or incident to the powers expressly granted, all powers conferred by CT General Statutes, as amended, and all other powers incident to the management of the property, government and affairs of the Town, including the power to enter into contracts with the United States or any federal agency, the State of Connecticut or any political instrumentality thereof for purposes not prohibited by law. The enumeration of particular powers in this and any other chapter shall not be construed as limiting this general grant of power but shall be considered as an addition thereto.” (Charter can be found at <https://ecode360.com/27198204>)

18. The Citizens of Brookfield do not consent to the tower and have specifically spoken out at multiple town meetings about the growing number of antennas and towers polluting them with microwave radiation (Exhibit M) and the testimony submitted by First Selectwoman Tara Carr opposing the tower, is filed on the docket (Exhibit N)
19. We the Citizens of Brookfield only recently realized there is no liability coverage for this tower or any of the other towers in our town. During the hearing, we want it to be determined the liability coverage and the parties who are liable for damages to the environment, people, insects, plant life, and animals? Is it the owner of the land who is receiving income, the Siting Council, and/or the installers/telecommunications companies polluting our air with microwave radiation or all parties? Neither the Lloyds of London nor Swiss RE insurance insure telecommunications companies such as AT&T, Verizon, T-Mobile, etc. This ultimately means the State of Connecticut or the Applicant(s) would be liable for any and all harmful effects to life and property. We require a bond to be established and made available to both the Town of Brookfield and People of Brookfield;
20. We the people of Brookfield only recently became aware that disclosure of monies paid to landowner and contract details made with land owner at 60 Vale Road site of the proposed tower are being hidden from public knowledge. The structure emits outside of the landowner's land boundaries dangerous levels of microwave radiation and the people have a right and CT Council and Town of Brookfield have a duty to disclose this information to the public. We the people want to know the contents of the protective order as noted in document requested by Attorney Lucia Chiochio on October 24, 2023 and approved by the CT Siting Council; (Exhibit O)


21. We the people of Brookfield only recently became aware that there is no monitoring for the EMF/EMR and power emissions – the electromagnetic frequency and electromagnetic radiation – of towers and antennas in our town. We are demanding, if this tower is approved, that Brookfield receive funding for the testing of the Brookfield ambient EMR/EMF levels prior to and after deployment by a disinterested 3<sup>rd</sup> party non-industry linked RF Engineer funded by landowner of 60 Vale Road, CT Siting Council, AT&T, and/or Homeland Towers as well the State of Connecticut. We require this be done before any structure is completed and with full public disclosure. The funding for regular monitoring should be monthly to ensure safety levels are maintained for public safety and environmental justice.

22. We the people of Brookfield want to activate the TCA provision of “operations” so that if we document peaks and higher than safe levels of emissions of power and microwave radiation emissions, we will require the firms to reduce and or disable operations of those antennas and or be subject to fines. After the 1<sup>st</sup> occurrence a warning to adjust the antennas will be given and if not addressed additional fines will be placed accordingly with additions actions to be taken. The limits will be established in Brookfield’s upcoming zoning changes to incorporate operations controlled by local municipality as provided by TCA. These operations have not been pre-empted according to the TCA’s Conference Report at H. R. Rep. No. 104-204, pt. 1, p. 94 (1995) 104-204, pt. 1, p. 94 (1995). This leaves the regulation of the operations of wireless facilities within state and local authorities and specifically cites “safety” as the regulatory criterion, while warning that any further attempted preemptions “should be terminated”.

We respectfully request a rehearing to address these points for the best interest of all the People of Brookfield.

Dated this day of May 10, 2023. All rights reserved without prejudice.

  
By: Joan R. Polzin, MSW, MFA

  
By: LINDA M. ARMENT LMA

X   
By: Jennifer Ramos - MAFED

Exhibits A: East Palestine, Ohio

Exhibit A1: BNSF Train /Derails in Washington State, Spilling Diesel Fuel

Exhibits B: Cell Phone Towers on Fire, Brooklyn, New York and other cities and states

Exhibit C: of Wilson Pro Antenna

Exhibit D: Pictures of Track and Tanks located across the street from Tower location planned at 60 Vale Road

Exhibit E: MSDS Reports on Ethyl Alcohol and Isopropyl Alcohol

Exhibit F: EMP Definition and Description



Exhibit G: Pictures of terrain taken of Brookfield

Exhibit H: Report and List of Broadband status and antennas/towers currently available to Brookfield

Exhibit I: Report from Broadband Now showing 99.8% coverage

Exhibit J: Federal Public Health Service Act of 1968

Exhibit K: Biological Effects of Tower Proximity

Exhibit K1: Cuban Diplomats Likely Hit by Microwave Weapons -New York Times can be found at link <https://mdsafetech.org/2018/09/04/cuban-diplomats-likely-hit-by-microwave-weapons-new-york-times-reports/>

Exhibit K2:

- A. Independent Peer-Reviewed Scientific Studies on Bio-effects from Electromagnet
- B. Biologic Effects and Health Hazards of Microwave Radiation (1974) and
- C. Biological Effects of Electromagnetic Radiation (Radiowaves and Microwaves) Eurasian Communist Countries (U) 1976

Exhibit K3: Starter Bibliography with Clickable Links (Microwave, Bioeffects, 4G/5G, Cell Towers

Exhibit L: Zoning

Exhibit M: Petition Opposing Tower

Exhibit N: Selectwoman Tara Carr Testimony

Exhibit O: Exhibit of Waiver

Exhibits A: East Palestine, Ohio



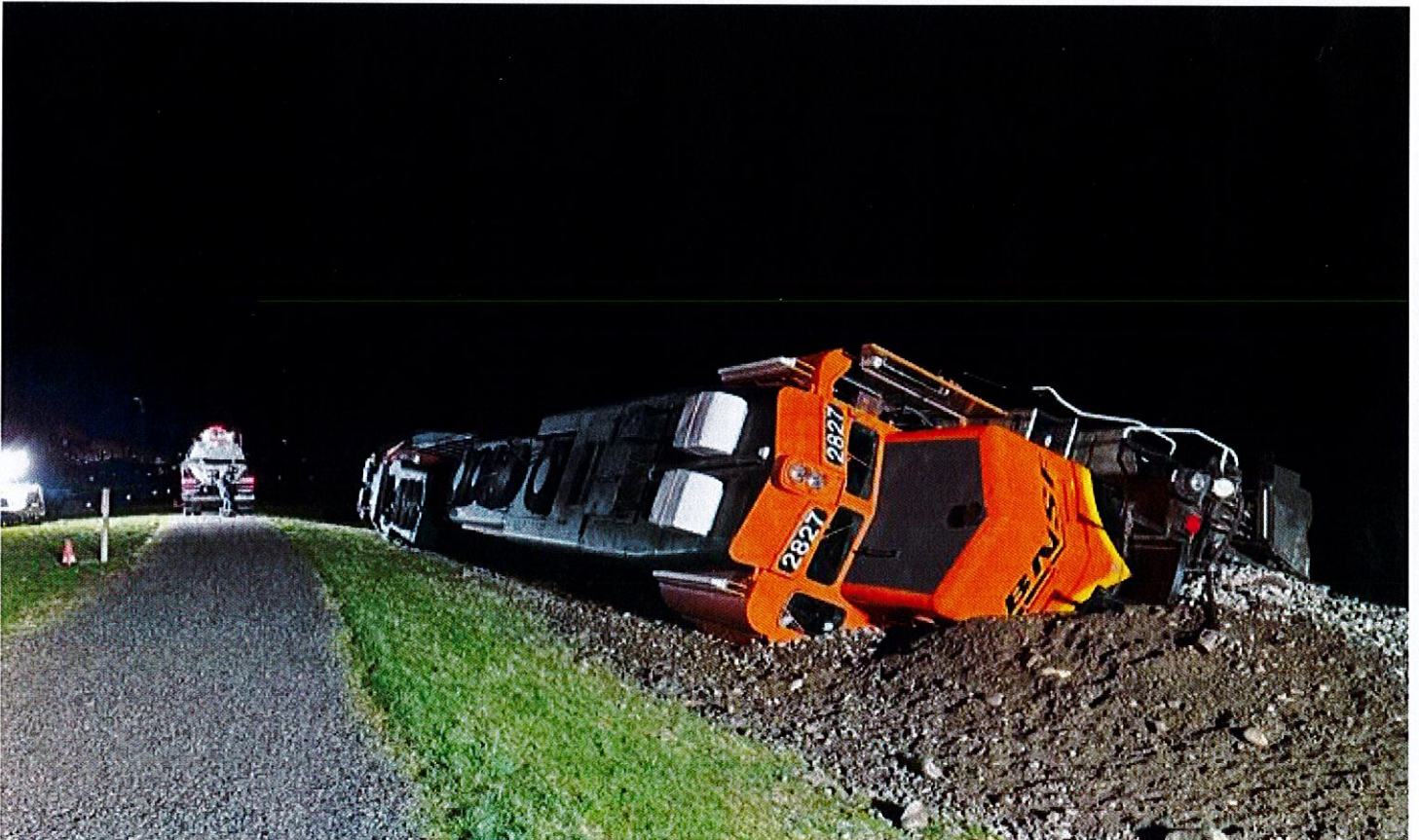
A black plume rises over East Palestine, Ohio, as a result of a controlled detonation of a portion of the derailed Norfolk Southern trains, on Feb. 6, 2023. (Gene J. Puskar/AP Photo)

#### RELATED TOPICS

[BNSF](#) [Train](#) [derail](#)

Exhibit A1: BNSF Train /Derails in Washington State, Spilling Diesel Fuel

# BNSF Train Derails in Washington State, Spilling Diesel Fuel



A derailed BNSF train on the Swinomish tribal reservation near Anacortes, Wash., on March 16, 2023. (Washington Department of Ecology via AP)



By [The Associated Press](#)

March 16, 2023 Updated: March 16, 2023



Print

ANACORTES, Wash.—Two BNSF trains derailed in separate incidents in Arizona and Washington state on Thursday, with the latter spilling diesel fuel on tribal land along Puget Sound.

No injuries were reported. It wasn't clear what caused either derailment.

The derailment in Washington occurred on a berm along Padilla Bay, on the Swinomish tribal reservation near Anacortes. Most of 5,000 gallons of spilled diesel fuel leaked on the land side of the berm rather than toward the water, according to the state Ecology Department.

Officials said there were no indications the spill reached the water or affected any wildlife.

Responders placed a boom along the shoreline as a precaution and removed the remaining fuel from two locomotives that derailed. Four tank cars remained upright.

The derailment in western Arizona, near the state's border with California and Nevada, involved a train carrying corn syrup. A spokeswoman for the Mohave County Sheriff's Office, Anita Mortensen, said that she was not aware of any spills or leaks.

BNSF spokeswoman Lena Kent said an estimated eight cars derailed in Arizona and were blocking the main track. The cause of the derailment was under investigation, and it was not immediately known when the track will reopen.

The derailments came amid heightened attention to rail safety nationwide following a fiery derailment last month in Ohio and a string of derailments since then that have been grabbing headlines, including ones in Michigan, Alabama and other states.

The U.S. averages about three train derailments per day, according to federal data, but relatively few create disasters.

Last month, a freight train carrying hazardous chemicals derailed in East Palestine, Ohio, near the Pennsylvania border, igniting a fire and causing hundreds of people to be evacuated.

Officials seeking to avoid an uncontrolled blast intentionally released and burned toxic vinyl chloride from five rail cars, sending flames and black smoke high into the sky. That left people questioning the potential health impacts even as authorities maintained they were doing their best to protect people.

Exhibits B: Cell Phone Towers on Fire, Brooklyn, New York and other cities and states



# Reduce Our Internet Footprint

## Cell Tower Fires    Collapses & Falling Debris

## Worker Deaths & Accidents

## Cell Site Safety Protocol

## Sample Letter to Legislators

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### TWO QUESTIONS

- 1) Did a professional engineer (PE) evaluate and certify any of these projects' safety before they went live?
- 2) Who carries liability for damages—the landowner, the telecom corporation and/or the municipality?

**THIS GALLERY SHOWS IMAGES of CELL TOWER FIRES & COLLAPSES  
for longer lists, click the links above... or go below the photo gallery**



*Cell tower collapses feet from homes  
and businesses due to high winds  
Las Vegas, NV, Apr. 25, 2022*

<https://www.fox5vegas.com/2022/04/25/cell-phone-tower-collapses-near-nellis-tropicana-crashing-down-feet-businesses-homes/>  
*Photo credit: Barclay Fernandez/FOX5*

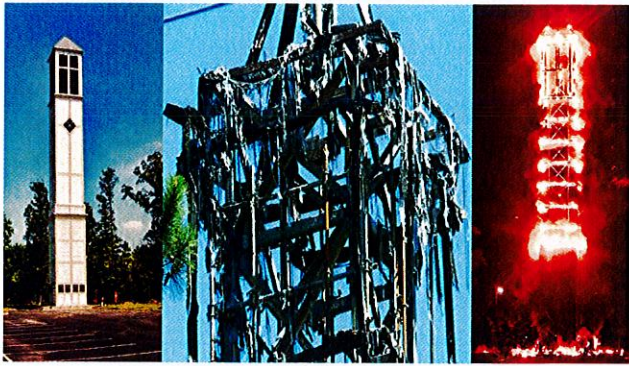


*A light pole holding cellular antennas  
at Otay Ranch High School caught fire,*

*damaging the stadium*

*Chula Vista, CA, March 9, 2021*

<https://fox5sandiego.com/news/local-news/stadium-light-catches-fire-at-south-bay-high-school/>



Cell phone tower fire  
caused by electrical/mechanical issues.  
Hanover, VA, June 26, 2020  
<https://www.nbc12.com/2020/06/26/cell-phone-tower-hanover-catches-fire/>  
Source: Hanover Fire and EMS

Source: fox5sandiego.com



Cell tower felled by tornado  
across U.S. Route 280.  
Smiths Station, Lee County, AL, March 3, 2019  
<https://www.nytimes.com/2019/03/03/us/tornado-alabama-georgia-deaths.html>  
Photo credit: Mike Haskey/Ledger-Enquirer, via Associated Press



Electrical malfunction causes fire  
with rooftop cellular antennas  
Brooklyn, NY, April 18, 2021  
<https://ehtrust.org/firecell-tower-brooklyn-new-york/>  
<https://anash.org/fire-extinguished-on-roof-of-crown-heights-apartment-building/>  
Photo credit: Berel Meyers/Anash.org



Paper lanterns caught in cell tower  
at Lantern Fest cause fire  
in Gaston County, NC, May 2, 2015  
<https://www.gastongazette.com/article/20150602/News/306029947>  
Source: Gaston Gazette



Tornado damages tower array  
Moore, OK, March 25, 2015  
<http://qrznow.com/tornado-damage-to->

*legendary-koma-tower-array/*

*Source: qrznow.com*



*Cell tower fire  
caused by improper welding  
near Heritage High School.*

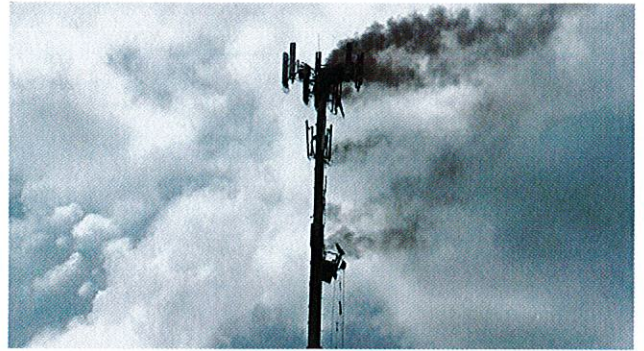
*Newport News, VA, Jun 16, 2015*

*<http://wtkr.com/2015/06/16/cell-phone-tower-near-heritage-high-school-catches-fire/>*

*Source: WTKR3*



*Cell tower fire  
caused by improper welding.  
Greenville, TN, Nov 4, 2014*



*Welding causes cell tower fire.*

*Sanford, FL, August 24, 2013*

*<https://insidetowers.com/sanford-florida-cell-tower-no-longer-a-risk/>*

*Source: insidetowers.com*



*Welding causes cell tower fire.*

*Bensalem, Pa, June 21, 2013*

*<http://levittownnow.com/2013/06/21/nearby-cell-tower-on-fire-may-collapse/>*

*Photo credit: Twitter.com/Mz\_Erica7801*



*Welding causes cell tower fire*

*near daycare center.*

*Lilburn, GA, Dec 1, 2011*

*<https://www.gwinnettdaily.com/archive/cell->*

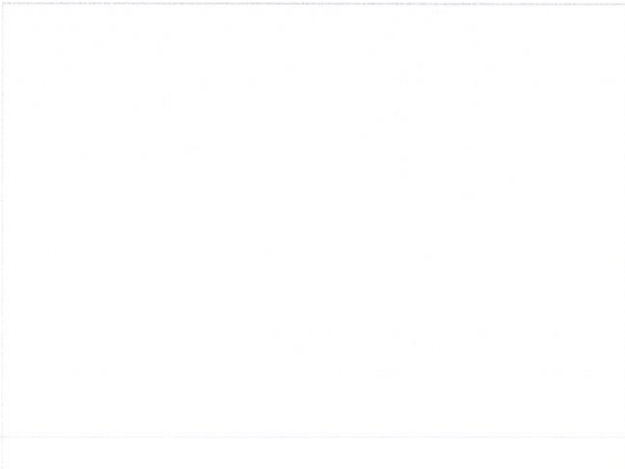
[https://www.greenevillesun.com/xml/nitf/flames-damage-verizon-wireless-tower/article\\_1619f00e-5383-530a-a69e-0dbd2acc3c6a.html](https://www.greenevillesun.com/xml/nitf/flames-damage-verizon-wireless-tower/article_1619f00e-5383-530a-a69e-0dbd2acc3c6a.html)

Photo credit: Kristen Buckles



Cell tower fire  
caused by improper welding.  
Bensalem, PA, June 21, 2013

<https://www.csmonitor.com/USA/Latest-News-Wires/2013/0624/Bensalem-tower-fire-Crews-dismantle-cell-tower-that-caught-fire-in-Pa>  
Photo credit: Jo Ciavaglia/Bucks County Courier Times/AP



Cell tower fire  
during routine maintenance.  
Tinton Falls, NJ, Jan 24, 2011  
<https://patch.com/new-jersey/longbranch/parkway-cell-tower-fire-saturday-set-off-by-routine-maintenance>  
Source: The Patch

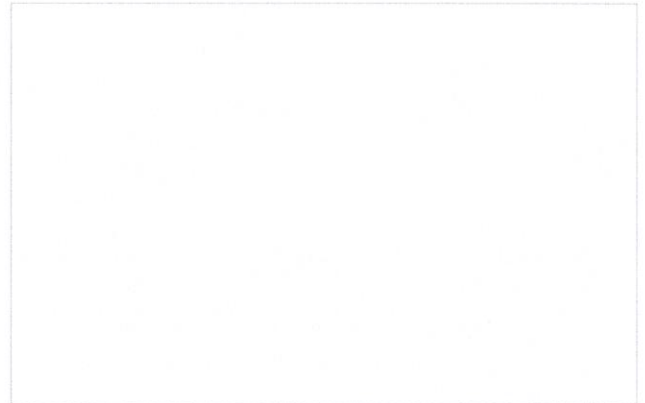
[tower-fire-closes-rockbridge-road-evacuates-day-care/article\\_c799bdd9-1162-52a6-8cd7-7784653883ae.html](https://www.greenevillesun.com/xml/nitf/flames-damage-verizon-wireless-tower/article_1619f00e-5383-530a-a69e-0dbd2acc3c6a.html)

Source: Gwinnett Daily Post



Cell tower collapses in high winds.  
Ruidoso, NM, Dec 18, 2009

[http://wirelessestimator.com/content/articles/?pagename=Cell\\_Tower\\_News\\_12.09](http://wirelessestimator.com/content/articles/?pagename=Cell_Tower_News_12.09)  
Photo credit: Steve Kitchens



Cell tower collapses during construction.  
La Mirada, March 18, 2008  
<https://www.oregister.com/2008/03/18/kfi-tower-topples/>  
Source: Orange County Register

Exhibit C: of Wilson Pro Antenna

**Paska Nayden**  
**P.O. Box 23**  
**Easton, Connecticut**

**Testimony of Truth in the form of AFFIDAVIT**

I attest and affirm that the following statements are true, accurate, and within my personal knowledge on this 21st day of December 2022;

- I, Paska Nayden, am a competent and capable adult over 18 years old, and I live in Easton, Connecticut;
- I am co-Founder of a grassroots not for profit unincorporated organization whose mission is to educate and assist on matters of technology such as wireless and smart meters to ensure responsible deployment with least harmful effects on life and property;
- I, Paska, was called upon to assist with understanding the Telecommunications Act and assist in determining if there was a substantial gap in service;
- As a researcher in residence after my own personal experience with RF/EMR damages combined with my technical experience as a systems engineer who has worked for a high tech company for over 30 years to research and operate new tools to assist with RF/EMR;
- After the initial public comment hearing on November 3, 2022, I was asked to survey additional areas.
- On the 17<sup>th</sup> day of November, 2022, I met with Joan Polzin of Brookfield who drove me to select locations to test and witnessed the testing of the additional sites;
- All the data was gathered then transmitted from the iPhone app to my computer as a CSV file for a combined list of 20 sites evaluated;
- The reports indicate no substantial gap in service however the report does show that 51.5% of the accessed antennas to be emitting excessive levels of power polluting Brookfield people and visitors with higher than acceptable levels unnecessary to complete a phone call or send a text according to the Telecommunications Act that dictates that the least amount of power be used;
- The Cellular Network Scanner is an advanced device that was purchased by myself to determine networks available:
  1. Offers multi-band scanning of 4,5, 12, 13, and 25 frequency bands Identifies individual carriers and towers
  2. Provides details on location, tower ID, distance to tower, and more
  3. Pinpoints active carriers and geo maps any active cells within range
  4. Captures all scan results; including time stamps for A/B comparisons Links via Bluetooth to iOS or Android with thee Cell LinQ by WilsonPro app
  5. Scans all carriers regardless of the carrier phone running the app
    - a. Reports detected LTE cell signal strength (RSRP) and Quality (RSRP for the 5 major cell bands: Band 4 (2.1Ghz), Band 5(850Mhz), Band 12 (Lower 700MHz), Band 12 (upper 700Mhz) and Band 25(1900Mhz)
    - b. Identifies all available signals from major cellular network service providers Verizon, T-Mobile, and AT& even if the connected Android or IOS device is not subscribed to those networks;

In summary every place of the target searching had sufficient wireless telecommunications services available.

See attached Recording of the Data from Cell LinQ, and WilsonPro product description.

Signed this 21<sup>st</sup> day December, 2022.



By: Paska Nayden©  
Easton, Connecticut  
CoFounder Connecticut for Responsible Technology©

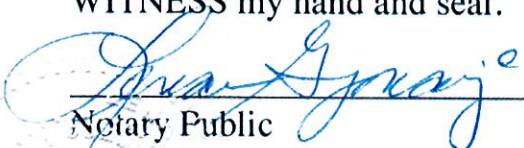
### NOTICE

Using a notary on this document does not constitute any adhesion, nor does it alter my status in any manner. The purpose for notary is verification and identification only and not for entrance into foreign jurisdiction.

### NOTARY PUBLIC'S JURAT

BEFORE ME, the undersigned authority, a Notary Public, of the county of Fairfield, Republic of Connecticut, this 21<sup>st</sup> day of December 2022 A.D., Paska of the family Nayden did appear and was identified by Passport ID, and who, upon first being duly sworn and/or affirmed, deposes and says that the foregoing asseveration is true to the best of her knowledge and belief.

WITNESS my hand and seal.

  
Notary Public

My Commission Expires On: \_\_\_\_\_

Lena Gjonaj  
Notary Public-Connecticut  
My Commission Expires  
December 31, 2024

**Paska Nayden**  
**P.O. Box 23**  
**Easton, Connecticut**

**Testimony of Truth in the form of AFFIDAVIT**

I attest and affirm that the following statements are true, accurate, and within my personal knowledge on this day of the 3rd day of November, 2022;

- My name is Paska Nayden. I am a competent and capable adult over 18 years old, and I live in Easton, Connecticut;
- I am co-Founder of a grassroots not for profit unincorporated organization whose mission is to educate and assist on matters of technology such as wireless and smart meters to ensure responsible deployment with least harmful effects on life and property;
- I, Paska, was called upon to assist with understanding the Telecommunications Act and how to assist with the gap of coverage understanding;
- On the 24<sup>th</sup> day of September 2022, I met with two other Brookfielders, Joan Polzin and Linda Gwen Arment who assisted me to select locations to test and witnessed the testing in several locations;
- On the same day, Rick Aiello who volunteers on our grassroots group but lives outside of Brookfield met us to witness the recording process as an additional witness;
- We drove to selected sites to use the WilsonPro Cellular Network Scanner;
- Using the WilsonPro device paired with the iPhone app called Cell LinQ, I took readings at the attached locations listed with the computer generated longitude and latitude indicated in the spreadsheet;
- Lena Gjonaj also present but not from Brookfield, made video records of the scanning events;
- On the 2<sup>nd</sup> day of October 2022, I made a separate trip to verify one of the locations and took an additional recording and a new site recording on the edge of Brookfield and Bethel which was recorded by Lena Gjonaj;
- On November 2, 2022, I made another reading with the WilsonPro in the Amazon Fresh Parking lot closer to Federal Road intersection;
- All the data was gathered then transmitted from the iPhone app to my computer as a CSV file;
- The only modification made to the format was to color code based on an easy-to-read report card scale to help us identify levels of service;
- The Cellular Network Scanner is an advanced device that was purchased by myself to determine networks available:
  1. Offers multi-band scanning of 4,5, 12, 13, and 25 frequency bands Identifies individual carriers and towers
  2. Provides details on location, tower ID, distance to tower, and more
  3. Pinpoints active carriers and geo maps any active cells within range
  4. Captures all scan results; including time stamps for A/B comparisons Links via Bluetooth to iOS or Android with thee Cell LinQ by WilsonPro app
  5. Scans all carriers regardless of the carrier phone running the app



- a. Reports detected LTE cell signal strength (RSRP) and Quality (RSRQ) for the 5 major cell bands: Band 4 (2.1Ghz), Band 5(850Mhz), Band 12 (Lower 700MHz), Band 12 (upper 700Mhz) and Band 25(1900Mhz)
- b. Identifies all available signals from major cellular network service providers Verizon, T-Mobile, and AT&T even if the connected Android or IOS device is not subscribed to those networks;

In summary every place of the target searching had sufficient wireless telecommunications services available.

See attached Map, Recording of the Data from Cell LinQ, and WilsonPro product description.

Signed this 3rd day of November 2022,

*by: Paska Nayden*

By: Paska Nayden  
Easton, Connecticut  
CoFounder Connecticut for Responsible Technology

**NOTICE**

Using a notary on this document does not constitute any adhesion, nor does it alter my status in any manner. The purpose for notary is verification and identification only and not for entrance into foreign jurisdiction.

**NOTARY PUBLIC'S JURAT**

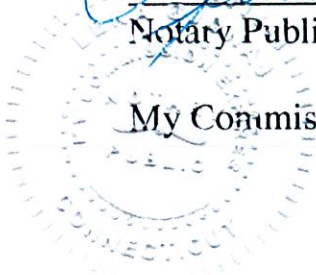
BEFORE ME, the undersigned authority, a Notary Public, of the county of Fairfield, Republic of Connecticut, this 3rd day of November 2022 A.D., Paska of the family Nayden did appear and was identified by Passport ID, and who, upon first being duly sworn and/or affirmed, deposes and says that the foregoing asseveration is true to the best of her knowledge and belief.

WITNESS my hand and seal.

*Lena Gjonaj*  
Notary Public

My Commission Expires On: \_\_\_\_\_

Lena Gjonaj  
Notary Public-Connecticut  
My Commission Expires  
December 31, 2024



## Town of Brookfield Antenna Scan Analysis

### Town of Brookfield - Antenna Scan Analysis

On 11/2/22 Consultant was asked to measure areas and on 11/17/22 we examined several additional areas using the WilsonPro Cellular Network Scanner to determine access to wireless telecommunication services from 20 different locations:

LEGEND			
Brookfield, CT Docket 512			
	Signal Strength	Interference	
Grade	RSSI (dBm)	RSRQ (dB)	Category
N/A	< -115	N/A	Poor
A	-90 to -115	0 to -5	Excellent
B	-80 to -89	-6 to -10	Good
C	-70 to -79	-11 to -15	Too much
D	-60 to -69	-16 to -20	Excessive
F	-60 or more	< -20	Excessive

## 1. No Significant GAP in Wireless Telecommunications Service based on measured RSSI (dBm) & RSRQ (dB)

- Upon review of the RSSI data, 51.5% of the accessed antennas scanned for cellular service are emitting excessive power.  
**Who is monitoring emissions of RF/EMR emission for Connecticut and in this case Brookfield?**
- The one area Stop and Shop parking lot due to its sight of line in one area of parking lot is limited but a few feet away from entrance of store has access. A slight remediation can be made not necessitating a mega tower that will house 36+ antennas or simply place inexpensive land line phone booths inside store and/or outside to have people make emergency calls but a walk 20 feet or drive up

RSSI (Received Signal Strength Indicator) is used when measuring the power of 3G/4G LTE/5G frequencies/modulations/interference -- see <https://wireamerica.org/radio-terms-unpacked>

From 20 locations we were able to access these unique numbered antennas:	AT&T	21
	T-Mobile	20
	Verizon	25

Location	Carrier	Technology	Band	DL Frequency	Bandwidth	RSSI (dBm)	RSRQ (dB)
Costco	AT&T Mobility	4G	25	1967.5	5	-77	-12
Costco	AT&T Mobility	4G	25	1967.5	5	-77	-14

Town of Brookfield Antenna Scan Analysis

Location	Carrier	Technology	Band	DL Frequency	Bandwidth	RSSI (dBm)	RSRQ (dB)
Costco	AT&T Mobility	4G	25	1935	10	-71	-9
65 Indian trail brookfield	AT&T Mobility	4G	25	1935	10	-69	-8
34 near Eva Road	AT&T Mobility	4G	25	1935	10	-68	-13
34 near Eva Road	AT&T Mobility	4G	25	1935	10	-68	-18
34 near Eva Road	AT&T Mobility	4G	25	1967.5	5	-73	-15
34 near Eva Road	AT&T Mobility	4G	25	1967.5	5	-73	-18
Costco	AT&T Mobility	4G	12	739	10	-65	-12
Public works off grays bridge road	AT&T Mobility	4G	12	739	10	-78	-15
72 grays bridge road across from public works	AT&T Mobility	4G	25	1967.5	5	-89	-10
72 grays bridge road across from public works	AT&T Mobility	4G	12	739	10	-74	-13
Grays bridge road 11/17/22	AT&T Mobility	4G	12	739	10	-74	-12
Parking lot Amazon fresh v2	AT&T Mobility	4G	25	1967.5	5	-86	-16
Parking lot Amazon fresh v2	AT&T Mobility	4G	12	739	10	-85	-11
5 Tead road 10/2/22	AT&T Mobility	4G	12	739	10	-64	-10
5 Tead road 10/2/22	AT&T Mobility	4G	12	739	10	-62	-12
34 near Eva Road	AT&T Mobility	4G	12	739	10	-62	-12
Amazon Fresh Parking Lot	AT&T Mobility	4G	25	1967.5	5	-86	-16
Amazon Fresh Parking Lot	AT&T Mobility	4G	12	739	10	-85	-11
Parklawn drive edge of bethel and brookfield	AT&T Mobility	4G	12	739	10	-62	-6
Parklawn drive edge of bethel and brookfield	AT&T Mobility	4G	25	1967.5	5	-83	-16
Parklawn drive edge of bethel and brookfield	AT&T Mobility	4G	25	1935	10	-80	-9
Parklawn drive edge of bethel and brookfield	AT&T Mobility	4G	25	1967.5	5	-84	-9
5 Tead road 10/2/22	AT&T Mobility	4G	25	1967.5	5	-84	-9
5 Tead road 10/2/22	AT&T Mobility	4G	25	1935	10	-80	-12
65 Indian trail brookfield	AT&T Mobility	4G	25	1967.5	5	-86	-8
65 Indian trail brookfield	AT&T Mobility	4G	25	1967.5	5	-85	-15
7 parkwood drive and Vale development	AT&T Mobility	4G	25	1967.5	5	-84	-15
7 parkwood drive and Vale development	AT&T Mobility	4G	25	1935	10	-80	-9
65 Indian trail brookfield	AT&T Mobility	4G	12	739	10	-48	-14
60 vale road	AT&T Mobility	4G	25	1967.5	5	-91	-19
60 vale road	AT&T Mobility	4G	25	1967.5	5	-91	-19
New school	AT&T Mobility	4G	12	739	10	-76	-12
New school	AT&T Mobility	4G	25	1967.5	5	-76	-12
New school	AT&T Mobility	4G	25	1967.5	5	-93	-10
New school	AT&T Mobility	4G	25	1935	10	-85	-14
New school	AT&T Mobility	4G	25	1935	10	-85	-14
New school	AT&T Mobility	4G	25	1935	10	-85	-15
New school	AT&T Mobility	4G	12	739	10	-77	-15
34 near Eva Road	AT&T Mobility	4G	12	739	10	-77	-15
34 near Eva Road	T-Mobile	4G	25	1957.5	15	-69	-17

Town of Brookfield Antenna Scan Analysis

Location	Carrier	Technology	Band	DL Frequency	Bandwidth	RSSI (dBm)	RSRQ (dB)
Best Buy parking lot	T-Mobile	4G	12	731.5	5	-83	-11
Federal road south of 84 exit across from vitamin shoppe	T-Mobile	4G	12	731.5	5	-96	-13
Kohl parking lot	T-Mobile	4G	25	1957.5	15	-83	-11
Kohl parking lot	T-Mobile	4G	25	1957.5	15	-83	-14
Kohl parking lot	T-Mobile	4G	4	2140	20	-82	-10
Kohl parking lot	T-Mobile	4G	4	2140	20	-83	-13
Kohl parking lot	T-Mobile	4G	12	731.5	5	-89	-10
Kohl parking lot	T-Mobile	4G	12	731.5	5	-88	-15
Bjs club off federal road	T-Mobile	4G	12	731.5	5	-92	-11
Federal road outside of shop right	T-Mobile	4G	12	731.5	5	-88	-8
Stop and shop[1]	T-Mobile	4G	12	731.5	5	-97	-12
Federal road outside of shop right	T-Mobile	4G	12	731.5	5	-88	-8
7 parkwood drive and Vale development	T-Mobile	4G	4	2140	20	-69	-4
34 near Eva Road	T-Mobile	4G	25	1957.5	15	-68	-12
Best Buy parking lot	T-Mobile	4G	25	1957.5	15	-67	-8
34 near Eva Road	T-Mobile	4G	12	731.5	5	-66	-8
AmazonFresh Parking Lot	T-Mobile	4G	12	731.5	5	-66	-11
Best Buy parking lot	T-Mobile	4G	4	2140	20	-64	-6
Parking lot Amazon fresh v2	T-Mobile	4G	25	1957.5	15	-60	-5
AmazonFresh Parking Lot	T-Mobile	4G	25	1957.5	15	-60	-5
Grays bridge road 11/17/22	T-Mobile	4G	12	731.5	5	-58	-9
Costco	T-Mobile	4G	25	1957.5	15	-57	-10
Parking lot Amazon fresh v2	T-Mobile	4G	4	2140	20	-57	-10
Parklawn drive edge of bethel and brookfield	T-Mobile	4G	25	1950	20	-81	-14
Parklawn drive edge of bethel and brookfield	T-Mobile	4G	25	1950	20	-81	-14
Parklawn drive edge of bethel and brookfield	T-Mobile	4G	4	2140	20	-80	-8
AmazonFresh Parking Lot	T-Mobile	4G	4	2140	20	-57	-10
Parking lot Amazon fresh v2	T-Mobile	4G	-17	2322.5	25	-54	-15
5 Tead road 10/2/22	T-Mobile	4G	4	2140	20	-79	-5
65 Indian trail brookfield	T-Mobile	4G	12	731.5	5	-54	-8
Costco	T-Mobile	4G	12	731.5	5	-53	-10
72 grays bridge road across from public works	T-Mobile	4G	12	731.5	5	-53	-10
7 parkwood drive and Vale development	T-Mobile	4G	12	731.5	5	-53	-11
7 parkwood drive and Vale development	T-Mobile	4G	12	731.5	5	-52	-8

### Town of Brookfield Antenna Scan Analysis

Location	Carrier	Technology	Band	DL Frequency	Bandwidth	RSSI (dBm)	RSRQ (dB)
Public works off grays bridge road	T-Mobile	4G	12	731.5	5	-50	-7
60 vale road	T-Mobile	4G	25	1950	20	-47	-9
60 vale road	T-Mobile	4G	12	731.5	5	-45	-10
New school	T-Mobile	4G	25	1950	20	-84	-11
New school	T-Mobile	4G	25	1950	20	-84	-13
New school	T-Mobile	4G	4	2140	20	-82	-9
New school	T-Mobile	4G	12	731.5	5	-76	-11
Parking lot Amazon fresh v2	Verizon Wireless	4G	5	874	10	-69	-15
Best Buy parking lot	Verizon Wireless	4G	4	2120	20	-85	-9
AmazonFresh Parking Lot	Verizon Wireless	4G	5	874	10	-69	-15
Federal road south of 84 exit across from vitamin shoppe	Verizon Wireless	4G	25	1980	20	-74	-9
Kohl parking lot	Verizon Wireless	4G	4	2120	20	-83	-10
Bjs club off federal road	Verizon Wireless	4G	4	2120	20	-84	-11
Federal road outside of shop right	Verizon Wireless	4G	4	2120	20	-92	-8
Federal road outside of shop right	Verizon Wireless	4G	25	1980	20	-89	-13
Federal road outside of shop right	Verizon Wireless	4G	4	2120	20	-92	-8
Federal road outside of shop right	Verizon Wireless	4G	25	1980	20	-89	-13
Federal road outside of shop right	Verizon Wireless	4G	4	2120	20	-92	-8
Costco	Verizon Wireless	4G	25	1980	20	-68	-11
Costco	Verizon Wireless	4G	4	2120	20	-68	-11
Grays bridge road 11/17/22	Verizon Wireless	4G	13	751	10	-68	-12
34 near Eva Road	Verizon Wireless	4G	5	874	10	-67	-16
Parlawn drive edge of bethel and brookfield	Verizon Wireless	4G	5	874	10	-67	-16
Public works off grays bridge road	Verizon Wireless	4G	5	874	10	-67	-9
34 near Eva Road	Verizon Wireless	4G	4	2120	20	-66	-6
34 near Eva Road	Verizon Wireless	4G	25	1980	20	-71	-16
34 near Eva Road	Verizon Wireless	4G	25	1980	20	-71	-16
34 near Eva Road	Verizon Wireless	4G	25	1980	20	-71	-16
34 near Eva Road	Verizon Wireless	4G	4	2120	20	-71	-10
34 near Eva Road	Verizon Wireless	4G	4	2120	20	-72	-12
34 near Eva Road	Verizon Wireless	4G	4	2120	20	-71	-19
Costco	Verizon Wireless	4G	5	874	10	-65	-11
Public works off grays bridge road	Verizon Wireless	4G	25	1980	20	-84	-15
Parking lot Amazon fresh v2	Verizon Wireless	4G	13	751	10	-65	-9
Public works off grays bridge road	Verizon Wireless	4G	5	874	10	-75	-16
AmazonFresh Parking Lot	Verizon Wireless	4G	13	751	10	-65	-9
72 grays bridge road across from public works	Verizon Wireless	4G	13	751	10	-73	-13

## Town of Brookfield Antenna Scan Analysis

Location	Carrier	Technology	Band	DL Frequency	Bandwidth	RSSI (dBm)	RSRQ (dB)
72 grays bridge road across from public works	Verizon Wireless	4G	13	751	10	-73	-15
72 grays bridge road across from public works	Verizon Wireless	4G	25	1980	20	-83	-13
72 grays bridge road across from public works	Verizon Wireless	4G	4	2120	20	-75	-7
72 grays bridge road across from public works	Verizon Wireless	4G	5	874	10	-77	-14
65 Indian trail brookfield	Verizon Wireless	4G	13	751	10	-65	-11
Grays bridge road 11/17/22	Verizon Wireless	4G	25	1980	20	-83	-14
Grays bridge road 11/17/22	Verizon Wireless	4G	25	1980	20	-82	-16
7 parkwood drive and Vale development	Verizon Wireless	4G	13	751	10	-64	-11
Parking lot Amazon fresh v2	Verizon Wireless	4G	25	1980	20	-63	-6
AmazonFresh Parking Lot	Verizon Wireless	4G	25	1980	20	-63	-6
34 near Eva Road	Verizon Wireless	4G	13	751	10	-62	-16
34 near Eva Road	Verizon Wireless	4G	13	751	10	-62	-17
Federal road south of 84 exit across from vitamin shoppe	Verizon Wireless	4G	4	2120	20	-61	-9
Parklawn drive edge of bethel and brookfield	Verizon Wireless	4G	13	751	10	-61	-11
Parklawn drive edge of bethel and brookfield	Verizon Wireless	4G	25	1980	20	-74	-11
Parklawn drive edge of bethel and brookfield	Verizon Wireless	4G	4	2120	20	-72	-9
Parklawn drive edge of bethel and brookfield	Verizon Wireless	4G	4	2120	20	-54	-9
Parking lot Amazon fresh v2	Verizon Wireless	4G	4	2120	20	-54	-9
5 Tead road 10/2/22	Verizon Wireless	4G	13	751	10	-72	-10
5 Tead road 10/2/22	Verizon Wireless	4G	25	1980	20	-84	-9
5 Tead road 10/2/22	Verizon Wireless	4G	4	2120	20	-79	-12
5 Tead road 10/2/22	Verizon Wireless	4G	4	2120	20	-79	-12
5 Tead road 10/2/22	Verizon Wireless	4G	5	874	10	-81	-8
AmazonFresh Parking Lot	Verizon Wireless	4G	4	2120	20	-54	-9
65 Indian trail brookfield	Verizon Wireless	4G	25	1980	20	-84	-12
65 Indian trail brookfield	Verizon Wireless	4G	4	2120	20	-77	-15
65 Indian trail brookfield	Verizon Wireless	4G	4	2120	20	-77	-15
7 parkwood drive and Vale development	Verizon Wireless	4G	5	874	10	-85	-9
7 parkwood drive and Vale development	Verizon Wireless	4G	25	1980	20	-77	-6
7 parkwood drive and Vale development	Verizon Wireless	4G	4	2120	20	-74	-8
7 parkwood drive and Vale development	Verizon Wireless	4G	4	2120	20	-75	-8
7 parkwood drive and Vale development	Verizon Wireless	4G	4	2120	20	-75	-13
60 vale road	Verizon Wireless	4G	5	874	10	-74	-7
60 vale road	Verizon Wireless	4G	13	751	10	-76	-15
60 vale road	Verizon Wireless	4G	25	1980	20	-82	-8
60 vale road	Verizon Wireless	4G	4	2120	20	-76	-9
60 vale road	Verizon Wireless	4G	4	2120	20	-76	-9
New school	Verizon Wireless	4G	4	2120	20	-76	-12
New school	Verizon Wireless	4G	13	751	10	-73	-12

### Town of Brookfield Antenna Scan Analysis

Location	Carrier	Technology	Band	DL Frequency	Bandwidth	RSSI (dBm)	RSRQ (dB)
New school	Verizon Wireless	4G	25	1980	20	-86	-13
New school	Verizon Wireless	4G	4	2120	20	-86	-11
New school	Verizon Wireless	4G	5	874	10	-87	-14

# Town of Brookfield Antenna Scan Analysis

## Town of Brookfield

On 11/17/22 Consultant was asked to measure areas and on 11/17/22 we examined several additional areas using the WilsonPro Cellular Network Scanner to determine access to wireless telecommunication services from 20 different locations:

LEGEND			
Brookfield, CT Docket 512			
	Signal Strength	Interference	
Grade	RSSI (dbm)	RSRQ (dB)	Category
N/A	< -115	N/A	Poor
A	-90 to -115	0 to -5	Excellent
B	-80 to -89	-6 to -10	Good
C	-70 to -79	-11 to -15	Too much
D	-60 to -69	-16 to -20	Excessive
F	-60 or more	< -20	Excessive

Location	Carrier	Modulation-ID	Carrier-ID-1	Carrier-ID-2	WTF-ID	Antenna-ID
Costco	AT&T Mobility	310	410	1538	352	13344180
Costco	AT&T Mobility	310	410	1538	102	13024434



Town of Brookfield Antenna Scan Analysis

Location	Carrier	Modulation-ID	Carrier-ID-1	Carrier-ID-2	WTF-ID	Antenna-ID
Costco	AT&T Mobility	310	410	1538	475	13344010
65 Indian trail brookfield	AT&T Mobility	310	410	1538	416	13462026
34 near Eva Road	AT&T Mobility	310	410	1538	37	14099208
34 near Eva Road	AT&T Mobility	310	410	1538	407	14099209
34 near Eva Road	AT&T Mobility	310	410	1538	18	14098866
Costco	AT&T Mobility	310	410	1538	404	13359539
Public works off grays bridge road	AT&T Mobility	310	410	1538	98	13344017
72 grays bridge road across from public works	AT&T Mobility	310	410	1538	252	14098703
72 grays bridge road across from public works	AT&T Mobility	310	410	1538	18	14098866
Grays bridge road across from public works	AT&T Mobility	310	410	1538	252	14098703
Parking lot Amazon fresh v2	AT&T Mobility	310	410	1538	414	13352207
Parking lot Amazon fresh v2	AT&T Mobility	310	410	1538	421	13352370
5 Tead road 10/2/22	AT&T Mobility	310	410	1538	414	13352207
5 Tead road 10/2/22	AT&T Mobility	310	410	1538	157	13462032
34 near Eva Road	AT&T Mobility	310	410	1538	252	14098703
AmazonFresh Parking Lot	AT&T Mobility	310	410	1538	252	14098703
AmazonFresh Parking Lot	AT&T Mobility	310	410	1538	421	13352370
Parklawn drive edge of bethel and brookfield	AT&T Mobility	310	410	1538	414	13352207
Parklawn drive edge of bethel and brookfield	AT&T Mobility	310	410	1538	414	13352207
Parklawn drive edge of bethel and brookfield	AT&T Mobility	310	410	1538	438	14125071
Parklawn drive edge of bethel and brookfield	AT&T Mobility	310	410	1538	102	13024434
5 Tead road 10/2/22	AT&T Mobility	310	410	1538	489	13024264
5 Tead road 10/2/22	AT&T Mobility	310	410	1538	472	13462195
5 Tead road 10/2/22	AT&T Mobility	310	410	1538	430	13462025
65 Indian trail brookfield	AT&T Mobility	310	410	1538	363	13313715
65 Indian trail brookfield	AT&T Mobility	310	410	1538	472	13462195
7 parkwood drive and Vale development	AT&T Mobility	310	410	1538	472	13462195
7 parkwood drive and Vale development	AT&T Mobility	310	410	1538	430	13462025
65 Indian trail brookfield	AT&T Mobility	310	410	1538	101	13462033
60 vale road	AT&T Mobility	310	410	1538	472	13462195
60 vale road	AT&T Mobility	310	410	1538	472	13462195
New school	AT&T Mobility	310	410	1538	157	13462032
New school	AT&T Mobility	310	410	1538	352	13344180
New school	AT&T Mobility	310	410	1538	475	13344010
New school	AT&T Mobility	310	410	1538	202	13391880
New school	AT&T Mobility	310	410	1538	381	13391887
34 near Eva Road	T-Mobile	310	260	20735	163	12353799

## Town of Brookfield Antenna Scan Analysis

Location	Carrier	Modulation-ID	Carrier-ID-1	Carrier-ID-2	WTF-ID	Antenna-ID
Best Buy parking lot	T-Mobile	310	260	20735	195	228440837
Federal road south of 84 exit across from vitamin shoppe	T-Mobile	310	260	20734	383	12007686
Kohl parking lot	T-Mobile	310	260	20734	172	12007687
Kohl parking lot	T-Mobile	310	260	20734	383	12007689
Kohl parking lot	T-Mobile	310	260	20734	383	12007683
Kohl parking lot	T-Mobile	310	260	20734	172	12007681
Kohl parking lot	T-Mobile	310	260	20734	172	12007684
Kohl parking lot	T-Mobile	310	260	20734	383	12007686
Bjs club off federal road	T-Mobile	310	260	20734	172	12007684
Federal road outside of shop right	T-Mobile	310	260	20734	172	12007684
Stop and shop[1]	T-Mobile	310	260	20734	172	12007684
Federal road outside of shop right	T-Mobile	310	260	20734	172	12007684
7 parkwood drive and Vale development	T-Mobile	310	260	20734	105	12007682
34 near Eva Road	T-Mobile	310	260	20734	172	12007687
Best Buy parking lot	T-Mobile	310	260	20735	195	12353800
34 near Eva Road	T-Mobile	310	260	20734	172	12007684
AmazonFresh Parking Lot	T-Mobile	310	260	20734	383	12007686
Best Buy parking lot	T-Mobile	310	260	20735	195	12353794
Parking lot Amazon fresh v2	T-Mobile	310	260	20734	383	12007689
AmazonFresh Parking Lot	T-Mobile	310	260	20734	383	12007689
Grays bridge road 11/17/22	T-Mobile	310	260	20734	172	12007684
Costco	T-Mobile	310	260	20734	172	12007687
Parking lot Amazon fresh v2	T-Mobile	310	260	20734	383	12007683
Parklawn drive edge of bethel and brookfield	T-Mobile	310	260	20735	261	13172743
Parklawn drive edge of bethel and brookfield	T-Mobile	310	260	20734	290	12394247
Parklawn drive edge of bethel and brookfield	T-Mobile	310	260	20734	93	12865793
AmazonFresh Parking Lot	T-Mobile	310	260	20734	383	12007683
Parking lot Amazon fresh v2	T-Mobile	310	260	20734	383	12007677
5 Tead road 10/2/22	T-Mobile	310	260	20734	105	12007682
65 Indian trail brookfield	T-Mobile	310	260	20734	209	12647942
Costco	T-Mobile	310	260	20734	172	12007684
72 grays bridge road across from public works	T-Mobile	310	260	20734	172	12007684
7 parkwood drive and Vale development	T-Mobile	310	260	20734	172	12007684
7 parkwood drive and Vale development	T-Mobile	310	260	20734	105	12007685

Town of Brookfield Antenna Scan Analysis

Location	Carrier	Modulation-ID	Carrier-ID-1	Carrier-ID-2	WTF-ID	Antenna-ID
Public works off grays bridge road	T-Mobile	310	260	20734	172	12007684
60 vale road	T-Mobile	310	260	20734	172	12007687
60 vale road	T-Mobile	310	260	20734	172	12007684
New school	T-Mobile	310	260	20734	172	12007687
New school	T-Mobile	310	260	20734	352	12008199
New school	T-Mobile	310	260	20734	34	12008193
New school	T-Mobile	310	260	20734	481	37457412
Parking lot Amazon fresh v2	Verizon Wireless	311	480	16643	273	16715024
Best Buy parking lot	Verizon Wireless	311	480	16643	75	16797718
AmazonFresh Parking Lot	Verizon Wireless	311	480	16643	273	16715024
Federal road south of 84 exit across from vitamin shoppe	Verizon Wireless	311	480	16643	309	16782606
Kohl parking lot	Verizon Wireless	311	480	16643	309	16782604
Bjs club off federal road	Verizon Wireless	311	480	16643	309	16782604
Federal road outside of shop right	Verizon Wireless	311	480	16643	309	16782604
Federal road outside of shop right	Verizon Wireless	311	480	16643	309	16782604
Federal road outside of shop right	Verizon Wireless	311	480	16643	309	16782604
Federal road outside of shop right	Verizon Wireless	311	480	16643	309	16782606
Federal road outside of shop right	Verizon Wireless	311	480	16643	309	16782606
Costco	Verizon Wireless	311	480	16643	53	16671758
Costco	Verizon Wireless	311	480	16643	53	16671756
Grays bridge road 11/17/22	Verizon Wireless	311	480	16643	273	16715009
34 near Eva Road	Verizon Wireless	311	480	16643	166	16640784
Parklawn drive edge of bethel and brookfield	Verizon Wireless	311	480	16643	53	16671760
Public works off grays bridge road	Verizon Wireless	311	480	16643	111	16797778
34 near Eva Road	Verizon Wireless	311	480	16643	166	16640782
34 near Eva Road	Verizon Wireless	311	480	16643	103	16668184
34 near Eva Road	Verizon Wireless	311	480	16643	111	16797778
34 near Eva Road	Verizon Wireless	311	480	16643	53	16671756
34 near Eva Road	Verizon Wireless	311	480	16643	103	16668182
Costco	Verizon Wireless	311	480	16643	53	16671760
Public works off grays bridge road	Verizon Wireless	311	480	16643	166	16640782
Parking lot Amazon fresh v2	Verizon Wireless	311	480	16643	109	16797703
Public works off grays bridge road	Verizon Wireless	311	480	16643	53	16671760
AmazonFresh Parking Lot	Verizon Wireless	311	480	16643	109	16797703
72 grays bridge road across from public works	Verizon Wireless	311	480	16643	109	16797703

Town of Brookfield Antenna Scan Analysis

Location	Carrier	Modulation-ID	Carrier-ID-1	Carrier-ID-2	WTF-ID	Antenna-ID
72 grays bridge road across from public works	Verizon Wireless	311	480	16643	53	16671745
72 grays bridge road across from public works	Verizon Wireless	311	480	16643	166	16640782
72 grays bridge road across from public works	Verizon Wireless	311	480	16643	111	16797778
72 grays bridge road across from public works	Verizon Wireless	311	480	16643	273	16715024
65 Indian trail brookfield	Verizon Wireless	311	480	16643	95	16694274
Grays bridge road 11/17/22	Verizon Wireless	311	480	16643	309	16782606
Grays bridge road 11/17/22	Verizon Wireless	311	480	16643	273	16715022
7 parkwood drive and Vale development	Verizon Wireless	311	480	16643	103	16668162
Parking lot Amazon fresh v2	Verizon Wireless	311	480	16643	309	16782606
AmazonFresh Parking Lot	Verizon Wireless	311	480	16643	309	16782606
34 near Eva Road	Verizon Wireless	311	480	16643	166	16640769
34 near Eva Road	Verizon Wireless	311	480	16643	103	16668162
Federal road south of 84 exit across from vitamin shoppe	Verizon Wireless	311	480	16643	309	16782604
Parklawn drive edge of bethel and brookfield	Verizon Wireless	311	480	16643	53	16671745
Parklawn drive edge of bethel and brookfield	Verizon Wireless	311	480	16643	53	16671758
Parklawn drive edge of bethel and brookfield	Verizon Wireless	311	480	16643	53	16671756
Parking lot Amazon fresh v2	Verizon Wireless	311	480	16643	309	16782604
5 Tead road 10/2/22	Verizon Wireless	311	480	16643	103	16668162
5 Tead road 10/2/22	Verizon Wireless	311	480	16643	103	16668184
5 Tead road 10/2/22	Verizon Wireless	311	480	16643	103	16668182
5 Tead road 10/2/22	Verizon Wireless	311	480	16643	103	16668186
AmazonFresh Parking Lot	Verizon Wireless	311	480	16643	309	16782604
65 Indian trail brookfield	Verizon Wireless	311	480	16643	59	16687118
65 Indian trail brookfield	Verizon Wireless	311	480	16643	95	16694294
65 Indian trail brookfield	Verizon Wireless	311	480	16643	71	16667428
7 parkwood drive and Vale development	Verizon Wireless	311	480	16643	103	16668184
7 parkwood drive and Vale development	Verizon Wireless	311	480	16643	103	16668182
7 parkwood drive and Vale development	Verizon Wireless	311	480	16643	103	16668182
7 parkwood drive and Vale development	Verizon Wireless	311	480	16643	111	16797778
7 parkwood drive and Vale development	Verizon Wireless	311	480	16643	103	16668186
60 vale road	Verizon Wireless	311	480	16643	103	16668162
60 vale road	Verizon Wireless	311	480	16643	103	16668184
60 vale road	Verizon Wireless	311	480	16643	111	16797778
60 vale road	Verizon Wireless	311	480	16643	103	16668182
New school	Verizon Wireless	311	480	16893	480	262228557

Town of Brookfield Antenna Scan Analysis

Location	Carrier	Modulation-ID	Carrier-ID-1	Carrier-ID-2	WTF-ID	Antenna-ID
New school	Verizon Wireless	311	480	16643	59	16687118
New school	Verizon Wireless	311	480	16643	87	16684812
New school	Verizon Wireless	311	480	16643	53	16671760

Exhibit D: Pictures of Track and Tanks located across the street from Tower location planned at 60 Vale Road



TC/DO117J100W

	TEST	QUALIFIED	DATE
BASIC QUALIFICATION	TCDC	2018	2018
ANALYSIS TEST	NEOT	2021	2021
SERVICE EQUIPMENT	HSC	2018	2018
PRE-TRUCK TEST	HSC	2018	2018
ILLUM			
LABOR			
S.A.S. INSPECTION	HSC	2018	2018
ETUB BILL INSPECTION	HSC	2018	2018

AAR ST-445  
AAR ST-446

482X  
482X  
11/10/18

LIFE/PULL HERE



JACK  
POINT

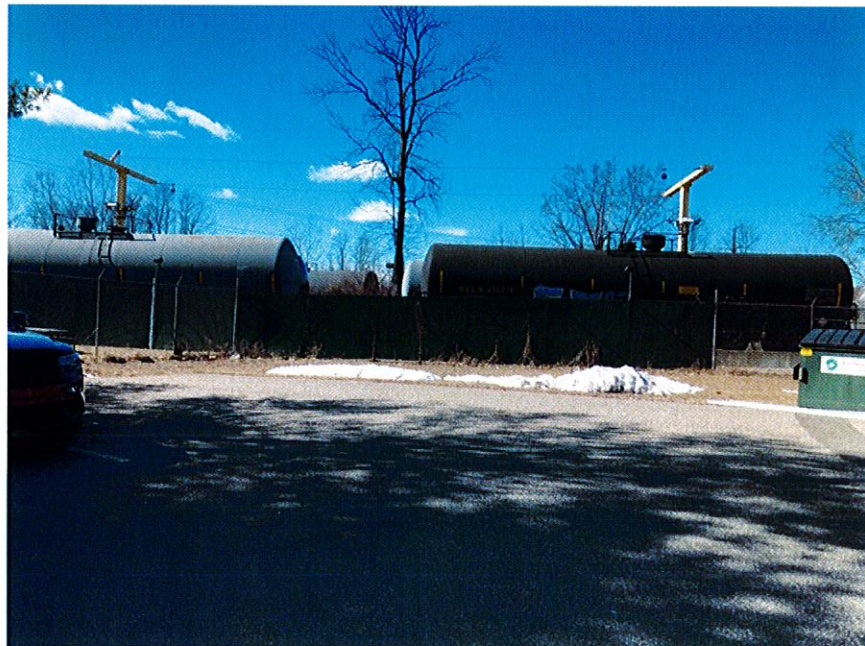
TC 1170011

Exhibit\_\_





Images of the containers and cars  
In vicinity of proposed tower address  
60 Vale Road, Brookfield Connecticut





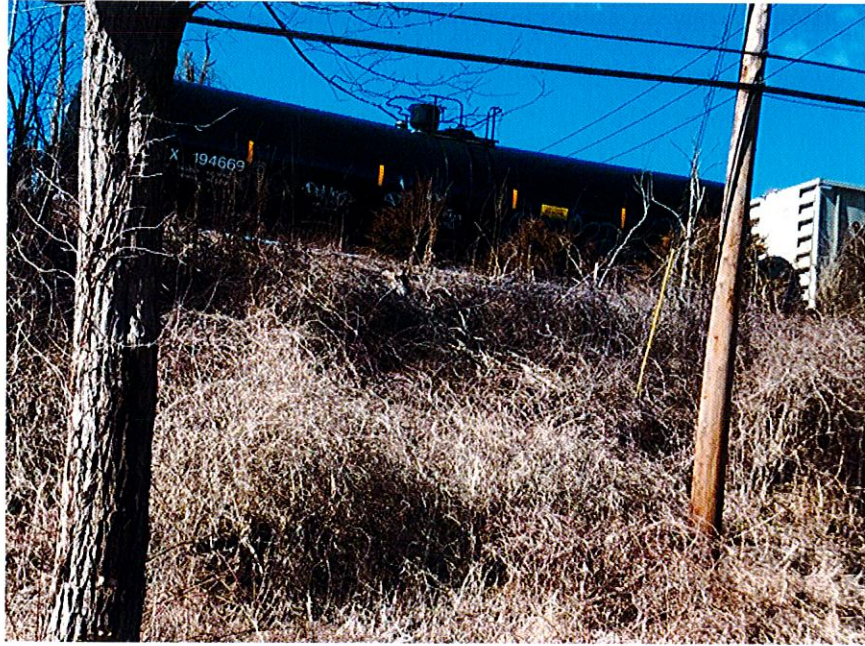


Exhibit E: MSDS Reports for Ethyl Alcohol and Isopropyl Alcohol

**1. Identification**

<b>Product identifier</b>	<b>Ethyl Alcohol 200 Proof</b>	
<b>Other means of identification</b>		
<b>CAS number</b>	64-17-5	
<b>Synonyms</b>	Ethyl Alcohol 100%	
<b>Recommended use</b>	General purpose solvent.	
<b>Recommended restrictions</b>	Use in accordance with manufacturer's recommendations.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Company Name</b>	Greenfield Global USA Inc.	
<b>Address</b>	1101 Isaac Shelby Drive Shelbyville, KY 40065 USA	
<b>Telephone</b>	502.232.7600	
<b>Fax</b>	502.633.6100	
<b>Company Name</b>	Greenfield Global USA Inc.	
<b>Address</b>	58 Vale Road Brookfield, CT 06804 USA	
<b>Telephone</b>	203.740.3471	
<b>Fax</b>	203.740.3481	
<b>Emergency phone number</b>		
<b>USA</b>	CHEMTREC: 1.800.424.9300 (CCN 17213)	
<b>International</b>	CHEMTREC: +1.703.527.3887 (CCN 17213)	

**2. Hazard(s) identification**

<b>Physical hazards</b>	Flammable liquids	Category 2
<b>Health hazards</b>	Serious eye damage/eye irritation	Category 2
<b>OSHA defined hazards</b>	Not classified.	

**Label elements**



**Signal word** Danger  
**Hazard statement** Highly flammable liquid and vapor. Causes serious eye irritation.

**Precautionary statement**  
**Prevention** Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.

**Response** If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.

**Storage** Store in a well-ventilated place. Keep cool.

<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	None.

### 3. Composition/information on ingredients

#### Substances

Chemical name	Common name and synonyms	CAS number	%
Ethyl Alcohol	Ethyl Alcohol 100%	64-17-5	100

**Composition comments** All concentrations are in percent by weight unless otherwise indicated.

### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Headache. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	Highly flammable liquid and vapor.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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**Methods and materials for containment and cleaning up**

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. This product is miscible in water.

**Large Spills:** Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

**Small Spills:** Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

**Environmental precautions****7. Handling and storage****Precautions for safe handling**

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection****Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Material	Type	Value
Ethyl Alcohol (CAS 64-17-5)	PEL	1900 mg/m <sup>3</sup> 1000 ppm

**US. ACGIH Threshold Limit Values**

Material	Type	Value
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm

**US. NIOSH: Pocket Guide to Chemical Hazards**

Material	Type	Value
Ethyl Alcohol (CAS 64-17-5)	TWA	1900 mg/m <sup>3</sup> 1000 ppm

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Chemical goggles are recommended.

**Skin protection****Hand protection**

Wear appropriate chemical resistant gloves. Nitrile, butyl rubber or neoprene gloves are recommended. Other suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

**Skin protection****Other**

Wear appropriate chemical resistant clothing.

**Respiratory protection**

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties****Appearance**

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Clear liquid; invisible vapor.

**Odor** Sweet. Alcohol-like.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** 173 °F (78.33 °C)

**Flash point** 55.0 °F (12.8 °C) Closed Cup

**Evaporation rate** May evaporate quickly.

**Flammability (solid, gas)** Not applicable.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** 3.3 %

**Flammability limit - upper (%)** 19 %

**Vapor pressure** 59.5 hPa (68 °F (20 °C))

**Vapor density** 1.6

**Relative density** 0.785 g/ml (77 °F (25 °C))

**Solubility(ies)**

**Solubility (water)** completely soluble

**Partition coefficient (n-octanol/water)** Not available

**Auto-ignition temperature** 685 °F (362.78 °C)

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Other information**

**Explosive properties** Not explosive.

**Molecular formula** C2-H6-O

**Molecular weight** 46.07 g/mol

**Oxidizing properties** Not oxidizing.

**10. Stability and reactivity**

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability** Material is stable under normal conditions.

**Possibility of hazardous reactions** Hazardous polymerization does not occur.

**Conditions to avoid** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

**Incompatible materials** Strong oxidizing agents.

**Hazardous decomposition products** No hazardous decomposition products are known.

**11. Toxicological information****Information on likely routes of exposure**

**Inhalation** Prolonged inhalation may be harmful.

**Skin contact** No adverse effects due to skin contact are expected.



**Eye contact** Causes serious eye irritation.

**Ingestion** Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics** Headache. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing.

**Information on toxicological effects**

**Acute toxicity**

Product	Species	Test Results
Ethyl Alcohol (CAS 64-17-5)		
<b>Acute</b>		
<b>Inhalation</b>		
<i>Vapor</i>		
LC50	Rat	117 - 125 mg/l, 4 Hours
<b>Oral</b>		
LD50	Rat	10470 mg/kg

**Skin corrosion/irritation** Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation** Causes serious eye irritation.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not a respiratory sensitizer.

**Skin sensitization** This product is not expected to cause skin sensitization.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** Not classifiable as to carcinogenicity to humans.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**NTP Report on Carcinogens**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not regulated.

**Reproductive toxicity** Possible reproductive hazard.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results	
Ethyl Alcohol (CAS 64-17-5)			
<b>Aquatic</b>			
Algae	EC10	Freshwater algae	11.5 mg/l, 72 hours
	EC50	Freshwater algae	275 mg/l, 72 hours
Fish	LC50	Freshwater fish	11200 mg/l, 24 hours
	NOEC	Freshwater fish	250 mg/l
Invertebrate	EC50	Freshwater invertebrate	5012 mg/l, 48 hours
		Marine water invertebrate	857 mg/l, 48 hours
	NOEC	Freshwater invertebrate	9.6 mg/l, 10 days
		Marine water invertebrate	79 mg/l, 96 hours

Product	Species	Test Results
Other	EC50	Lemna minor 4432 mg/l, 7 days
	NOEC	Lemna minor 280 mg/l, 7 days
<b>Other</b>		
Micro-organisms	LC50	Micro-organisms 5800 mg/l, 4 hours
<b>Terrestrial</b>		
Plant	EC50	Terrestrial plant 633 mg/kg dw

**Persistence and degradability** No data is available on the degradability of this substance.

**Bioaccumulative potential**

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

#### DOT

**UN number** UN1170  
**UN proper shipping name** Ethanol  
**Transport hazard class(es)**  
**Class** 3  
**Subsidiary risk** -  
**Label(s)** 3  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** No  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Special provisions** 24, IB2, T4, TP1  
**Packaging exceptions** 4b, 150  
**Packaging non bulk** 202  
**Packaging bulk** 242

#### IATA

**UN number** UN1170  
**UN proper shipping name** Ethanol  
**Transport hazard class(es)**  
**Class** 3  
**Subsidiary risk** -  
**Label(s)** 3  
**Packing group** II  
**Environmental hazards** No  
**ERG Code** 3L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

#### IMDG

**UN number** UN1170  
**UN proper shipping name** ETHANOL

<b>Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
Label(s)	3
<b>Packing group</b>	II
<b>Environmental hazards</b>	
Marine pollutant	No
<b>EmS</b>	F-E, S-D
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not established.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

### SARA 304 Emergency release notification

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

#### SARA 311/312 Hazardous chemical

Yes

**Classified hazard categories** Flammable (gases, aerosols, liquids, or solids)  
Serious eye damage or eye irritation

#### SARA 313 (TRI reporting)

Not regulated.

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

#### Safe Drinking Water Act (SDWA)

Not regulated.

#### FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Ethyl Alcohol (CAS 64-17-5)

Low priority

**Food and Drug Administration (FDA)** Total food additive  
Direct food additive  
GRAS food additive

### US state regulations

#### US. Massachusetts RTK - Substance List

Ethyl Alcohol (CAS 64-17-5)

#### US. New Jersey Worker and Community Right-to-Know Act

Ethyl Alcohol (CAS 64-17-5)

#### US. Pennsylvania Worker and Community Right-to-Know Law

Ethyl Alcohol (CAS 64-17-5)

#### US. Rhode Island RTK

Ethyl Alcohol (CAS 64-17-5)

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

<b>Issue date</b>	18-June-2018
<b>Revision date</b>	-
<b>Version #</b>	01
<b>HMSI® ratings</b>	Health: 2 Flammability: 3 Physical hazard: 0
<b>Disclaimer</b>	This product is subject to Greenfield Global USA Inc.'s terms and conditions, which can be found at <a href="http://www.greenfield.com/tc-po-us/">http://www.greenfield.com/tc-po-us/</a> . Greenfield cannot anticipate all conditions under which this information and this product, or the products of other manufacturers in combination with this product, may be used. The user is responsible for the proper and safe use, handling, storage and disposal of the product, and assumes liability for any loss, injury, damage or expense arising from any failure to do so. The data in this sheet is based on information and experience available at the time of writing.

# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>Isopropyl Alcohol 99%</b>	
<b>Other means of identification</b>		
<b>CAS number</b>	67-63-0	
<b>Synonyms</b>	Dimethyl carbinol, IPA, 2-Propanol, Isopropanol	
<b>Recommended use</b>	Rubbing alcohol. General purpose solvent.	
<b>Recommended restrictions</b>	Refer to the alcohol control authority in which the product is to be used - Canada Revenue Agency (Excise) in Canada, US Tax and Trade Bureau in the US, etc.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Company name</b>	Greenfield Global Inc.	
<b>Address</b>	6985 Financial Drive Mississauga, Ontario L5N 0G3 Canada	
<b>Telephone</b>	(905) 790-7500	
<b>Website</b>	<a href="http://www.greenfield.com">http://www.greenfield.com</a>	
<b>Emergency phone number</b>	CANUTEC: (613) 996-6666	

## 2. Hazard identification

<b>Physical hazards</b>	Flammable liquids	Category 2
<b>Health hazards</b>	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity following single exposure	Category 3 narcotic effects

### Label elements



<b>Signal word</b>	Danger	
<b>Hazard statement</b>	Highly flammable liquid and vapour. Causes serious eye irritation. May cause drowsiness or dizziness.	
<b>Precautionary statement</b>		
<b>Prevention</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist/vapours. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.	
<b>Response</b>	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTRE/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. In case of fire: Use water fog, alcohol resistant foam, dry chemical powder, carbon dioxide to extinguish.	
<b>Storage</b>	Store in a well-ventilated place. Keep container tightly closed. Store locked up.	
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.	
<b>Other hazards</b>	None known.	
<b>Supplemental information</b>	None.	

### 3. Composition/information on ingredients

#### Substances

Chemical name	Common name and synonyms	CAS number	%
Isopropyl alcohol	Dimethyl carbinol IPA 2-Propanol Isopropanol	67-63-0	100

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First-aid measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor/physician if you feel unwell.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	Highly flammable liquid and vapour.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.  Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.  Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.  Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling** Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist/vapours. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Material	Type	Value
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Material	Type	Value
Isopropyl alcohol (CAS 67-63-0)	STEL	984 mg/m3
		400 ppm
	TWA	492 mg/m3 200 ppm

#### Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Material	Type	Value
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

#### Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Material	Type	Value
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

#### Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Material	Type	Value
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

#### Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Material	Type	Value
Isopropyl alcohol (CAS 67-63-0)	STEL	1230 mg/m3
		500 ppm
	TWA	983 mg/m3 400 ppm

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Material	Type	Value
Isopropyl alcohol (CAS 67-63-0)	15 minute	400 ppm
	8 hour	200 ppm

**Biological limit values**

**ACGIH Biological Exposure Indices**

Material	Value	Determinant	Specimen	Sampling Time
Isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

\* - For sampling details, please see the source document.

**Appropriate engineering controls** Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves. Neoprene, butyl rubber, nitrile or Viton® gloves are recommended. Other suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

**Other** Wear appropriate chemical resistant clothing.

**Respiratory protection** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapour cartridge and full facepiece.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

**Appearance**

**Physical state** Liquid.

**Form** Liquid.

**Colour** Colourless.

**Odour** Alcohol-like.

**Odour threshold** Not available.

**pH** Not available.

**Melting point/freezing point** -89.5 °C (-129.1 °F)

**Initial boiling point and boiling range** 83 °C (181.4 °F)

**Flash point** 12.0 °C (53.6 °F)

**Evaporation rate** 3

**Flammability (solid, gas)** Not applicable.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** 2 % v/v

**Flammability limit - upper (%)** 12.7 % v/v

**Vapour pressure** 43.2 hPa (20 °C (68 °F))

**Vapour density** 2.1

**Relative density** 0.785 g/cm<sup>3</sup> (25 °C (77 °F))



<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Complete
<b>Partition coefficient (n-octanol/water)</b>	0.05
<b>Auto-ignition temperature</b>	399 °C (750.2 °F)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Heat of combustion (NFPA 30B)</b>	27.4 kJ/g
<b>Molecular formula</b>	C3-H8-O
<b>Molecular weight</b>	60.1 g/mol
<b>Oxidising properties</b>	Not oxidising.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerisation does not occur.
<b>Conditions to avoid</b>	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Acids. Strong oxidising agents. Chlorine. Isocyanates.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Ingestion</b>	Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics** May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

### Information on toxicological effects

#### Acute toxicity

Product	Species	Test Results
Isopropyl alcohol (CAS 67-63-0)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	12870 mg/kg
<b>Inhalation</b>		
<i>Vapour</i>		
LC50	Rat	72.6 mg/l, 4 Hours
<b>Oral</b>		
LD50	Rat	4710 mg/kg

**Skin corrosion/irritation** Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation** Causes serious eye irritation.

#### Respiratory or skin sensitisation

**Respiratory sensitisation** Not a respiratory sensitiser.

**Skin sensitisation** This product is not expected to cause skin sensitisation.  
**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**

**ACGIH Carcinogens**

Isopropyl alcohol (CAS 67-63-0) A4 Not classifiable as a human carcinogen.

**Canada - Manitoba OELs: carcinogenicity**

Isopropyl alcohol (CAS 67-63-0) Not classifiable as a human carcinogen.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
Isopropyl alcohol (CAS 67-63-0)		
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	LC50 Daphnia magna	> 10000 mg/l, 24 hours
Fish	LC50 Pimephales promelas	9640 mg/l, 96 hours
<i>Chronic</i>		
Crustacea	EC50 Daphnia magna	> 100 mg/l, 21 days
	NOEC Daphnia magna	141 mg/l, 16 days
		30 mg/l, 21 days

**Persistence and degradability** Expected to be readily biodegradable.

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**

0.05

**Mobility in soil** Expected to be highly mobile in soil.

**Other adverse effects** None known.

**13. Disposal considerations**

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport information**

**TDG**

**UN number** UN1219  
**UN proper shipping name** ISOPROPANOL  
**Transport hazard class(es)**  
**Class** 3

**Subsidiary risk** -  
**Packing group** II  
**Environmental hazards** No.  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

#### IATA

**UN number** UN1219  
**UN proper shipping name** Isopropanol  
**Transport hazard class(es)**  
**Class** 3  
**Subsidiary risk** -  
**Packing group** II  
**Environmental hazards** No.  
**ERG Code** 3L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

#### IMDG

**UN number** UN1219  
**UN proper shipping name** ISOPROPANOL  
**Transport hazard class(es)**  
**Class** 3  
**Subsidiary risk** -  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** No.  
**EmS** F-E, S-D  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This product is not intended to be transported in bulk.

## 15. Regulatory information

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

### Controlled Drugs and Substances Act

Not regulated.

### Export Control List (CEPA 1999, Schedule 3)

Not listed.

### Greenhouse Gases

Not listed.

### Precursor Control Regulations

Not regulated.

#### International regulations

##### Stockholm Convention

Not applicable.

##### Rotterdam Convention

Not applicable.

##### Kyoto Protocol

Not applicable.

##### Montreal Protocol

Not applicable.

##### Basel Convention

Not applicable.

#### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

**Issue date** 04-May-2021

**Revision date** -

**Version No.** 01

**Disclaimer** This product is subject to Greenfield Global Inc.'s terms and conditions, which can be found at <http://www.greenfield.com/tc-po-can/>. The information in this SDS is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. The information in this safety data sheet must be regarded as a description of the safety requirements relating to the material and not as a guarantee of the properties thereof. No warranty guarantee or representation is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy itself as to the suitability of such information for its own particular use. This information relates only to the specific product designated and may not be valid for such product used in combination with any other materials or in any process. It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations applicable to the use, storage, or handling of the product. THE COMPANY MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF PERFORMANCE, OR USAGE OF TRADE, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. Given the variety of factors that can affect the use and application of the product, which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to independently determine whether it is fit for a particular purpose, suitable, safe, and/or lawful for user's method of use or application.

Exhibit F: EMP Definition and Description



# Electromagnetic pulse

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An **electromagnetic pulse (EMP)**, also a **transient electromagnetic disturbance (TED)**, is a brief burst of electromagnetic energy. The origin of an EMP can be natural or artificial, and can occur as an electromagnetic field, as an electric field, as a magnetic field, or as a conducted electric current. The electromagnetic interference caused by an EMP can disrupt communications and damage electronic equipment. An EMP such as a lightning strike can physically damage objects such as buildings and aircraft. The management of EMP effects is a branch of electromagnetic compatibility (EMC) engineering.

The first recorded damage from an electromagnetic pulse came with the solar storm of August 1859, or the Carrington Event.<sup>[1]</sup>

In modern warfare, weapons delivering a high energy EMP pulse are designed to disrupt <sup>[2]</sup> communications equipment, the computers needed to operate modern warplanes, or even put the entire electrical network of a target country out of commission.<sup>[3]</sup>

## General characteristics

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An electromagnetic pulse is a short surge of electromagnetic energy. Its short duration means that it will be spread over a range of frequencies. Pulses are typically characterized by:

- The mode of energy transfer (radiated, electric, magnetic or conducted).
- The range or spectrum of frequencies present.
- Pulse waveform: shape, duration and amplitude.

The frequency spectrum and the pulse waveform are interrelated via the Fourier transform which describes how component waveforms may sum to the observed frequency spectrum.

## Types of energy

EMP energy may be transferred in any of four forms:

- Electric field
- Magnetic field
- Electromagnetic radiation
- Electrical conduction

According to Maxwell's equations, a pulse of electric energy will always be accompanied by a pulse of magnetic energy. In a typical pulse, either the electric or the magnetic form will dominate.

In general, radiation only acts over long distances, with the magnetic and electric fields acting over short distances. There are a few exceptions, such as a solar magnetic flare.

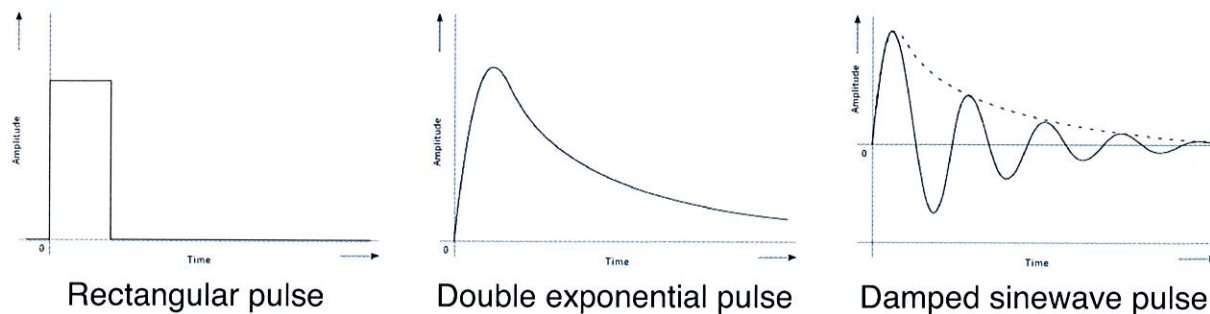
## Frequency ranges

A pulse of electromagnetic energy typically comprises many frequencies from very low to some upper limit depending on the source. The range defined as EMP, sometimes referred to as "DC to daylight", excludes the highest frequencies comprising the optical (infrared, visible, ultraviolet) and ionizing (X and gamma rays) ranges.

Some types of EMP events can leave an optical trail, such as lightning and sparks, but these are side effects of the current flow through the air and are not part of the EMP itself.

## Pulse waveforms

The waveform of a pulse describes how its instantaneous amplitude (field strength or current) changes over time. Real pulses tend to be quite complicated, so simplified models are often used. Such a model is typically described either in a diagram or as a mathematical equation.



Most electromagnetic pulses have a very sharp leading edge, building up quickly to their maximum level. The classic model is a double-exponential curve which climbs steeply, quickly reaches a peak and then decays more slowly. However, pulses from a controlled switching circuit often approximate the form of a rectangular or "square" pulse.

EMP events usually induce a corresponding signal in the surrounding environment or material. Coupling usually occurs most strongly over a relatively narrow frequency band, leading to a characteristic damped sine wave. Visually it is shown as a high frequency sine wave growing and decaying within the longer-lived envelope of the double-exponential curve. A damped sinewave typically has much lower energy and a narrower frequency spread than the original pulse, due to the transfer characteristic of the coupling mode. In practice, EMP test equipment often injects these damped sinewaves directly rather than attempting to recreate the high-energy threat pulses.

In a pulse train, such as from a digital clock circuit, the waveform is repeated at regular intervals. A single complete pulse cycle is sufficient to characterise such a regular, repetitive train.

## Types

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An EMP arises where the source emits a short-duration pulse of energy. The energy is usually broadband by nature, although it often excites a relatively narrow-band *damped sine wave* response in the surrounding environment. Some types are generated as repetitive and regular *pulse trains*.

Different types of EMP arise from natural, man-made, and weapons effects.

Types of natural EMP events include:

- Lightning electromagnetic pulse (LEMP). The discharge is typically an initial huge current flow, at least mega-amps, followed by a train of pulses of decreasing energy.
- Electrostatic discharge (ESD), as a result of two charged objects coming into proximity or even contact.
- Meteoric EMP. The discharge of electromagnetic energy resulting from either the impact of a meteoroid with a spacecraft or the explosive breakup of a meteoroid passing through the Earth's atmosphere.<sup>[4][5]</sup>
- Coronal mass ejection (CME), sometimes referred to as a solar EMP. A burst of plasma and accompanying magnetic field, ejected from the solar corona and released into the solar wind.<sup>[6]</sup>

Types of (civil) man-made EMP events include:

- Switching action of electrical circuitry, whether isolated or repetitive (as a pulse train).
- Electric motors can create a train of pulses as the internal electrical contacts make and break connections as the armature rotates.
- Gasoline engine ignition systems can create a train of pulses as the spark plugs are energized or fired.
- Continual switching actions of digital electronic circuitry.
- Power line surges. These can be up to several kilovolts, enough to damage electronic equipment that is insufficiently protected.

Types of military EMP include:

- Nuclear electromagnetic pulse (NEMP), as a result of a nuclear explosion. A variant of this is the high altitude nuclear EMP (HEMP), which produces a secondary pulse due to particle interactions with the Earth's atmosphere and magnetic field.
- Non-nuclear electromagnetic pulse (NNEMP) weapons.

## Lightning

Lightning is unusual in that it typically has a preliminary "leader" discharge of low energy building up to the main pulse, which in turn may be followed at intervals by several smaller bursts.<sup>[7][8]</sup>

## Electrostatic discharge (ESD)



ESD events are characterized by high voltages of many kV, but small currents sometimes cause visible sparks. ESD is treated as a small, localized phenomenon, although technically a lightning flash is a very large ESD event. ESD can also be man-made, as in the shock received from a Van de Graaff generator.

An ESD event can damage electronic circuitry by injecting a high-voltage pulse, besides giving people an unpleasant shock. Such an ESD event can also create sparks, which may in turn ignite fires or fuel-vapour explosions. For this reason, before refueling an aircraft or exposing any fuel vapor to the air, the fuel nozzle is first connected to the aircraft to safely discharge any static.

## Switching pulses

The switching action of an electrical circuit creates a sharp change in the flow of electricity. This sharp change is a form of EMP.

Simple electrical sources include inductive loads such as relays, solenoids, and brush contacts in electric motors. These typically send a pulse down any electrical connections present, as well as radiating a pulse of energy. The amplitude is usually small and the signal may be treated as "noise" or "interference". The switching off or "opening" of a circuit causes an abrupt change in the current flowing. This can in turn cause a large pulse in the electric field across the open contacts, causing arcing and damage. It is often necessary to incorporate design features to limit such effects.

Electronic devices such as vacuum tubes or valves, transistors, and diodes can also switch on and off very quickly, causing similar issues. One-off pulses may be caused by solid-state switches and other devices used only occasionally. However, the many millions of transistors in a modern computer may switch repeatedly at frequencies above 1 GHz, causing interference that appears to be continuous.

## Nuclear electromagnetic pulse (NEMP)

A nuclear electromagnetic pulse is the abrupt pulse of electromagnetic radiation resulting from a nuclear explosion. The resulting rapidly changing electric fields and magnetic fields may couple with electrical/electronic systems to produce damaging current and voltage surges.<sup>[9]</sup>

The intense gamma radiation emitted can also ionize the surrounding air, creating a secondary EMP as the atoms of air first lose their electrons and then regain them.

NEMP weapons are designed to maximize such EMP effects as the primary damage mechanism, and some are capable of destroying susceptible electronic equipment over a wide area.

A high-altitude electromagnetic pulse (HEMP) weapon is a NEMP warhead designed to be detonated far above the Earth's surface. The explosion releases a blast of gamma rays into the mid-stratosphere, which ionizes as a secondary effect and the resultant energetic free electrons interact with the Earth's magnetic field to produce a much stronger EMP than is normally produced in the denser air at lower altitudes.

## Non-nuclear electromagnetic pulse (NNEMP)

Non-nuclear electromagnetic pulse (NNEMP) is a weapon-generated electromagnetic pulse without use of nuclear technology. Devices that can achieve this objective include a large low-inductance capacitor bank discharged into a single-loop antenna, a microwave generator, and an explosively pumped flux compression generator. To achieve the frequency characteristics of the pulse needed for optimal coupling into the target, wave-shaping circuits or microwave generators are added between the pulse source and the antenna. Vircators are vacuum tubes that are particularly suitable for microwave conversion of high-energy pulses.<sup>[10]</sup>

NNEMP generators can be carried as a payload of bombs, cruise missiles (such as the CHAMP missile) and drones, with diminished mechanical, thermal and ionizing radiation effects, but without the consequences of deploying nuclear weapons.

The range of NNEMP weapons is much less than nuclear EMP. Nearly all NNEMP devices used as weapons require chemical explosives as their initial energy source, producing only  $10^{-6}$  (one millionth) the energy of nuclear explosives of similar weight.<sup>[11]</sup> The electromagnetic pulse from NNEMP weapons must come from within the weapon, while nuclear weapons generate EMP as a secondary effect.<sup>[12]</sup> These facts limit the range of NNEMP weapons, but allow finer target discrimination. The effect of small e-bombs has proven to be sufficient for certain terrorist or military operations. Examples of such operations include the destruction of electronic control systems critical to the operation of many ground vehicles and aircraft.<sup>[13]</sup>

The concept of the explosively pumped flux compression generator for generating a non-nuclear electromagnetic pulse was conceived as early as 1951 by Andrei Sakharov in the Soviet Union,<sup>[14]</sup> but nations kept work on non-nuclear EMP classified until similar ideas emerged in other nations.

## Electromagnetic forming

The large forces generated by electromagnetic pulses can be used to shape or form objects as part of their manufacturing process.

## Effects

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Minor EMP events, and especially pulse trains, cause low levels of electrical noise or interference which can affect the operation of susceptible devices. For example, a common problem in the mid-twentieth century was interference emitted by the ignition systems of gasoline engines, which caused radio sets to crackle and TV sets to show stripes on the screen. Laws were introduced to make vehicle manufacturers fit interference suppressors.

At a high voltage level an EMP can induce a spark, for example from an electrostatic discharge when fuelling a gasoline-engined vehicle. Such sparks have been known to cause fuel-air explosions and precautions must be taken to prevent them.<sup>[15]</sup>

A large and energetic EMP can induce high currents and voltages in the victim unit, temporarily disrupting its function or even permanently damaging it.

A powerful EMP can also directly affect magnetic materials and corrupt the data stored on media such as magnetic tape and computer hard drives. Hard drives are usually shielded by heavy metal casings. Some IT asset disposition service providers and computer recyclers use a controlled EMP to wipe such magnetic media.<sup>[16]</sup>

A very large EMP event such as a lightning strike is also capable of damaging objects such as trees, buildings and aircraft directly, either through heating effects or the disruptive effects of the very large magnetic field generated by the current. An indirect effect can be electrical fires caused by heating. Most engineered structures and systems require some form of protection against lightning to be designed in.

The damaging effects of high-energy EMP have led to the introduction of EMP weapons, from tactical missiles with a small radius of effect to nuclear bombs designed for maximum EMP effect over a wide area.

## Control

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Like any electromagnetic interference, the threat from EMP is subject to control measures. This is true whether the threat is natural or man-made.

Therefore, most control measures focus on the susceptibility of equipment to EMP effects, and hardening or protecting it from harm. Man-made sources, other than weapons, are also subject to control measures in order to limit the amount of pulse energy emitted.

The discipline of ensuring correct equipment operation in the presence of EMP and other RF threats is known as electromagnetic compatibility (EMC).

### Test simulation

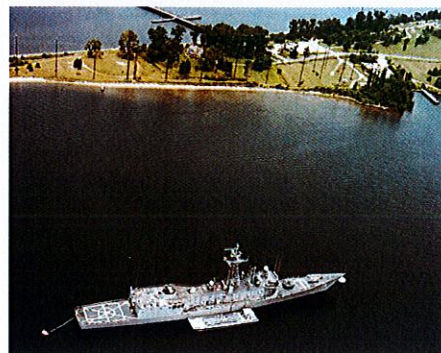
To test the effects of EMP on engineered systems and equipment, an EMP simulator may be used.

#### Induced pulse simulation

Induced pulses are of much lower energy than threat pulses and so are more practicable to create, but they are less predictable. A common test technique is to use a current clamp in reverse, to inject a range of damped sine wave signals into a cable connected to the equipment under test. The damped sine wave generator is able to reproduce the range of induced signals likely to occur.



EMP simulator HAGII-C testing a Boeing E-4 aircraft.



EMPRESS I (antennas along shoreline) with USS Estocin (FFG-15) moored in the foreground for testing.

## Threat pulse simulation

Sometimes the threat pulse itself is simulated in a repeatable way. The pulse may be reproduced at low energy in order to characterise the victim's response prior to damped sinewave injection, or at high energy to recreate the actual threat conditions.

A small-scale ESD simulator may be hand-held.

Bench- or room-sized simulators come in a range of designs, depending on the type and level of threat to be generated.

At the top end of the scale, large outdoor test facilities incorporating high-energy EMP simulators have been built by several countries.<sup>[17][18]</sup> The largest facilities are able to test whole vehicles including ships and aircraft for their susceptibility to EMP. Nearly all of these large EMP simulators used a specialized version of a Marx generator.<sup>[17][18]</sup>

Examples include the huge wooden-structured ATLAS-I simulator (also known as TRESTLE) at Sandia National Labs, New Mexico, which was at one time the world's largest EMP simulator.<sup>[19]</sup> Papers on this and other large EMP simulators used by the United States during the latter part of the Cold War, along with more general information about electromagnetic pulses, are now in the care of the SUMMA Foundation, which is hosted at the University of New Mexico.<sup>[20][21]</sup> The US Navy also has a large facility called the Electro Magnetic Pulse Radiation Environmental Simulator for Ships I (EMPRESS I).

## Safety

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High-level EMP signals can pose a threat to human safety. In such circumstances, direct contact with a live electrical conductor should be avoided. Where this occurs, such as when touching a Van de Graaff generator or other highly charged object, care must be taken to release the object and then discharge the body through a high resistance, in order to avoid the risk of a harmful shock pulse when stepping away.

Very high electric field strengths can cause breakdown of the air and a potentially lethal arc current similar to lightning to flow, but electric field strengths of up to 200 kV/m are regarded as safe.<sup>[22]</sup>

According to research from Edd Gent, a 2019 report by the Electric Power Research Institute, which is funded by utility companies, found that a large EMP attack would probably cause regional blackouts but not a nationwide grid failure and that recovery times would be similar to those of other large-scale outages.<sup>[23]</sup> It is not known how long these electrical blackouts would last, or what extent of damage would occur across the country. It is possible that neighboring countries of the U.S. could also be affected by such an attack, depending on the targeted area and people.

According to an article from Naureen Malik, with North Korea's increasingly successful missile and warhead tests in mind, Congress moved to renew funding for the Commission to Assess the Threat to the U.S. from Electromagnetic Pulse Attack as part of the National Defense Authorization Act.<sup>[24]</sup> At the moment, the United States lacks preparation against an EMP attack.

According to research from Yoshida Reiji, in a 2016 article for the Tokyo-based nonprofit organization Center for Information and Security Trade Control, Onizuka warned that a high-altitude EMP attack would damage or destroy Japan's power, communications and transport systems as well as disable banks, hospitals and nuclear power plants.<sup>[25]</sup>

## In popular culture

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By 1981, a number of articles on electromagnetic pulse in the popular press spread knowledge of the EMP phenomenon into the popular culture.<sup>[26][27][28][29]</sup> EMP has been subsequently used in a wide variety of fiction and other aspects of popular culture.

The popular media often depict EMP effects incorrectly, causing misunderstandings among the public and even professionals. Official efforts have been made in the U.S. to remedy these misconceptions.<sup>[30][31]</sup>

## See also

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- Directed-energy weapon
- Electromagnetic compatibility
- Electromagnetic environment
- Electronic warfare
- Faraday's law of induction
- Geomagnetic storm
- MIL-STD-461, a United States Military Standard that describes how to test equipment for electromagnetic compatibility
- Pulsed power
- Transient (oscillation)
- Ultrashort pulse

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## External links

- *TRESTLE: Landmark of the Cold War* ([http://www.ece.unm.edu/summa/notes/trestle\\_movie.html](http://www.ece.unm.edu/summa/notes/trestle_movie.html)), a short documentary film on the SUMMA Foundation website

Exhibit G: Pictures of terrain taken of Brookfield



Exhibit \_\_\_\_\_

## Brookfield Federal Road Area View

The following images were taken of areas that there is alleged gaps in cellular service and it should be noted that Brookfield is comprised of many hills, rock and stone mountains and terrain that is difficult for wireless antennas signals.

This fact concerning the terrain was also noted by the applicant in their report.

Images are the property of Joan Polzin, Brookfield inhabitant, all rights reserved.





Brookfield Federal Road Area View



Brookfield Federal Road Area View



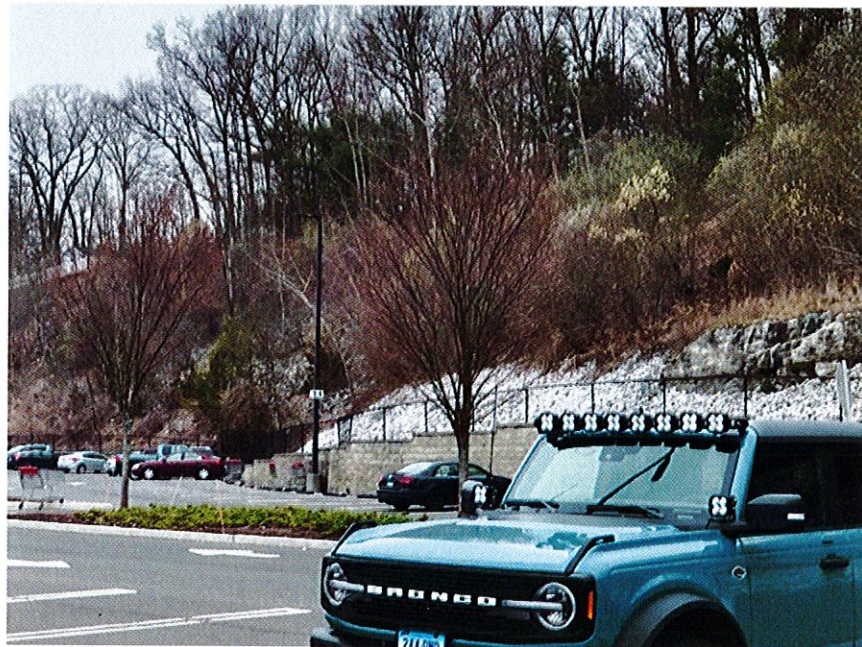
Brookfield Federal Road Area View



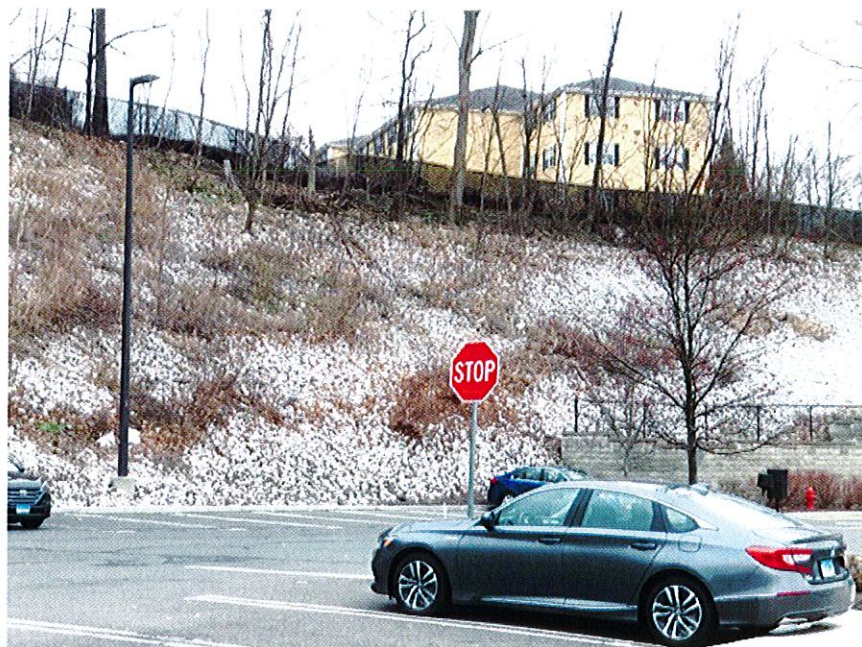
Brookfield Federal Road Area View



Brookfield Federal Road Area View



Brookfield Federal Road Area View



Brookfield Federal Road Area View



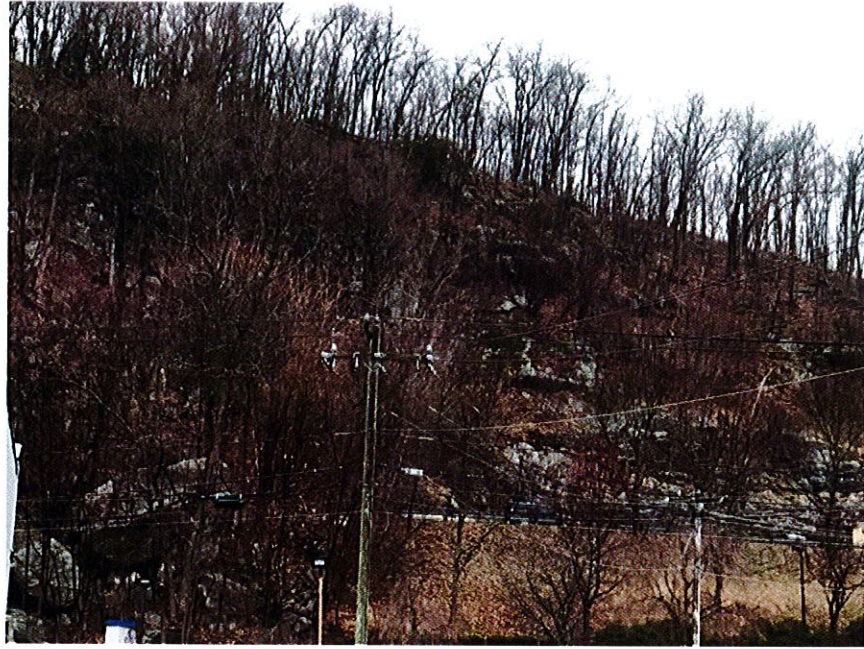


Exhibit H: Report and List of Broadband status and antennas/towers currently available to Brookfield

Exhibit: \_\_\_\_\_

On October 21, 2022, we did a search of nearby towers and antennas in the area of proposed site 60 Vale Road, Brookfield:

Antennasearch.com

Searched 60 Vale Road, Brookfield CT

**Results Summary**  
29 towers and 142 antennas within a 3.0 mile radius of 60 Vale Rd, Brookfield, CT 06804, United States.

Date: 10/21/22

On March 30, 2023 we did another search and found that in the vicinity of 60 Vale Road, Brookfield, we had these towers and antennas:

60 Vale Rd, Brookfield, CT 06804, United States

Submit Towers Antennas

**Results Summary**  
33 towers and 142 antennas within a 3.0 mile radius of 60 Vale Rd, Brookfield, CT 06804, United States.

**Registered Towers**

ID	Carrier/Owner	Distance
0	Sba Towers ll Llc	1.7 mi
1	null	3.0 mi

**Non-registered Towers**

ID	Carrier/Owner	Distance
2	Sprint Nextel	0.2 mi
3	Sprint Nextel	0.2 mi
4	Blank	1.2 mi
5	Sprint Nextel	1.3 mi
6	Eversource	1.3 mi
7	Blank	1.4 mi
8	Springwich Cellular Ltd	1.4 mi
9	AT&T	1.5 mi

According to CT Siting Council Database between Brookfield, Bethel, Danbury, and new Fairfield we have a total of 93 different structures erected for coverage based on the CT Siting Council Database as of 1/19/23 called copy of ctsites.

We are awaiting data from PURA who has jurisdiction for small cell wireless telecommunications facilities placed on utility poles and light poles for example.

#### In Brookfield we have 16 Types of Structures:

Brookfield	*** Pocono Road	monopole	150	Verizon @ 148'
Brookfield	** Candlewood Lake Road	utility pole	32	Verizon @ 32'
Brookfield	*** Whisconier Road	rooftop	26'	
Brookfield	* Huckleberry Hill Road	other (flagpole)	60	Cingular/AT&T
Brookfield	** Vale Road	power mount	125	Sprint @ 135'
Brookfield	** Vale Road (Park Ridge Road)	power mount	100	T-Mobile @ 125'
Brookfield	** Carmen Hill Rd.	self-supporting lattice	80	Verizon @ 79'
Brookfield	** Carmen Hill Road	guyed lattice	454	Sprint/Nextel @
Brookfield	** Long Meadow Hill Road		14'	
Brookfield	** Silvermine Road		4 @ 20'	
Brookfield	*** Federal Road	power mount	91	Cingular @ 97'
Brookfield	* Obtuse Hill Road		20'	
Brookfield	** Pocono Road		4 @ 30'	
Brookfield	** Greys Bridge Road		20'	
Brookfield	Obtuse Hill Road	utility pole	39	Verizon @ 39'
Brookfield	Sand Cut Road	utility pole	36	Verizon @ 36'

#### In neighboring town of Bethel we have 14:

Bethel	** Francis J. Clarke Circle	monopole	155	Nextel @ 146'
Bethel	*** Greenwood Avenue	rooftop	36	
Bethel	*** Walnut Hill Road	church steeple	46.5'	
Bethel	*** Old Hawleyville Road	utility pole	31	verizon @ 31'
Bethel	*** Greenwood Avenue	steeple		T-Mobile @ 78'
Bethel	** Shelley Road	power mount	78	Sprint @ 93'
Bethel	** Spring Hill Lane	monopole	125	Cingular/AT&T
Bethel	** Grassy Plain Street	utility pole	35	AT&T @ 34.5'
Bethel	** Codfish Hill Rd (** Codfish Hill Rd)	monopole	150	Verizon @ 150'
Bethel	** Stony Hill Road	utility pole	35	AT&T @ 35'
Bethel	* Stony Hill Rd	power mount	140	Nextel @ 156'
Bethel	* Chimney Drive	power mount	150	T-Mobile @ 175'
Bethel	* Sky Edge	power mount	150	Sprint @ 157'
Bethel	Stony Hill Road	utility pole	34	Verizon @ 34.4'

#### In neighboring town of Danbury we have 59 Structures:

Danbury	* Casper Street	in-building IP access		T-Mobile
Danbury	* East Gate Road	utility pole	25	Verizon @ 25.2'
Danbury	* Fairfield Avenue	other (camo. Chimney)	39'	T-Mobile @ 37'
Danbury	* Great Plain Road	utility pole	36	AT&T @ 36'
Danbury	* Padanaram Road	utility pole	34	Verizon @ 34'

Danbury	*** Mill Plain Road	rooftop		Nextel @ 68'
Danbury	*** Mill Ridge Road	utility pole	24	AT&T @ 24.4
Danbury	*** Federal Road	rooftop	34	Verizon @ 32'
Danbury	** Lake Avenue	rooftop		MetroPCS/T-Mobile
Danbury	** Lake Avenue Extension	rooftop		Verizon @ 48'
Danbury	** Lake Avenue Extension	light pole	25'	AT&T @ 22' & 24'
Danbury	*** West Street	utility pole	36	AT&T @ 36'
Danbury	*** Mill Plain Road	rooftop		Cingular @ 50'
Danbury	**_** Hakim Street	rooftop		Nextel @ ?
Danbury	*** South Street	utility pole	36	AT&T @ 36'
Danbury	** Great Pasture Road	monopole	120	Verizon @ 120'
Danbury	*** Deer Hill Avenue	steeple		T-Mobile @ 120'
Danbury	*** Triangle Street	utility pole	36	AT&T @ 36'
Danbury	** Holley Street	utility pole	34	AT&T @ 33.5'
Danbury	** Old Ridgebury Road	rooftop	125	Cingular @ 105'
Danbury	*** Clapboard Ridge	other (flagpole)	85	Cingular/AT&T
Danbury	*** Park Avenue	rooftop		Nextel @ 56'
Danbury	** Lake Street Extension	rooftop		T-Mobile @ 62'
Danbury	** Backus Avenue	utility pole	41	AT&T @ 40.5'
Danbury	** Hospital Avenue	rooftop	185	Cingular @ 125'
Danbury	** Germantown Road	rooftop		T-Mobile @ 51'
Danbury	** Rose Lane	utility pole	32	AT&T @ 31.5'
Danbury	** Main Street	rooftop		Sprint @ 80'
Danbury	*** Main Street	rooftop	46	Verizon @ 45.5'
Danbury	** Mill Plain Road	rooftop	47	Verizon @ 47'
Danbury	** Sugar Hollow Rd/Route *	monopole	108	Nextel @ 85'
Danbury	** Elm Street	utility pole	32	AT&T @ 31.5'
Danbury	** West St	building mount/lattice	70	Cingular @ 70'
Danbury	** Padanaram Road	other (wood)	80	T-Mobile @ 80'
Danbury	** Mill Plain Road	utility pole	32	AT&T @ 31.5'
Danbury	*** Main Street	rooftop		T-Mobile @ 50'
Danbury	** Newtown Road	monopole	110	Verizon @ 90'
Danbury	** North Street	rooftop		MetroPCS @ 54'
Danbury	** Holley Street Extension	utility pole	36	AT&T @ 36'
Danbury	** Sugar Hollow Rd.	monopole	106	Cingular/AT&T
Danbury	** Newtown Road	small cell	29	Verizon @ 31.2'
Danbury	** Newtown Road	utility pole	36	AT&T @ 36'
Danbury	** Federal Road (aka *** Federal)	hotel sign		Nextel @ 72'
Danbury	** Wooster Heights Road	rooftop		Cingular @ 49'
Danbury	*** Ridgebury Road	rooftop	39	AT&T @ 39'
Danbury	** South Street	utility pole	32	AT&T @ 31.5'
Danbury	Boxwood Lane Ext	self-supporting lattice	100	WCSU @ 67'
Danbury	International Drive	utility pole	37'	Verizon @ 37'
Danbury	Moses Mtn/** Old Boston Road	self-supporting lattice	65	Cingular @ 59'
Danbury	Reserve Road	utility pole	23	Verizon @ 37'
Danbury	West Street	utility pole	37	Verizon @ 37'
Danbury	*** Newtown Road	rooftop		MetroPCS @ 62'
Danbury	*** White Street	rooftop mounted	60	T-Mobile @ 65'
Danbury	** Stadley Rough Road	monopole	140	T-Mobile @ 137'

Danbury	** Newtown Road	in-building IP access		T-Mobile @ 60'
Danbury	* Backus Avenue	rooftop		Nextel @ ?
Danbury	* West View Drive	self-supporting lattice	133	T-Mobile @ 50'
Danbury	Park Avenue	utility pole	41	Verizon @ 37'
Danbury	Reserve Road	utility pole	24	Verizon @ 24'

**Neighboring town of New Fairfield we have 4**

New Fairfield	** (**) Titicus Mountain Rd.	self-supporting lattice	188	metricom @ 160'
New Fairfield	** Misty Brook Lane	in-building IP access		T-Mobile
New Fairfield	** Bogus Hill Road	monopole	130'	Cingular @ 130'
New Fairfield	*** Ball Pond Road	monopole	175	Nextel @ 150'

Exhibit I: Report from Broadband Now showing 99.8% coverage

Using Broadbandnow.com we determined that Connecticut and Brookfield have substantial coverage:

Current Connecticut Connectivity based on independent research site: Broadband Now

<https://broadbandnow.com/Connecticut/Brookfield>

AT&T would have you believe we are in the stone ages with no or limited access and that is wrong

Connecticut, with **99%** of people having access to 100Mbps broadband, **ranked 2nd among all states.**



We see Brookfield has access to many service providers who can deliver high speed and now fiber to the home or office which is faster than any terrestrial wireless service:

<https://broadbandnow.com/Connecticut/Brookfield>

Brookfield 99.8% 16 providers

Summary Of Fastest Internet Providers In Brookfield, Connecticut

PROVIDER	SPEED	TYPE	TIME TO DOWNLOAD 1 GB	AVAILABILITY
Xfinity	1,200 Mbps	Cable	6s	6.8%
Spectrum	1,000 Mbps	Cable	8s	99.6%
T-Mobile 5G Home Internet	182 Mbps	5G internet	45s	61.1%
Viasat Internet	50 Mbps	Satellite	2m 43s	100.0%
HughesNet	25 Mbps	Satellite	5m 27s	100.0%
Frontier	Call For Details	Fiber	--	100.0%



Exhibit J: Federal Public Health Service Act of 1968

SEC. 6. The Governor of Guam shall make an annual report to the Secretary of the Interior on the administration of this Act who shall then forward copies of such reports to the Speaker of the House of Representatives and the President of the Senate.

Report, transmittal to Congress.

SEC. 7. The Comptroller General of the United States, or any of his duly authorized representatives, shall have access, for the purpose of audit and examination, to the books, documents, papers, and records of the agency, or agencies, of the government of Guam administering the plan that are pertinent to the funds received under this Act.

Auditing.

Approved October 17, 1968.

Public Law 90-602

AN ACT

To amend the Public Health Service Act to provide for the protection of the public health from radiation emissions from electronic products.

October 18, 1968  
(H. R. 10790)

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

Radiation Control for Health and Safety Act of 1968.

SHORT TITLE

SECTION 1. This Act may be cited as the "Radiation Control for Health and Safety Act of 1968".

AMENDMENTS TO PUBLIC HEALTH SERVICE ACT

SEC. 2. Part F of title III of the Public Health Service Act is amended—

58 Stat. 703; 81 Stat. 536, 42 USC 262-263a.

(1) by striking out the heading for such part and inserting in lieu thereof the following:

"PART F—LICENSING OF BIOLOGICAL PRODUCTS AND CLINICAL LABORATORIES AND CONTROL OF RADIATION

"SUBPART 1—BIOLOGICAL PRODUCTS";

(2) by inserting immediately above the section heading of section 353 the following:

"SUBPART 2—CLINICAL LABORATORIES"; and

(3) by adding at the end of such part F the following new subpart:

"SUBPART 3—ELECTRONIC PRODUCT RADIATION CONTROL

"DECLARATION OF PURPOSE

"SEC. 354. The Congress hereby declares that the public health and safety must be protected from the dangers of electronic product radia-



tion. Thus, it is the purpose of this subpart to provide for the establishment by the Secretary of an electronic product radiation control program which shall include the development and administration of performance standards to control the emission of electronic product radiation from electronic products and the undertaking by public and private organizations of research and investigation into the effects and control of such radiation emissions.

“DEFINITIONS

“SEC. 355. As used in this subpart—

“(1) the term ‘electronic product radiation’ means—

“(A) any ionizing or non-ionizing electromagnetic or particulate radiation, or

“(B) any sonic, infrasonic, or ultrasonic wave, which is emitted from an electronic product as the result of the operation of an electronic circuit in such product;

“(2) the term ‘electronic product’ means (A) any manufactured or assembled product which, when in operation, (i) contains or acts as part of an electronic circuit and (ii) emits (or in the absence of effective shielding or other controls would emit) electronic product radiation, or (B) any manufactured or assembled article which is intended for use as a component, part, or accessory of a product described in clause (A) and which when in operation emits (or in the absence of effective shielding or other controls would emit) such radiation;

“(3) the term ‘manufacturer’ means any person engaged in the business of manufacturing, assembling, or importing of electronic products;

“(4) the term ‘commerce’ means (A) commerce between any place in any State and any place outside thereof; and (B) commerce wholly within the District of Columbia; and

“(5) the term ‘State’ includes the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa.

“ELECTRONIC PRODUCT RADIATION CONTROL PROGRAM

“SEC. 356. (a) The Secretary shall establish and carry out an electronic product radiation control program designed to protect the public health and safety from electronic product radiation. As a part of such program, he shall—

“(1) pursuant to section 358, develop and administer performance standards for electronic products;

“(2) plan, conduct, coordinate, and support research, development, training, and operational activities to minimize the emissions of and the exposure of people to, unnecessary electronic product radiation;

“(3) maintain liaison with and receive information from other Federal and State departments and agencies with related interests, professional organizations, industry, industry and labor associations, and other organizations on present and future potential electronic product radiation;

“(4) study and evaluate emissions of, and conditions of exposure to, electronic product radiation and intense magnetic fields;

“(5) develop, test, and evaluate the effectiveness of procedures and techniques for minimizing exposure to electronic product radiation; and

“(6) consult and maintain liaison with the Secretary of Commerce, the Secretary of Defense, the Secretary of Labor, the Atomic Energy Commission, and other appropriate Federal departments and agencies on (A) techniques, equipment, and programs for testing and evaluating electronic product radiation, and (B) the development of performance standards pursuant to section 358 to control such radiation emissions.

“(b) In carrying out the purposes of subsection (a), the Secretary is authorized to—

“(1) (A) collect and make available, through publications and other appropriate means, the results of, and other information concerning, research and studies relating to the nature and extent of the hazards and control of electronic product radiation; and (B) make such recommendations relating to such hazards and control as he considers appropriate;

“(2) make grants to public and private agencies, organizations, and institutions, and to individuals for the purposes stated in paragraphs (2), (4), and (5) of subsection (a) of this section;

“(3) contract with public or private agencies, institutions, and organizations, and with individuals, without regard to sections 3648 and 3709 of the Revised Statutes of the United States (31 U.S.C. 529, 41 U.S.C. 5); and

“(4) procure (by negotiation or otherwise) electronic products for research and testing purposes, and sell or otherwise dispose of such products.

“(c) (1) Each recipient of assistance under this subpart pursuant to grants or contracts entered into under other than competitive bidding procedures shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and disposition by such recipient of the proceeds of such assistance, the total cost of the project or undertaking in connection with which such assistance is given or used, and the amount of that portion of the cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

“(2) The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access for the purpose of audit and examination to any books, docu-

Records.

ments, papers, and records of the recipients that are pertinent to the grants or contracts entered into under this subpart under other than competitive bidding procedures.

“STUDIES BY THE SECRETARY

Report to Congress.

“SEC. 357. (a) The Secretary shall conduct the following studies, and shall make a report or reports of the results of such studies to the Congress on or before January 1, 1970, and from time to time thereafter as he may find necessary, together with such recommendations for legislation as he may deem appropriate:

“(1) A study of present State and Federal control of health hazards from electronic product radiation and other types of ionizing radiation, which study shall include, but not be limited to—

“(A) control of health hazards from radioactive materials other than materials regulated under the Atomic Energy Act of 1954;

“(B) any gaps and inconsistencies in present controls;

“(C) the need for controlling the sale of certain used electronic products, particularly antiquated X-ray equipment, without upgrading such products to meet the standards for new products or separate standards for used products;

“(D) measures to assure consistent and effective control of the aforementioned health hazards;

“(E) measures to strengthen radiological health programs of State governments; and

“(F) the feasibility of authorizing the Secretary to enter into arrangements with individual States or groups of States to define their respective functions and responsibilities for the control of electronic product radiation and other ionizing radiation;

“(2) A study to determine the necessity for the development of standards for the use of nonmedical electronic products for commercial and industrial purposes; and

“(3) A study of the development of practicable procedures for the detection and measurement of electronic product radiation which may be emitted from electronic products manufactured or imported prior to the effective date of any applicable standard established pursuant to this subpart.

“(b) In carrying out these studies, the Secretary shall invite the participation of other Federal departments and agencies having related responsibilities and interests, State governments—particularly those of States which regulate radioactive materials under section 274 of the Atomic Energy Act of 1954, as amended, and interested professional, labor, and industrial organizations. Upon request from congressional committees interested in these studies, the Secretary shall keep these committees currently informed as to the progress of the studies and shall permit the committees to send observers to meetings of the study groups.

“(c) The Secretary or his designee shall organize the studies and the participation of the invited participants as he deems best. Any dissent from the findings and recommendations of the Secretary shall be included in the report if so requested by the dissenter.

68 Stat. 919,  
42 USC 2011  
note.

73 Stat. 688,  
42 USC 2021.

## "PERFORMANCE STANDARDS FOR ELECTRONIC PRODUCTS

"SEC. 358. (a) (1) The Secretary shall by regulation prescribe performance standards for electronic products to control the emission of electronic product radiation from such products if he determines that such standards are necessary for the protection of the public health and safety. Such standards may include provisions for the testing of such products and the measurement of their electronic product radiation emissions, may require the attachment of warning signs and labels, and may require the provision of instructions for the installation, operation, and use of such products. Such standards may be prescribed from time to time whenever such determinations are made, but the first of such standards shall be prescribed prior to January 1, 1970. In the development of such standards, the Secretary shall consult with Federal and State departments and agencies having related responsibilities or interests and with appropriate professional organizations and interested persons, including representatives of industries and labor organizations which would be affected by such standards, and shall give consideration to—

"(A) the latest available scientific and medical data in the field of electronic product radiation;

"(B) the standards currently recommended by (i) other Federal agencies having responsibilities relating to the control and measurement of electronic product radiation, and (ii) public or private groups having an expertise in the field of electronic product radiation;

"(C) the reasonableness and technical feasibility of such standards as applied to a particular electronic product;

"(D) the adaptability of such standards to the need for uniformity and reliability of testing and measuring procedures and equipment; and

"(E) in the case of a component, or accessory described in paragraph (2) (B) of section 355, the performance of such article in the manufactured or assembled product for which it is designed.

"(2) The Secretary may prescribe different and individual performance standards, to the extent appropriate and feasible, for different electronic products so as to recognize their different operating characteristics and uses.

"(3) The performance standards prescribed under this section shall not apply to any electronic product which is intended solely for export if (A) such product and the outside of any shipping container used in the export of such product are labeled or tagged to show that such product is intended for export, and (B) such product meets all the applicable requirements of the country to which such product is intended for export.

"(4) The Secretary may by regulation amend or revoke any performance standard prescribed under this section.

"(5) The Secretary may exempt from the provisions of this section any electronic product intended for use by departments or agencies of the United States provided such department or agency has pre-

scribed procurement specifications governing emissions of electronic product radiation and provided further that such product is of a type used solely or predominantly by departments or agencies of the United States.

“(b) The provisions of subchapter II of chapter 5 of title 5 of the United States Code (relating to the administrative procedure for rulemaking), and of chapter 7 of such title (relating to judicial review), shall apply with respect to any regulation prescribing, amending, or revoking any standard prescribed under this section.

80 Stat. 381.  
5 USC 551, 701.

Publication in  
Federal Register.

“(c) Each regulation prescribing, amending, or revoking a standard shall specify the date on which it shall take effect which, in the case of any regulation prescribing, or amending any standard, may not be sooner than one year or not later than two years after the date on which such regulation is issued, unless the Secretary finds, for good cause shown, that an earlier or later effective date is in the public interest and publishes in the Federal Register his reason for such finding, in which case such earlier or later date shall apply.

Petition for  
judicial review.

“(d) (1) In a case of actual controversy as to the validity of any regulation issued under this section prescribing, amending, or revoking a performance standard, any person who will be adversely affected by such regulation when it is effective may at any time prior to the sixtieth day after such regulation is issued file a petition with the United States court of appeals for the circuit wherein such person resides or has his principal place of business, for a judicial review of such regulation. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Secretary or other officer designated by him for that purpose. The Secretary thereupon shall file in the court the record of the proceedings on which the Secretary based the regulation, as provided in section 2112 of title 28 of the United States Code.

72 Stat. 941;  
80 Stat. 1323.

“(2) If the petitioner applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Secretary, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Secretary, and to be adduced upon the hearing, in such manner and upon such terms and conditions as to the court may seem proper. The Secretary may modify his findings, or make new findings, by reason of the additional evidence so taken, and he shall file such modified or new findings, and his recommendations, if any, for the modification or setting aside of his original regulation, with the return of such additional evidence.

“(3) Upon the filing of the petition referred to in paragraph (1) of this subsection, the court shall have jurisdiction to review the regulation in accordance with chapter 7 of title 5 of the United States Code and to grant appropriate relief as provided in such chapter.

“(4) The judgment of the court affirming or setting aside, in whole or in part, any such regulation of the Secretary shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28 of the United States Code.

62 Stat. 928.

“(5) Any action instituted under this subsection shall survive, notwithstanding any change in the person occupying the office of Secretary or any vacancy in such office.

“(6) The remedies provided for in this subsection shall be in addition to and not in substitution for any other remedies provided by law.

“(e) A certified copy of the transcript of the record and adminis-

trative proceedings under this section shall be furnished by the Secretary to any interested party at his request, and payment of the costs thereof, and shall be admissible in any criminal, exclusion of imports, or other proceeding arising under or in respect of this subpart, irrespective of whether proceedings with respect to the regulation have previously been initiated or become final under this section.

“(f) (1) (A) The Secretary shall establish a Technical Electronic Product Radiation Safety Standards Committee (hereafter in this subpart referred to as the ‘Committee’) which he shall consult before prescribing any standard under this section. The Committee shall be appointed by the Secretary, after consultation with public and private agencies concerned with the technical aspect of electronic product radiation safety, and shall be composed of fifteen members each of whom shall be technically qualified by training and experience in one or more fields of science or engineering applicable to electronic product radiation safety, as follows:

Technical Electronic Product Radiation Safety Standards Committee.

“(i) Five members shall be selected from governmental agencies, including State and Federal Governments;

“(ii) Five members shall be selected from the affected industries after consultation with industry representatives; and

“(iii) Five members shall be selected from the general public, of which at least one shall be a representative of organized labor.

“(B) The Committee may propose electronic product radiation safety standards to the Secretary for his consideration. All proceedings of the Committee shall be recorded and the record of each such proceeding shall be available for public inspection.

Safety standards, proposal.

“(2) Members of the Committee who are not officers or employees of the United States shall, while attending meetings or conferences of the Committee or otherwise engaged in the business of the Committee, be entitled to receive compensation at a rate fixed by the Secretary, but not exceeding \$100 per diem (including traveltime), and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized in section 5703 of title 5 of the United States Code for persons in the Government service employed intermittently. Payments under this subsection shall not render members of the Committee officers or employees of the United States for any purpose.

Compensation.

“(g) The Secretary shall review and evaluate on a continuing basis testing programs carried out by industry to assure the adequacy of safeguards against hazardous electronic product radiation and to assure that electronic products comply with standards prescribed under this section.

Review and evaluation.

“(h) Every manufacturer of an electronic product to which is applicable a standard in effect under this section shall furnish to the distributor or dealer at the time of delivery of such product, in the form of a label or tag permanently affixed to such product or in such manner as approved by the Secretary, the certification that such product conforms to all applicable standards under this section. Such certification shall be based upon a test, in accordance with such standard, of the individual article to which it is attached or upon a testing program which is in accord with good manufacturing practice and which has not been disapproved by the Secretary (in such manner as he shall prescribe by regulation) on the grounds that it does not assure the adequacy of safeguards against hazardous electronic product radiation or that it does not assure that electronic products comply with the standards prescribed under this section.

Product certification.

80 Stat. 499.



“NOTIFICATION OF DEFECTS IN, AND REPAIR OR REPLACEMENT OF,  
ELECTRONIC PRODUCTS

“SEC. 359. (a) (1) Every manufacturer of electronic products who discovers that an electronic product produced, assembled, or imported by him has a defect which relates to the safety of use of such product by reason of the emission of electronic product radiation, or that an electronic product produced, assembled, or imported by him on or after the effective date of an applicable standard prescribed pursuant to section 358 fails to comply with such standard, shall immediately notify the Secretary of such defect or failure to comply if such product has left the place of manufacture and shall (except as authorized by paragraph (2)) with reasonable promptness furnish notification of such defect or failure to the persons (where known to the manufacturer) specified in subsection (b) of this section.

“(2) If, in the opinion of such manufacturer, the defect or failure to comply is not such as to create a significant risk of injury, including genetic injury, to any person, he may, at the time of giving notice to the Secretary of such defect or failure to comply, apply to the Secretary for an exemption from the requirement of notice to the persons specified in subsection (b). If such application states reasonable grounds for such exemption, the Secretary shall afford such manufacturer an opportunity to present his views and evidence in support of the application, the burden of proof being on the manufacturer. If, after such presentation, the Secretary is satisfied that such defect or failure to comply is not such as to create a significant risk of injury, including genetic injury, to any person, he shall exempt such manufacturer from the requirement of notice to the persons specified in subsection (b) of this section and from the requirements of repair or replacement imposed by subsection (f) of this section.

“(b) The notification (other than to the Secretary) required by paragraph (1) of subsection (a) of this section shall be accomplished—

“(1) by certified mail to the first purchaser of such product for purposes other than resale, and to any subsequent transferee of such product; and

“(2) by certified mail or other more expeditious means to the dealers or distributors of such manufacturer to whom such product was delivered.

“(c) The notifications required by paragraph (1) of subsection (a) of this section shall contain a clear description of such defect or failure to comply with an applicable standard, an evaluation of the hazard reasonably related to such defect or failure to comply, and a statement of the measures to be taken to repair such defect. In the case of a notification to a person referred to in subsection (b) of this section, the notification shall also advise the person of his rights under subsection (f) of this section.

“(d) Every manufacturer of electronic products shall furnish to the Secretary a true or representative copy of all notices, bulletins, and other communications to the dealers or distributors of such manufacturer or to purchasers (or subsequent transferees) of electronic products of such manufacturer regarding any such defect in such product or any such failure to comply with a standard applicable to such product. The Secretary shall disclose to the public so much of the information contained in such notice or other information obtained under section 360A as he deems will assist in carrying out the purposes of this subpart, but he shall not disclose any information which contains or relates to a trade secret or other matter referred to in section 1905 of title 18 of the United States Code unless he determines that it is necessary to carry out the purposes of this subpart.

“(e) If through testing, inspection, investigation, or research carried out pursuant to this subpart, or examination of reports submitted pursuant to section 360A, or otherwise, the Secretary determines that any electronic product—

“(1) does not comply with an applicable standard prescribed pursuant to section 358; or

“(2) contains a defect which relates to the safety of use of such product by reason of the emission of electronic product radiation; he shall immediately notify the manufacturer of such product of such defect or failure to comply. The notice shall contain the findings of the Secretary and shall include all information upon which the findings are based. The Secretary shall afford such manufacturer an opportunity to present his views and evidence in support thereof, to establish that there is no failure of compliance or that the alleged defect does not exist or does not relate to safety of use of the product by reason of the emission of such radiation hazard. If after such presentation by the manufacturer the Secretary determines that such product does not comply with an applicable standard prescribed pursuant to section 358, or that it contains a defect which relates to the safety of use of such product by reason of the emission of electronic product radiation, the Secretary shall direct the manufacturer to furnish the notification specified in subsection (c) of this section to the persons specified in paragraphs (1) and (2) of subsection (b) of this section (where known to the manufacturer), unless the manufacturer has applied for an exemption from the requirement of such notification on the ground specified in paragraph (2) of subsection (a) and the Secretary is satisfied that such noncompliance or defect is not such as to create a significant risk of injury, including genetic injury, to any person.

“(f) If any electronic product is found under subsection (a) or (e) to fail to comply with an applicable standard prescribed under this subpart or to have a defect which relates to the safety of use of such product, and the notification specified in subsection (c) is required to be furnished on account of such failure or defect, the manufacturer of such product shall (1) without charge, bring such product into conformity with such standard or remedy such defect and provide reimbursement for any expenses for transportation of such product incurred in connection with having such product brought into conformity or having such defect remedied, (2) replace such product with a like or equivalent product which complies with each applicable standard prescribed under this subpart and which has no defect relating to the safety of its use, or (3) make a refund of the cost of such product. The manufacturer shall take the action required by this subsection in such manner, and with respect to such persons, as the Secretary by regulations shall prescribe.

“(g) This section shall not apply to any electronic product that was manufactured before the date of the enactment of this subpart.

#### “IMPORTS

“SEC. 360. (a) Any electronic product offered for importation into the United States which fails to comply with an applicable standard prescribed under this subpart, or to which is not affixed a certification in the form of a label or tag in conformity with section 358(h) shall be refused admission into the United States. The Secretary of the Treasury shall deliver to the Secretary of Health, Education, and Welfare, upon the latter's request, samples of electronic products which are being imported or offered for import into the United States, giving notice thereof to the owner or consignee, who may have a hearing before the Secretary of Health, Education, and Welfare. If

it appears from an examination of such samples or otherwise that any electronic product fails to comply with applicable standards prescribed pursuant to section 358, then, unless subsection (b) of this section applies and is complied with, (1) such electronic product shall be refused admission, and (2) the Secretary of the Treasury shall cause the destruction of such electronic product unless such article is exported, under regulations prescribed by the Secretary of the Treasury, within 90 days after the date of notice of refusal of admission or within such additional time as may be permitted by such regulations.

“(b) If it appears to the Secretary of Health, Education, and Welfare that any electronic product refused admission pursuant to subsection (a) of this section can be brought into compliance with applicable standards prescribed pursuant to section 358, final determination as to admission of such electronic product may be deferred upon filing of timely written application by the owner or consignee and the execution by him of a good and sufficient bond providing for the payment of such liquidated damages in the event of default as the Secretary of Health, Education, and Welfare may by regulation prescribe. If such application is filed and such bond is executed the Secretary of Health, Education, and Welfare may, in accordance with rules prescribed by him, permit the applicant to perform such operations with respect to such electronic product as may be specified in the notice of permission.

“(c) All expenses (including travel, per diem or subsistence, and salaries of officers or employees of the United States) in connection with the destruction provided for in subsection (a) of this section and the supervision of operations provided for in subsection (b) of this section, and all expenses in connection with the storage, carriage, or labor with respect to any electronic product refused admission pursuant to subsection (a) of this section, shall be paid by the owner or consignee, and, in event of default, shall constitute a lien against any future importations made by such owner or consignee.

“(d) It shall be the duty of every manufacturer offering an electronic product for importation into the United States to designate in writing an agent upon whom service of all administrative and judicial processes, notices, orders, decisions, and requirements may be made for and on behalf of said manufacturer, and to file such designation with the Secretary, which designation may from time to time be changed by like writing, similarly filed. Service of all administrative and judicial processes, notices, orders, decisions, and requirements may be made upon said manufacturer by service upon such designated agent at his office or usual place of residence with like effect as if made personally upon said manufacturer, and in default of such designation of such agent, service of process, notice, order, requirement, or decision in any proceeding before the Secretary or in any judicial proceeding for enforcement of this subpart or any standards prescribed pursuant to this subpart may be made by posting such process, notice, order, requirement, or decision in the Office of the Secretary or in a place designated by him by regulation.

“SEC. 360A. (a) If the Secretary finds for good cause that the methods, tests, or programs related to electronic product radiation safety in a particular factory, warehouse, or establishment in which electronic products are manufactured or held, may not be adequate or reliable, officers or employees duly designated by the Secretary, upon presenting appropriate credentials and a written notice to the owner, operator, or agent in charge, are thereafter authorized (1) to enter, at reasonable times, any area in such factory, warehouse, or establishment in which the manufacturer's tests (or testing programs) required by section 358(h) are carried out, and (2) to in-

spect, at reasonable times and within reasonable limits and in a reasonable manner, the facilities and procedures within such area which are related to electronic product radiation safety. Each such inspection shall be commenced and completed with reasonable promptness. In addition to other grounds upon which good cause may be found for purposes of this subsection, good cause will be considered to exist in any case where the manufacturer has introduced into commerce any electronic product which does not comply with an applicable standard prescribed under this subpart and with respect to which no exemption from the notification requirements has been granted by the Secretary under section 359(a)(2) or 359(e).

“(b) Every manufacturer of electronic products shall establish and maintain such records (including testing records), make such reports, and provide such information, as the Secretary may reasonably require to enable him to determine whether such manufacturer has acted or is acting in compliance with this subpart and standards prescribed pursuant to this subpart and shall, upon request of an officer or employee duly designated by the Secretary, permit such officer or employee to inspect appropriate books, papers, records, and documents relevant to determining whether such manufacturer has acted or is acting in compliance with standards prescribed pursuant to this subpart. Records.

“(c) Every manufacturer of electronic products shall provide to the Secretary such performance data and other technical data related to safety as may be required to carry out the purposes of this subpart. The Secretary is authorized to require the manufacturer to give such notification of such performance and technical data at the time of original purchase to the ultimate purchaser of the electronic product, as he determines necessary to carry out the purposes of this subpart after consulting with the affected industry.

“(d) Accident and investigation reports made under this subpart by any officer, employee, or agent of the Secretary shall be available for use in any civil, criminal, or other judicial proceeding arising out of such accident. Any such officer, employee, or agent may be required to testify in such proceedings as to the facts developed in such investigations. Any such report shall be made available to the public in a manner which need not identify individuals. All reports on research projects, demonstration projects, and other related activities shall be public information.

“(e) The Secretary or his representative shall not disclose any information reported to or otherwise obtained by him, pursuant to subsection (a) or (b) of this section, which concerns any information which contains or relates to a trade secret or other matter referred to in section 1905 of title 18 of the United States Code, except that such information may be disclosed to other officers or employees of the Department and of other agencies concerned with carrying out this subpart or when relevant in any proceeding under this subpart. Nothing in this section shall authorize the withholding of information by the Secretary, or by any officers or employees under his control, from the duly authorized committees of the Congress.

62 Stat. 791.

“(f) The Secretary may by regulation (1) require dealers and distributors of electronic products, to which there are applicable standards prescribed under this subpart and the retail prices of which is not less than \$50, to furnish manufacturers of such products such information as may be necessary to identify and locate, for purposes of section 359, the first purchasers of such products for purposes other than resale, and (2) require manufacturers to preserve such information.

Any regulation establishing a requirement pursuant to clause (1) of the preceding sentence shall (A) authorize such dealers and distributors to elect, in lieu of immediately furnishing such information to the manufacturer, to hold and preserve such information until advised by the manufacturer or Secretary that such information is needed by the manufacturer for purposes of section 359, and (B) provide that the dealer or distributor shall, upon making such election, give prompt notice of such election (together with information identifying the notifier and the product) to the manufacturer and shall, when advised by the manufacturer or Secretary, of the need therefor for the purposes of section 359, immediately furnish the manufacturer with the required information. If a dealer or distributor discontinues the dealing in or distribution of electronic products, he shall turn the information over to the manufacturer. Any manufacturer receiving information pursuant to this subsection concerning first purchasers of products for purposes other than resale shall treat it as confidential and may use it only if necessary for the purpose of notifying persons pursuant to section 359 (a).

#### “PROHIBITED ACTS

“SEC. 360B. (a) It shall be unlawful—

“(1) for any manufacturer to introduce, or to deliver for introduction, into commerce, or to import into the United States, any electronic product which does not comply with an applicable standard prescribed pursuant to section 358;

“(2) for any person to fail to furnish any notification or other material or information required by section 359 or 360A; or to fail to comply with the requirements of section 359 (f);

“(3) for any person to fail or to refuse to establish or maintain records required by this subpart or to permit access by the Secretary or any of his duly authorized representatives to, or the copying of, such records, or to permit entry or inspection, as required by or pursuant to section 360A;

“(4) for any person to fail or to refuse to make any report required pursuant to section 360A (b) or to furnish or preserve any information required pursuant to section 360A (f); or

“(5) for any person (A) to fail to issue a certification as required by section 358 (h), or (B) to issue such a certification when such certification is not based upon a test or testing program meeting the requirements of section 358 (h) or when the issuer, in the exercise of due care, would have reason to know that such certification is false or misleading in a material respect.

“(b) The Secretary may exempt any electronic product, or class thereof, from all or part of subsection (a), upon such conditions as he may find necessary to protect the public health or welfare, for the purpose of research, investigations, studies, demonstrations, or training, or for reasons of national security.

#### “ENFORCEMENT

“SEC. 360C. (a) The district courts of the United States shall have jurisdiction, for cause shown, to restrain violations of section 360B and to restrain dealers and distributors of electronic products from selling or otherwise disposing of electronic products which do not conform to an applicable standard prescribed pursuant to section 358

except when such products are disposed of by returning them to the distributor or manufacturer from whom they were obtained. The district courts of the United States shall also have jurisdiction in accordance with section 1355 of title 28 of the United States Code to enforce the provisions of subsection (b) of this section.

“(b)(1) Any person who violates section 360B shall be subject to a civil penalty of not more than \$1,000. For purposes of this subsection, any such violation shall with respect to each electronic product involved, or with respect to each act or omission made unlawful by section 360B, constitute a separate violation, except that the maximum civil penalty imposed on any person under this subsection for any related series of violations shall not exceed \$300,000.

“(2) Any such civil penalty may on application be remitted or mitigated by the Secretary. In determining the amount of such penalty, or whether it should be remitted or mitigated and in what amount, the appropriateness of such penalty to the size of the business of the person charged and the gravity of the violation shall be considered. The amount of such penalty, when finally determined, may be deducted from any sums owing by the United States to the person charged.

“(c) Actions under subsections (a) and (b) of this section may be brought in the district court of the United States for the district wherein any act or omission or transaction constituting the violation occurred, or in such court for the district where the defendant is found or transacts business, and process in such cases may be served in any other district of which the defendant is an inhabitant or wherever the defendant may be found.

“(d) Nothing in this subpart shall be construed as requiring the Secretary to report for the institution of proceedings minor violations of this subpart whenever he believes that the public interest will be adequately served by a suitable written notice or warning.

“(e) Except as provided in the first sentence of section 360F, compliance with this subpart or any regulations issued thereunder shall not relieve any person from liability at common law or under statutory law.

“(f) The remedies provided for in this subpart shall be in addition to and not in substitution for any other remedies provided by law.

#### “ANNUAL REPORT

“Sec. 360D. (a) The Secretary shall prepare and submit to the President for transmittal to the Congress on or before April 1 of each year a comprehensive report on the administration of this subpart for the preceding calendar year. Such report shall include—

Report to Congress.

“(1) a thorough appraisal (including statistical analyses, estimates, and long-term projections) of the incidence of biological injury and effects, including genetic effects, to the population resulting from exposure to electronic product radiation, with a breakdown, insofar as practicable, among the various sources of such radiation;

“(2) a list of Federal electronic product radiation control standards prescribed or in effect in such year, with identification of standards newly prescribed during such year;

“(3) an evaluation of the degree of observance of applicable standards, including a list of enforcement actions, court deci-

sions, and compromises of alleged violations by location and company name;

“(4) a summary of outstanding problems confronting the administration of this subpart in order of priority;

“(5) an analysis and evaluation of research activities completed as a result of Government and private sponsorship, and technological progress for safety achieved during such year;

“(6) a list, with a brief statement of the issues, of completed or pending judicial actions under this subpart;

“(7) the extent to which technical information was disseminated to the scientific, commercial, and labor community and consumer-oriented information was made available to the public; and

“(8) the extent of cooperation between Government officials and representatives of industry and other interested parties in the implementation of this subpart including a log or summary of meetings held between Government officials and representatives of industry and other interested parties.

“(b) The report required by subsection (a) shall contain such recommendations for additional legislation as the Secretary deems necessary to promote cooperation among the several States in the improvement of electronic product radiation control and to strengthen the national electronic product radiation control program.

#### “FEDERAL-STATE COOPERATION

“SEC. 360E. The Secretary is authorized (1) to accept from State and local authorities engaged in activities related to health or safety or consumer protection, on a reimbursable basis or otherwise, any assistance in the administration and enforcement of this subpart which he may request and which they may be able and willing to provide and, if so agreed, may pay in advance or otherwise for the reasonable cost of such assistance, and (2) he may, for the purpose of conducting examinations, investigations, and inspections, commission any officer or employee of any such authority as an officer of the Department.

#### “EFFECT ON STATE STANDARDS

“SEC. 360F. Whenever any standard prescribed pursuant to section 358 with respect to an aspect of performance of an electronic product is in effect, no State or political subdivision of a State shall have any authority either to establish, or to continue in effect, any standard which is applicable to the same aspect of performance of such product and which is not identical to the Federal standard. Nothing in this subpart shall be construed to prevent the Federal Government or the government of any State or political subdivision thereof from establishing a requirement with respect to emission of radiation from electronic products procured for its own use if such requirement imposes a more restrictive standard than that required to comply with the otherwise applicable Federal standard.”

#### DEFINITIONS

SEC. 3. As used in the amendments made by section 2 of this Act, except when otherwise specified, the term “Secretary” means the Secretary of Health, Education, and Welfare, and the term “Department” means the Department of Health, Education, and Welfare.

## NONINTERFERENCE WITH OTHER FEDERAL AGENCIES

SEC. 4. The amendments made by section 2 of this Act shall not be construed as superseding or limiting the functions, under any other provision of law, of any officer or agency of the United States.

Approved October 18, 1968.

## Public Law 90-603

## AN ACT

October 18, 1968  
[S. 4158]

To amend title 37, United States Code, to clarify the conditions under which physicians and dentists who extend their service on active duty in a uniformed service may be paid continuation pay.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That section 311 (a) (2) of title 37, United States Code, is amended to read as follows: “(2) has completed his initial active duty obligation; and”.

SEC. 2. The amendment made by this Act becomes effective as of January 1, 1968.

Approved October 18, 1968.

Armed Forces,  
Physicians and  
dentists, duty ex-  
tension.  
81 Stat. 651.  
Effective date.

## Public Law 90-604

## AN ACT

October 18, 1968  
[H. R. 5785]

To authorize the disposal of magnesium from the national stockpile.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the Administrator of General Services is hereby authorized to dispose of, by negotiation or otherwise, approximately fifty-five thousand short tons of magnesium now held in the national stockpile established pursuant to the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 90-98h). Such disposition may be made without regard to the provisions of section 3 of the Strategic and Critical Materials Stock Piling Act: *Provided,* That the time and method of disposition shall be fixed with due regard to the protection of the United States against avoidable loss and the protection of producers, processors, and consumers against avoidable disruption of their usual markets.

Approved October 18, 1968.

Magnesium,  
Disposal.

60 Stat. 596.  
50 USC 98 note.

## Public Law 90-605

## AN ACT

October 18, 1968  
[H. R. 18248]

To amend the Act of August 9, 1955, relating to certain common carrier operations in the District of Columbia.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That section 2 of the Act entitled “An Act to provide for the regulation of fares for the transportation of schoolchildren in the District of Columbia”, approved August 9, 1955 (D.C. Code, sec. 44-214a), is amended to read as follows:

“SEC. 2. In the case of any common carrier required to furnish transportation to schoolchildren at a reduced fare under this Act, the Wash-

D.C.  
Schoolchildren,  
fares.

76 Stat. 113.



## Exhibit K: Biological Effects of Tower Proximity

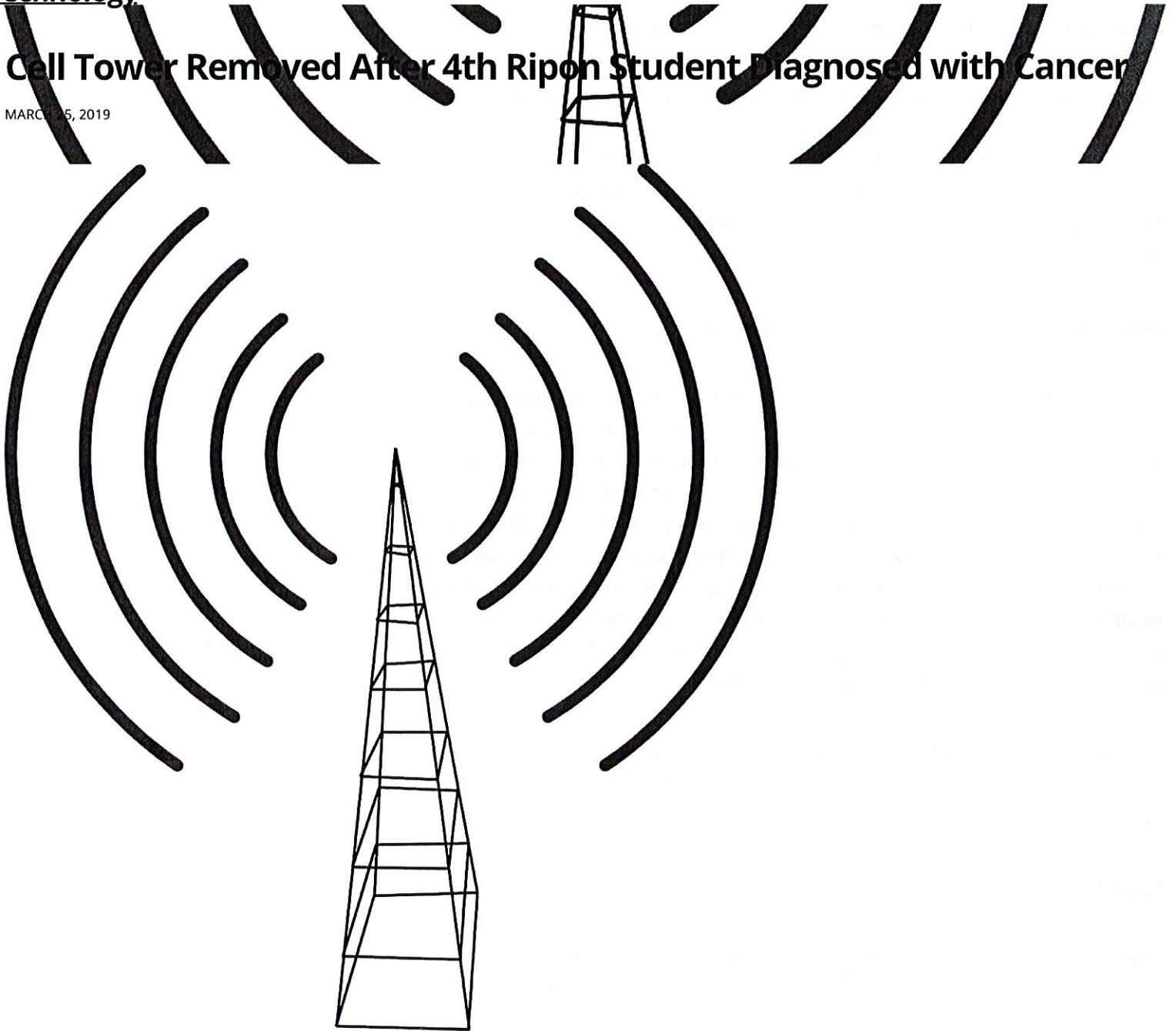


PHYSICIANS  
FOR  
SAFE  
TECHNOLOGY

## Physicians for Safe Technology

# Cell Tower Removed After 4th Ripon Student Diagnosed with Cancer

MARCH 15, 2019



After 4 students and 3 teachers were diagnosed with cancer within a 3-year period, Sprint finally removed a cell tower at a Ripon, California school. While it is exceedingly difficult to identify the cause of a **cancer cluster**, parents and students in the San Joaquin County school are convinced there is one and it is caused by the campus cell tower. They are not only protesting but several have abandoned the small school which now features 4 rare cancers in students -2 brain tumors, one kidney cancer and one liver cancer. Investigations of not only cell tower radiation

but also **water quality** have been initiated. After 200 parents stormed the school board meeting, school officials were prompted to ask for the cell tower to be removed at the K-8 school. Sprint has agreed to do so.

*Update 07/23/22*

### **Parents Opposed the Cell Tower Before it was Placed**

The cell tower was placed at Weston Elementary School 10 years ago and a group of parents opposed the cell tower construction before it was erected, citing health concerns. According to news reports, they have another 15 years left on the 25-year lease with a rental fee of about \$2,000 per month paid to the school. A **GO PETITION** to have the cell tower removed was initiated in 2017 after 2 children in the school developed cancer.

### **Radiofrequency Levels Are Within FCC Guidelines**

Officials have maintained that the radiofrequency radiation levels were below the federal standard when measured and they are in compliance. Questions remain about the safety of cell towers, as well as the current standards, which many experts state are not protective of human or environmental health. Current FCC regulations for human exposure are based on heating of tissues and short term exposures, not harmful biological effects demonstrated at much lower levels in the scientific literature. The FCC reevaluation standards were **successfully challenged in 2021** in a DC court but no action has been taken. In addition the European Parliamentary Assembly called for precaution and reduction of RFR, especially for children, in 2011 with passage of **Resolution 1815**.

Even though the cause of any particular cancer may never be determined is there scientific evidence that removing the cell tower and taking this precautionary approach is warranted?

### **Schools Average Radiation Levels Rather Than Considering Peaks**

Schools such as those in **New Zealand** and **Los Angeles** have measured RF radiation and stay the levels are far below government guidelines, however, they average the RF levels, and have not considered peak "modulated" spiked pulsations, which are the **most** biologically harmful. Consider that a peak pulse can be like a bullet piercing a cell membrane. The duration may be short but the tissue injury is great and lasting. These long term effects of constant pulsed (modulated) radio frequency radiation on brain cells, our reproductive systems and metabolism have not been considered and averaging veils the true harm.

**LAUSD Radiofrequency Evaluation Reports: Office of Environmental Health and Safety. All Reports.** Use of Wireless Devices in Education all Settings- They state the levels are 10,000 lower than limits (averaged) [here](#).

### **Is Cell Tower Radiation a Toxin?**

Cell towers as well as Wi-Fi create continuous emissions of pulsed microwave radiation. Microwave ovens which use similar radiofrequencies at higher power cook by heat, however, at lower power adverse biological effects have been demonstrated in scientific studies without heating or burning the tissue. One mechanism of toxicity that has been clearly shown is oxidative damage, seen in 93 of 100 scientific studies ([Yakymenko 2016](#)). Oxidation is a common mechanism of toxicity found in pollutants such as pesticides, industrial chemicals, cigarette smoke and heavy metals. These pollutants can trigger inflammation and damage to cell structures such as DNA, mutations of which can be a precursor to cancer.

Wireless radiation passes through and is absorbed in the body and organs and thus, like chemical toxins which are ingested, inhaled or absorbed through the skin, they can potentially cause broad harm to cellular structures and internal organs. Damage from RFR is cumulative, as it is with ionizing radiation and other toxic exposures. The longer the exposure the more harm. Toxic exposures can act separately or in combination synergistically to cause illness or cancer (co-carcinogenesis). Effects are non-linear and due to individual variation in genetics, nutrition and health.

### **Cell Towers and Cancer**

In 2011, the WHO International Agency for Research on Cancer (IARC) listed radiofrequency radiation (RFR) as a Class 2B Possible Carcinogen. Scientists have argued that considering the current level of published research on brain tumors and radio frequency radiation that RFR **should be listed** as a Class 1 Known Carcinogen. The National Toxicology Program ([NTP Study on Cancer and Cell Phones](#)) announced their findings in 2018, after 10 years of research on RFR, and showed DNA damage (a precursor to cancer) and clear evidence of carcinogenicity of wireless radiation emissions. They demonstrated in carefully conducted studies a significant increase in tumors of internal organs including the heart, brain and adrenal medulla (which sits just above the kidney). Another worrisome finding from the [NTP](#) was the development of aging of the heart in the exposed cohort.

### **Cell Towers as a Co-Carcinogen**

Scientific evidence indicates that exposure to multiple environmental pollutants, especially over time can increase the risk of diseases such as cancer. Some toxins exert their effects in certain windows of development. Some are tumor initiators and some can be tumor promoters. It is a [complex area](#) of scientific endeavor.

Combined toxic exposures are unfortunately incompletely studied as it would take geologic time to examine the 80,000 plus chemicals in varying assortments along with radiofrequency radiation. Dr. Ross Adey concluded, however, in a 1990 [review](#), that based on a new understanding of the biology of cancer at a cellular level and available studies, that non-ionizing electromagnetic fields “acting alone or in conjunction with chemicals that occur as environmental pollutants may constitute a health hazard”.

Considering at least one shared mechanism of toxicity between chemicals and RFR, cellular membrane effects and the many studies performed this should be, as Dr. Adey states, “a matter of urgency” in terms of research and public policy.

### **Stem Cells and Cancer : Effects Seen Below Current Safety Standards**

**Markova**(2010) Looked at effects of low power microwaves from mobile phones on human derived stem cells, which are widely dispersed in the body. He found that DNA repair foci in mesenchymal stem were significantly altered at levels 40 times less than current guidelines. He highlighted that mesenchymal stem cells are at higher risk of malignant transformation than differentiated cells. The author concludes, *“Because almost all organs and tissues possess stem cells and because stem cells are more active in children, the possible relationship of chronic MW exposure and various types of tumors and leukemia—especially in children—should be investigated.”*

### **Distance from Cell Towers and Cancer Rates**

A study by **Wolf and Wolf (2004)** showed a significant increase in cancer in those living within 350 feet of a cell tower. **Eger (2004)** found an increase in new cancer cases within a 10-year period if residents lived within 400 meters of a cell tower. They also found that within 5 years of operation of the transmitting base station the relative risk of cancer development tripled in residents near the cell tower compared to resident living outside the area. **Dode (2011)** performed a 10-year study (1996-2006) examining the distance from cell towers and cancer clusters. He and his colleagues found a significant increase in cancers in those living within 500 meters of the cell tower. They noted, “The largest density power was 40.78  $\mu\text{W}/\text{cm}^2$ , and the smallest was 0.04  $\mu\text{W}/\text{cm}^2$ .” The current guidelines are about 1000  $\mu\text{W}/\text{cm}^2$ .

They conclude, ***“Measured values stay below Brazilian Federal Law limits that are the same of ICNIRP. The human exposure pattern guidelines are inadequate. More restrictive limits must be adopted urgently.”***

It is notable that **Lurchi** in 2015 found an increase in liver tumors, lung tumors and lymphomas in mice at low to moderate exposure at (0.04 and 0.4 W/kg SAR), and well below exposure limits for the users of mobile phones.

## Cell Towers, Illness and Cognitive Decline in Students

Cancer is not the only worry with cell towers. The majority of studies on cell towers internationally have shown adverse effects with cell towers in close proximity to residences and schools. Findings include symptoms of dizziness, headaches, nausea, memory loss, and fatigue in those living within about 400 feet of a cell tower. These are symptoms of “microwave illness” reported by **NASA** in servicemen working on radar systems. A recent study conducted over 2 years looking at the effects of cell towers near two schools by **Meo (2018)** demonstrated cognitive dysfunction in students closest to the higher power cell tower.

## Cell Towers and Blood Cell Abnormalities

There is also a recent study showing blood abnormalities in those living nearest to cell towers (**Zothansiana 2017**). DNA and lipid abnormalities were seen along with reduction in internal antioxidants which provide protection from pollutants.

## Cell Towers, Wi Fi, Laptops and Cell Phones All Emit RFR

Cell towers are not the only source of potentially harmful radiofrequency radiation in schools. Most schools today have converted from the original wired classrooms to wireless with the use of wireless white boards, wireless computers and with assignments on the cell phones. Wi Fi routers and wireless electronics in the classroom bring this radiation in much closer proximity to students and levels can be higher than near cell towers. The increase in RF exposure in children is a huge concern with cell towers adding to RF cumulative exposures. Schools in Germany, Austria and France as well as many private schools in the U.S. **have gone back to hardwired** connections for health reasons and to reduce exposure.

## On the Clear Evidence of the Risks to Children from Non-Ionizing Radio Frequency Radiation:

Professor Tom Butler of the University of Cork, Ireland has just **published** a concise review article about the use of Wi fi and Digital devices in schools. He notes with regards to the proliferation of digital technology in schools that, “The fact that they might pose a real risk to the health and well-being of users and particularly children was never considered.”

- ***“Breaking News: Cell phone story by New York Times reporter William Broad violated truth and accuracy code of Press Council of Ireland”.*** Professor Tom Butler and The Irish Times. Feb 6, 2020.  
<https://www.irishtimes.com/opinion/professor-tom-butler-and-the-irish-times-1.4164003>. Press Ombudsman Report- <https://www.pressombudsman.ie>
- **On the Clear Evidence of the Risks to Children from Non-Ionizing Radio Frequency Radiation: The Case of Digital Technologies in the Home,**

**Classroom and Society.** Professor Tom Butler. University of Cork, Ireland.

<https://www.radiationresearch.org/wp-content/uploads/2019/10/On-the-Clear-Evidence-of-the-Risks-to-Children-from-Smartphone-and-WiFi-Radio-Frequency-Radiation-Final-2019.pdf>

## **Questioning the Safety of Our Children's Exposure to Wireless Radiation in Schools**

A recent forum was held March 25, 2019 in Shrewsbury, Massachusetts titled "**Questioning the Safety of Our Children's Exposure to Wireless Radiation in Schools**". The entire program can be seen [here](#). The slides from the presentation are available [here](#). The Worcester, Massachusetts news station [reported](#) on the conference.

## **Cell Towers Banned in the Los Angeles Unified School District and Removed in Chatsworth**

The Los Angeles City Board of Education **banned cell towers** on schools in 2000, citing health and safety concerns of the students. The Los Angeles Unified School District (LAUSD Resolution states:

- **Whereas**, Recent studies suggest there is evidence that radio-frequency radiation may produce "health effects" at "very low field" intensities;
- **Whereas**, The scientific community and most health officials agree that more research is needed to provide a definitive answer as to the effects of extremely low frequency electromagnetic and radio- frequency radiation on our health and recommend the prudent avoidance of equipment which generates non-ionizing radiation; now, therefore, be it
- **Resolved**, further, That the Board of Education oppose the future placement of cellular telecommunications towers on or immediately adjacent to school property currently owned by the District until appropriate regulatory standards are adopted.

In **Chatsworth, on Human Rights Day**, parents protested the reinstallation of a cell tower on their local school and occupied the field until the mast was removed. Angry parents took a stand and were ready to camp out on the cell tower site. The school governing board and principal were contacted and according to the **report** some were not aware of the reinstallation. Parents watched and waited as heavy machinery slowly lowered the mast and drove it away.

## **Does Your Child's School Have a Cell Tower on Its Property? NBC has the Chicago Map**

When parents contacted NBC investigates in 2016 about cell towers located on a smokestack at Sutherland Elementary school in Chicago they did indeed investigate the matter. Filing 409 separate Freedom of Information Acts requests to separate schools they learned that 139 of 367 schools responding did have cell towers, most of which are elementary schools.

They have developed a [map](#) of cell towers on public schools along with the school district, address and the fee the school gets to have the cell tower. Read the article [here](#).

### **Chicago Suburb Mount Greenwood has Cancer Cluster in Children**

The University of Chicago is studying a [cancer cluster](#) in Mount Greenwood area where more than a dozen children have been diagnosed with cancer. Four of the children who passed away between 2015 to 2017 lived close to each other and attended the same school. Parents are concerned with lead or other water contaminants but have not yet looked at possible cell tower proximity.

### **Fort Collins Colorado High School with Cancer Cluster**

In recent years 6 students from the Rocky Mountain High School in Fort Collins have developed cancer. Students are working together to find a cure for cancer rather than asking the critical question of the cause, i.e. cell towers (or other toxic exposures) on or near schools. The March 4, 2019 article by CBS Denver is [here](#).

### **College Cancer Clusters? University of California San Diego (UCSD)**

In 2016 the UCSD Graduate Student Association passed a [resolution](#) after the eleventh woman who worked the literature building was diagnosed with breast cancer. The [report of a cancer cluster](#) was initiated in 2008 after 9 people who had worked in the Literature Building were diagnosed with breast cancer. Eight of these women were diagnosed between 2000-2006. Three additional women reported breast cancer from 2006 to 2016.

A review and report by Dr. Cedric Garland, Adjunct Professor in UC San Diego's Family and Preventive Medicine Department was performed examining the safety of the Literature Building. He found the elevator equipment on the first floor of the building was a source of electromagnetic fields and concluded that "there is a possibility of a mild to modest increase in risk of breast cancer associated with a very small area of the first floor building in very close proximity to the electrical and elevator equipment rooms." it is noted that he reviewed and eliminated other toxic carcinogenic exposures including mold, toxins, chemicals, radioisotopes, and domestic water.



An in depth **report** was done by epidemiologist Dr. Leeka Kheifets who noted that the observed number of cases of a specific type of cancer significantly exceeds the number expected but she did not identify and excess environmental exposure of EMF that would be carcinogenic considering average exposures. She noted how exceeding difficult it is to identify a cancer cluster. A large epidemiologic study would be needed and this was never done.

### **UCSD Installed High Performance Wireless Network (HPWREN)....Cell Tower**

A High Performance Wireless Research and Education Network (**HPWREN**) cell tower operating at 2.4 GHz was placed in 2000 at the **San Diego Supercomputer Center** located on campus at the Eleanor Roosevelt Campus., east end. The tower has a 72 mile WLAN range, enough to reach San Clemente and **connects** with Mount Launa Observatory as well as surrounding Native American Reservations. After reports the radiation levels were in violation of FCC power limits the FCC **ordered a reduction** in power emissions from the UCSD Supercomputer site in 2002. It is not located adjacent to the Literature Building but is in line sight of it.

### **Children Sick After 4G/5G Small Cell Installation in Sacramento**

Children Sick After 4G/5G Small Cell Installation Sacramento City C...



Aaron and Hannah McMahon testify in Sacramento, California, alongside their daughter, who has suffered health symptoms since a new 4G/5G cell tower was placed just several feet from their daughter's bedroom window. An August 2019 **article** about health concerns in Sacramento tries to explain 5G technology but fails to mention that most all of the "small cell" towers will have 4G technology well before 5G frequency wavelengths are in place. In addition, 5th Generation wireless technology now comprises low bands (cell phone) and mid band (Wi Fi) regions, which are similar to cell phone and Wi Fi frequency ranges that are already used and found to be biologically active and harmful. 5G, we now know, uses a **multi-tier**

**5G strategy** with a broad mix of radiofrequencies, not just small millimeter wavelengths in the high frequency band. The article goes on to quote UC Davis radiology expert, Jerrod Bushberg, PhD., who argues that this non-ionizing radiation is safe as there is not enough energy to remove electrons from atoms. This ignores a plethora of scientific evidence that the mechanism of toxicity is more like chemicals, causing **oxidation** of cellular structures and **membrane alterations**.

An **article** in Environmental Research (Pearce 2019), recommends at least a 500 foot buffer to reduce insurance liability for health effects from cell tower radiation. Other studies **referenced** recommend at least 1500 feet to reduce risk of cancer.

### **Cell Towers and the Telecommunications Act**

Cell towers are regulated by the 1996 Telecommunications Act (TCA). Schools may ban cell towers however municipalities may not according to the TCA. The law states that a cell tower cannot be denied on the basis of health in Section 704 as follows, “**(iv) No State or local government or instrumentality thereof may regulate 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 Collaborative for High Performing Schools**

The Collaborative for High Performing Schools developed criteria and policies for schools to improve student performance through improved building design. This includes Best Practices for Low EMF which was adopted in 2014. This well researched and well written policy includes recommendations to reduce wireless radiofrequency radiation in schools as follows:

- Provide wired Local Area Networks (LAN) throughout the school
- Disable wireless transmitters on all Wi Fi enabled devices
- Laptops and notebooks have ethernet port and switch to disable wireless
- Keep computers and tablets away from the body
- Hardwire all phones
- Prohibit cell phones and other personal wireless devices in the classroom
- Prohibit cell phone towers and base stations on school buildings or property
- Run conduits for future fiberoptic connections

### **California Brain Tumor Association Agrees with Cell Tower Removal**

Ellie Marks, Founder and Executive Director of the California Brain Tumor Association, agrees with the decision to move the cell tower away from the school. She states, “Our reading of the situation is that science has established enough proof of harm that regulations should be updated now and appropriate warnings

issued. The “jury” actually is back and it has given its guilty verdict.” She feels the tower “should be turned off for now even before it is moved, to protect the students, teachers, staff and administrators.” Adding a ban on further cell towers within the school district, as the LAUSD has done, seems prudent as well. In an update as of March 28, 2019, Sprint has stated that they have turned the campus cell tower off.

### **Side Notes on Water Quality, Decaffeinated Instant Coffee and the Nestle Corporation in Ripon 4/7/19**

Water quality concerns are also now being examined in Ripon with a chilling historical perspective on long term corporate pollution. The Nestle corporation manufactured caffeinated and decaffeinated instant coffee on Industrial Avenue in Ripon, California from 1957 until the plant closed in 1994. In order to extract the caffeine, they used a solvent Trichorethylene (TCE) From 1957 to 1970. TCE was **banned** in the 70's as an extraction solvent in the food industry due to its toxicity. Later from 1970 to 1986 the company used Methylene Chloride, an EPA **probable carcinogen**, to remove caffeine.

**TCE in Well Water:** In 1986 TCE was found to have leached into wells in Ripon either from storage drums above ground or from city wastewater pipes. Nestle then eliminated the toxic chemicals and spent \$6.5 million to remove some of the contaminated water. In 2002, a **court awarded** Ripon \$1 million from the Nestle corporation to filter contaminated groundwater and to drill additional wells. Unfortunately, the plume of TCE and other chemicals has migrated to deeper aquifers (Item 11 on Agenda). Monitoring of groundwater is done every 1 to 3 years as the plume can wander and the TCE cannot evaporate in soil or in underground aquifers. Nestle continues in remediation with Ripon, stating in a December 2016 Ripon City Council meeting they will install a new system to pump the contaminated groundwater then send it back to the former Nestle facility for recharge into the aquifer (Item 4A).

**TCE is a Known Carcinogen.** The U.S. National Toxicology Program lists TCE as a known carcinogen and it is associated with liver cancer, kidney cancer and malignant lymphoma. TCE is still a component of paints, adhesives, lubricants, pesticides, electronic equipment, furniture and found in higher concentrations near industrial sites, landfills and sewage treatment plants. Studies have shown that much of the TCE exposure is not just from drinking water but more from taking showers with contaminated water with significant inhalation of the chemical.

**TCE in 10% of the Population.** Biomonitoring studies such as The Third National Health and Nutrition Examination Survey (NHANES III) found that about 10% of the population has detectable blood levels of TCE. TCE is also broken down to another potent carcinogen, vinyl chloride. It is notable that a famous book and subsequent movie called “A Civil Action”, was based on the the 1982 trial of Anne Anderson et

al.v. W.R. Grace & Co. et al whereby 2 municipal wells were contaminated with high levels of TCE from 3 industrial companies. 7 children and one adult contracted leukemia. The landmark case ended in a mistrial and settlement.

**Methyl Chloride is Ozone Depleting Toxin.** March 2019 the U.S.

EPA banned Methylene Chloride (aka Dichloromethane) in consumer paint products due to a number of fatalities from acute exposures. Methylene chloride (dichloromethane) is still used in industrial industrial paint strippers and many other products, including decaffeinated coffee and is an increasing contributor to atmospheric ozone depletion.

### **Are the Cell Towers the Main Risk or an Additive Risk for Cancer?**

The question remains that with all other chemical exposures being equal and the presence of TCE in the water for decades, is the presence of the campus cell tower the tipping point for children's health at Weston Elementary? Cumulative risk assessments for a specific disease performed to evaluate additive and synergistic exposures are time consuming and difficult to prove. Precaution is warranted. Removal of the cell tower is a good call.

## **New Danish Legal Compendium of Health and Environmental Effects of 5G**

The Danish Institute for Public Health and the Council for Health-Safe Telecommunications has prepared legal document related to the broad harm from 5G as well as other wireless technologies. They state, *"The legal opinion is based on the rules of law in the European Convention on Human Rights, the UN Convention on the Rights of the Child, the EU directive on the conservation of natural habitats and of wild fauna and flora, the EU directive on the conservation of wild birds, on the precautionary principle as well as on the Bern- and Bonn-conventions on the protection of animals and plants."*

The Compendium can be found and downloaded here [.5G Danish legal opinion Jensen 2019](#)

### **Note: The Small Cell Antenna Are the Same Antennas as on the Macro Towers**

At a Sonoma Planning Commission meeting September 12, 2019, Lee Afflerbach, a consultant from Columbia Telecommunications Corporation was explaining the difference between the radiation from a small cell tower versus a macro tower to the planing commission. He states in the [video](#) at time 3:10:24 "To get around the capacity issue — it's because so many people are [wirelessly] streaming video and other services like that, they [Verizon] have to have multiple sources for this. That's why we have the smaller cells because **each [small] cell is capable of almost putting out the same energy as one macro cell.**" Another commissioner asked the question below. The answer at time 3:13:22 is below.

Q: "Is the higher frequency 4G always deployed by small cell orgs it deployed by typical macro tower?"

A: Mr. Lee Afflerbach answered, "Typically the older Macro cells are being reconfigured to add the new spectrum and are being filled in with this technology... one of the things the industry is doing is beefing up 4G...I have reviewed, **my staff has probably reviewed several hundred of these small cells the last year, year and a half, and they are all 4G equivalent. The radios that they are using are the exact same radios that are up on the macro towers. It's not a different technology...the same boxes as on macro towers.** I see them all the time." The small cell towers are not a different technology, or for regular cell phone service, but for streaming videos, and at the same power as regular macro towers but much closer proximity to people. Instead of 100 feet in the air these "small cells" can be just several feet from a bedroom window.

## News Headlines: Cell Towers Near U.S. Schools and Homes

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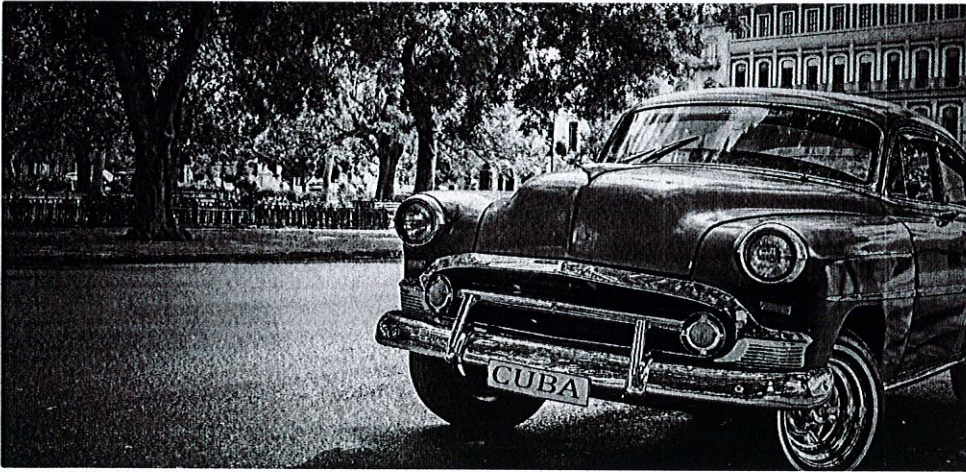
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Exhibit K1: Cuban Diplomats Likely Hit by Microwave Weapons -New York Times can be found at link <https://mdsafetech.org/2018/09/04/cuban-diplomats-likely-hit-by-microwave-weapons-new-york-times-reports/>

## Cuban Diplomats Likely Hit by Microwave Weapons, New York Times Reports

SEPTEMBER 4, 2018



Disturbing and sometimes incapacitating neurologic symptoms have been experienced by American and Canadian diplomats in Cuba since late 2015 and in American diplomats in China more recently this year. A New York Times front page [article](#) Sept 1, 2018, eerily describes what researchers and physicians have discovered to be the likely cause in this international story that reads like a spy novel. Initially it was felt that these strange and varied symptoms could be due to sonic attacks as people reported hearing clicking and high pitched chirping, as well as feeling symptoms including headaches, nausea and dizziness, during the episodes, with long term effects of hearing loss, ringing in the ears and fatigue. Experts are now pointing to focused beams of targeted man-made pulsed microwave radiation penetrating the walls of the homes and hotels of the 21 diplomats studied. The long term effects are consistent with known cellular and oxidative damage from radiofrequency radiation, as Dr. Beatrice Golomb highlights in her recent [article](#) to be published Sept 15, 2018.

### Microwave Hearing

Allan Frey, a biologist at Cornell University was the first to discover and publish [papers](#) on "microwave hearing" while working on radar equipment at General Electric's Advanced Electronics Center. In the 1970's. This sonic hearing was found at levels below what are considered today safe exposure standards. Frey was later invited to the Soviet Union to discuss these effects at the Soviet Academy of Sciences. Not long after, our Defense Intelligence Agency warned that the soviets were developing a new class of psychophysical microwave weapons which could be beamed from afar and temporarily or permanently harm the nervous system. Our own Air Force scientists found they could beam comprehensible speech into a person's brain, and were given a patent in 2002 for this technology destined for "psychological warfare".

In late 2016, following a breakdown in Cuba and U.S. relations, U.S. diplomats and their families began experiencing unusual high pitched sounds in their hotel rooms and homes. This was accompanied by incapacitating headaches, fatigue, and insomnia. The medical team that examined them published a peer reviewed [article](#) in the Journal of the American Medical Association in March 2018 describing their symptoms. They state, "retrospective case series, persistent cognitive, vestibular, and oculomotor dysfunction, as well as sleep impairment and headaches, were observed among US government personnel in Havana, Cuba, associated with reports of directional audible and/or sensory phenomena of unclear origin. These individuals appeared to have sustained injury to widespread brain networks without an associated history of head trauma."

Exhibit K2:

- A. Independent Peer-Reviewed Scientific Studies on Bio-effects from Electromagnet Studies (51 pages of summaries) can be found at [www.CT4RT.com](http://www.CT4RT.com)
- B. Biologic Effects and Health Hazards of Microwave Radiation (1974) and
- C. Biological Effects of Electromagnetic Radiation (Radiowaves and Microwaves) Eurasian Communist Countries (U) 1976

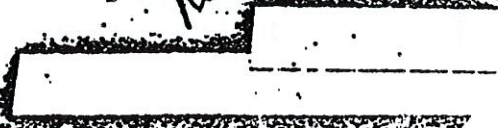
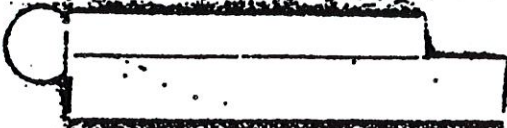


**DEFENSE INTELLIGENCE AGENCY**

**BIOLOGICAL EFFECTS OF  
ELECTROMAGNETIC RADIATION  
(RADIOWAVES AND MICROWAVES)  
EURASIAN COMMUNIST COUNTRIES (U)**

**PREPARED BY U.S. ARMY  
MEDICAL INTELLIGENCE AND  
INFORMATION AGENCY  
OFFICE OF THE SURGEON GENERAL**

*Reliable Report*



**BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION  
(RADIOWAVES AND MICROWAVES) -  
EURASIAN COMMUNIST COUNTRIES (U)**

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EXEMPTION CATEGORY 1,2,3  
DECLASSIFIED UPON NOTIFICATION BY THE ORIGINATOR**

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DST-1810S-074-76  
March 1976

PREFACE

The purpose of this review is to provide information necessary to assess human vulnerability, protection materials, and methods applicable to military operations. The study provides an insight on the current research capabilities of these countries. Information on trends is presented when feasible and supportable.

The study discusses the biological effects of electromagnetic radiation in the radio- and microwave ranges (up through 300,000 megahertz). It is not within the realm of this study to provide detailed descriptions of every laboratory experiment. Such data have been purposely omitted in favor of an analytical approach. An attempt has been made to identify the principal areas of research and to discuss the significance of experimental results.

The information reported in this study has been drawn from scientific, medical, and military journals, intelligence reports, magazines, news items, books, and other publications. The information cut-off date for this study was 1 October 1975.

(U) Constructive criticism, comments or suggested changes are encouraged, and should be forwarded to the Defense Intelligence Agency (ATTN: DT-1A), Washington, DC 20301.



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March 1976

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SUMMARY

(U) The thermal effects of electromagnetic radiation have been reasonably well established through experimental investigation. The nonthermal effects, however, remain a controversial issue between scientists in the West and in the Eurasian Communist countries. The difficulties encountered in conclusively demonstrating the nonthermal effects of electromagnetic exposure are likely responsible for differences in exposure standards; some standards are based largely on the demonstrable thermal effects, while others allow for possible nonthermal effects at subthermal intensities.

(U) The Eurasian Communist countries are actively involved in evaluation of the biological significance of radiowaves and microwaves. Most of the research being conducted involves animals or in vitro evaluations, but active programs of a retrospective nature designed to elucidate the effects on humans are also being conducted. The major systems, system components, or processes currently under study include the blood, the cardiovascular system, cells, the central nervous system, the digestive system, the glandular system, metabolic effects, and the reproductive and the visual systems. Other aspects of exposure are also being studied, but the limited number of reports uncovered makes assessment of the importance placed upon this research impossible. These lesser reported research areas include nonthermal effects, immunological studies, and use of radiowaves for functional control of organ systems.

No unusual devices or measures for protection from radiowave exposure were noted, but a continued stress upon personnel protection in occupational situations was apparent. Here, protective goggles and clothing are recommended when working in regions of microwave radiation. Although some differences in standards remain between the various Communist countries and between military and civilian standards, the Communist standards remain much more stringent than those of the West. An exception to this may be Poland where a recent relaxation of their standards has occurred. This is the first significant shift of an East European country away from the standard first set by the USSR in 1958.

If the more advanced nations of the West are strict in the enforcement of stringent exposure standards, there could be unfavorable effects on industrial output and military functions. The Eurasian Communist countries could, on the other hand, give lip service to strict standards, but allow their military to operate without restriction and thereby gain the advantage in electronic warfare techniques and the development of antipersonnel applications.

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# Biologic Effects and Health Hazards of Microwave Radiation

Proceedings of an International  
Symposium

Warsaw, 15-18 October, 1973

*Sponsored by:*

*The World Health Organization,  
The US Department of Health, Education and Welfare, and  
The Scientific Council to the Minister of Health and  
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WHO - BIOLOGIC EFFECTS & HEALTH HAZARDS OF MICROWAVE RADIATION  
1974

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## Preface

The International Symposium on the Biologic Effects and Health Hazards of Microwave Radiation was held during the four-day period October 15—18, 1973, at a conference center in Jadwisin, near Warsaw, under the joint sponsorship of the Governments of Poland and the United States of America and of the World Health Organization.

The Government of the Polish People's Republic, through the Scientific Council to the Minister of Health and Social Welfare, designated the Institute of Biostructure of the Warsaw Medical Academy to be the collaborating institution; the Government of the United States of America was represented by the Department of Health, Education, and Welfare, Food and Drug Administration, Bureau of Radiological Health, and the World Health Organization was involved through its Environmental Health Programme.

Special assistance in the arrangements for the Symposium was given by Dr. B. D. Blood, International Health Attaché, United States Mission to the International Organizations in Geneva.

The Symposium was the culmination of a two-year exploratory and planning effort to bring together, for the first time, scientists and scientific program directors from the nations known to have research interests in the effects on health of exposure to microwave radiation. This was believed to be important for several reasons: the expanding use of microwave power for an increasing variety of industrial, military, medical, commercial and household purposes; the capacity of microwave radiation to produce demonstrable biologic effects; and the unresolved differences in reported biologic effects and in the exposure and safety standards derived from them.

The objectives of the meeting were: to exchange current information about the biologic and health effects of microwave radiation and recommend further needed research and approaches, to encourage international cooperation in relevant research, to promote the evaluation of scientific information needed for setting safe exposure standards, to consider ways of achieving international dosimetric standardization, and to publish and disseminate the Proceedings.

It was thought that the purposes of the Symposium would best be served by a relatively small group of participants given ample opportunity for formal and informal discussion. Regrettably this excluded participation by many experts connected with research programs concerned with the microwave range of the electromagnetic spectrum (defined for the symposium as 300—300,000 MHz).

Sixty participants from the following countries and from WHO attended: Canada, Czechoslovakia, Denmark, the Federal Republic of Germany, France, the German Democratic Republic, Japan, Poland, Sweden, the Union of Soviet Socialist Republics, the United Kingdom and the United States of America.

Three specialists from Argentina, Czechoslovakia and Israel who were invited to attend the Symposium had to cancel their scheduled participation.

Representatives of several international organizations also attended the Symposium. The participants were scientists and program directors from various institutions, universities, agencies and laboratories concerned with the physical, biomedical and behavioral sciences.

English and Russian were the official languages of the Symposium and a simultaneous

translation service was provided. The many multilingual participants and members of the staff provided translations from French and other languages.

Thirty-nine scientific papers were presented in six sessions: A. General Effects of Microwave Radiation, B. Influence of Microwave Radiation on the Nervous System and Behavior, C. Effects of Microwave Radiation on the Cellular and Molecular Level, D. Measurements of Microwave Radiation, E. Occupational Exposure and Public Health Aspects of Microwave Radiation, and F. Future Research Needs, Conclusions and Recommendations. Abstracts of the papers, prepared in advance by the authors, were translated in Poland and distributed to the participants in English and Russian versions before the start of the Symposium.

The spirit of the Symposium was one of goodwill, enthusiasm and genuine interest in interchange with scientists of other countries. The setting of the meeting and housing of participants in a suburban conference center greatly contributed to the success of the Symposium. For many participants it was their first opportunity to meet investigators known to them only through the literature. On several occasions, impromptu meetings by groups of participants were arranged in the evening or early morning to discuss topics of interest not on the program. It was notable that plans were initiated during the conference for some collaborative work and exchange of information and instrumentation by participants of different scientific persuasions.

The controversial issues that have characterized the field for the past two to three decades relate to: (1) the mechanisms of interaction of microwave radiation with biologic systems, (2) the levels and circumstances of exposure capable of producing biologic effects, and (3) the nature and significance of biologic effects.

Differences in approaches and findings, principally between countries in western Europe and North America and those in eastern Europe, have led to considerable variance in microwave exposure criteria and standards. For example, the usual recommended maximum power density level for occupational exposure in the United States is 10 milliwatts per square centimeter, based mainly on the risk of cataract formation from heating effects, in contrast to the standard for full-time work exposure in the Soviet Union of 10 microwatts per square centimeter, based on low intensity non-thermal biologic effects. It was not the intention of this conference to consider discrepancies in standards and compliance, however, but rather to open the way for scientists to present and discuss studies and interpretations that have been the underpinnings of different safety standards and to propose ways of advancing knowledge and understanding in this relatively new field. While differences could not be fully explored, and certainly not resolved, progress was made in clarifying concurrences, delineating areas of disagreement, and identifying needed research, communication and program development.

The session chairmen prepared summaries of their respective sessions and the rapporteurs prepared summaries of the discussion. The session summaries provide specific suggestions for further work in each of the subject areas. The final recommendations reflect the sense of the Symposium and give emphasis to international considerations and broad questions of research and development. In areas where improved international collaboration is needed to advance knowledge and understanding, emphasis was given to the general ways in which this may be accomplished, to the value of an international program in the field, to the critical need for standardization of measurement techniques and dosimetry, to the importance of universal nomenclature and definitions of physical units, and to the usefulness of operational definitions of microwave intensities for comparable approaches to biologic questions. With regard to further research, the need for multidisciplinary studies of interactions and risks was stressed, especially with respect to cumulative and delayed effects, low intensity effects and possible threshold values.



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RL-TR-94-53  
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June 1994



**RADIOFREQUENCY/MICROWAVE**  
**RADIATION BIOLOGICAL EFFECTS AND**  
**SAFETY STANDARDS: A REVIEW**

Scott M. Bolen

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13. ABSTRACT (Maximum 200 words) The study of human exposure to radiofrequency/microwave (RF/MW) radiation has been the subject of widespread investigation and analysis. It is known that electromagnetic radiation has a biological effect on human tissue. An attempt has been made by researchers to quantify the effects of radiation exposure on the human body and to set guidelines for safe exposure levels. A review of the pertinent findings is presented along with the American National Standards Institute (ANSI) recommended safety standard (C95.1-1982) and the United States Air Force permissible exposure limit for RF/MW radiation (AFOSH Standard 161-9, 12 Feb 87). An overview of research conducted in the Soviet Union and Eastern Europe is also included in this report.					
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# Radiofrequency/Microwave Radiation Biological Effects and Safety Standards: A Review

Scott M. Bolen  
June 1988

## Abstract

The study of human exposure to radiofrequency/microwave radiation has been the subject of widespread investigation and analysis. It is known that electromagnetic radiation has a biological effect on human tissue. An attempt has been made by researchers to quantify the effects of radiation on the human body and to set guidelines for safe exposure levels. A review of the pertinent findings is presented along with the American National Standards Institute (ANSI) recommended safety standard (C95.1-1982) and the United States Air Force permissible exposure limit for RF/MW radiation (AFOSH Standard 161-9, 12 February 1987). An overview of research that was conducted in the Soviet Union and Eastern Europe is also included in this report.

## I. INTRODUCTION

In 1956, the Department of Defense (DOD) directed the Armed Forces to investigate the biological effects of exposure to radiofrequency/microwave (RF/MW) radiation. The Army, Navy, and Air Force Departments commissioned a Tri-Service Program under the supervision of the Air Force to meet the DOD directive [14], [15]. The Rome Air Development Center and the Air Research and Development Headquarters were ultimately given responsibility to manage the program. On July 15-16, 1957 the first of four Tri-Service Conferences was held to discuss the effects of RF/MW radiation. These conferences were the first major effort put forth by the scientific community to explore the biological effects of exposure to RF/MW radiation [14]. Since then, researchers have discovered a number of biological dysfunctions that can occur in living organisms. Exposure of the human body to RF/MW radiation has many biological implications. The effects range from innocuous sensations of warmth to serious physiological damage to the eye [1], [2], [5], [6], [8], [15]. There is also evidence that RF/MW radiation can cause cancer [8].

The absorption of RF/MW radiated energy causes biological reactions to occur in the tissue of the human body. In order to determine safe exposure levels and to understand the effect of RF/MW radiation it is necessary to know the absorption characteristics of the human tissue. The National Institute for Occupational Safety and Health (NIOSH) [8] has reported several physical properties that account for energy absorption in biological materials. Factors which govern energy absorption include: (1) strength of the external electromagnetic (EM) field, 2) frequency of the RF/MW source, 3) the degree of hydration of the tissue, and 4) the physical dimensions, geometry, and orientation of the absorbing body with respect to the radiation EM field [8]. There is some disagreement among researchers in determining a specific measure for the dose of RF/MW radiation contracted by

biological materials. The most commonly accepted measure is the Specific Absorption Rate (SAR). The SAR is defined as the rate at which RF/MW radiated energy is imparted to the body - typically in units of watts per kilogram (W/Kg) [4]. The deposition of energy specified in terms of milliwatts per square centimeter (mW/cm<sup>2</sup>) over the irradiated surface is also widely accepted [9].

Based on the known absorption rates and the inherent biological effects of RF/MW radiated energy, researchers have put forth a number of standards regarding safe exposure levels. In some instances standards recommended by different examining authorities are in conflict. For example, the USAF Standard 161-9 (enacted 12 February 1987) allows for a permissible exposure level of 10 mW/cm<sup>2</sup> for persons working in restricted areas and 5 mW/cm<sup>2</sup> for persons working in unrestricted areas [10]. The ANSI guideline specifies a maximum safe exposure level of 5 mW/cm<sup>2</sup> over the whole-body area for anyone in contact with RF/MW radiation [9]. These differences reflect the way in which each examining authority has interpreted the available RF/MW radiation exposure data.

## II. BIOLOGICAL EFFECTS

Exposure to RF/MW radiation is known to have a biological effect on animals and humans. Damage to major organs, disruption of important biological processes, and the potential risk of cancer represent the dangers of RF/MW radiation to living organisms. Pulsed radiation appears to have the greatest impact on biological materials [8].

The response of biological materials to the absorption of thermal energy is the most perceptible effect of exposure to RF/MW radiation [7]. The energy emitted from an RF/MW source is absorbed by the human tissue primarily as heat. In this case, the radiated energy is disposed in the molecules of the tissue. Dipole molecules of water and protein are stimulated and will vibrate as energy is absorbed throughout the irradiated tissue area. Ionic conduction will also occur in the same area where the radiation is incident. It is from these two natural processes that radiant energy is converted into heat [11]. The thermal effect of continuous wave (CW) and pulsed radiation is considered to be the same [13].

Nonthermal responses can be less noticeable and are often more difficult to explain than thermal effects. These responses are related to the disturbances in the tissue not caused by heating. Electromagnetic fields can interact with the bioelectrical functions of the irradiated human tissue [8]. Research conducted in the Soviet Union and Eastern Europe suggests that the human body may be more sensitive to the nonthermal effects of RF/MW radiation [3].

There are many reported biological effects to humans and animals that are exposed to RF/MW radiation. A review of the important findings is given in the following:

### A. Heating Effect on the Skin

Most RF/MW radiation penetrates only to the outer surface of the body. This is especially true for RF/MW frequencies greater than 3 GHz where the likely depth of penetration is about 1-10 mm [3]. At frequencies above 10 GHz the absorption of energy will occur mostly at the outer skin surface. Since the thermal receptors of the body are contained primarily in this region, the perception of RF/MW radiation at these frequencies

Exhibit K3: Starter Bibliography with Clickable Links (Microwave, Bioeffects, 4G/5G, Cell Towers)

## Starter Bibliography with Clickable Links (Microwaves, Bioeffects, 4G/5G, Cell Towers)



- [1] **Army** (Friedman 2006, 20 pages): **Bioeffects of Selected Non-Lethal Weapons** <https://tinyurl.com/udbk8j>
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Review article by Prof. Moskowitz concluding that low level RF/MW radiation is an *immune suppressor*. <https://drive.google.com/file/d/1qKFfa-XOVsytpZh8VwVTEXmPq7jkw3nqr/view>
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## **Other Recommended Links and Presentations (Microwaves, Bioeffects, 4G/5G, Cell Towers)**

Sharon Goldberg, MD: Testimony at Michigan Legislature [14 min]: <https://www.youtube.com/watch?v=CK0AliMe-KA>

Paul Heroux, PhD: Testimony at Michigan Legislature [8 min]: [https://youtu.be/2JI7-9\\_FRyC](https://youtu.be/2JI7-9_FRyC)  
Department of Epidemiology, Biostatistics, and Occupational Health, Miguel University

Martin Blank, PhD. Columbia University, Physiology and Cellular Biophysics.

Public appeal regarding low-level microwave radiation: <https://vimeo.com/123468632>

Blank M, R Goodman. 2009 Electromagnetic fields stress living cells. *Pathophysiology*. 16:71-78 (2009)

Dr. Nicholas Gonzalez, MD. Renowned New York City Physician

Health Risks from Electromagnetic Fields. <https://vimeo.com/142196113>

Frank Clegg, ex-President of Microsoft Canada: Wireless Tech Forum Making Technology Safe [10 min]

<https://www.youtube.com/watch?v=S6BYIy7Fr1U>

Dr. Devra Davis, PhD. What Brain and Sperm Share and Why Care. TEDxJacksonHole [15 min]

[https://www.youtube.com/watch?v=Pm5Oc5s4\\_8M](https://www.youtube.com/watch?v=Pm5Oc5s4_8M)

Dr. Devra Davis, PhD (Nov. 19, 2019). 5G Health Effects: University of California San Francisco [40 min]

[https://www.youtube.com/watch?v=nmp\\_OTT05Tw](https://www.youtube.com/watch?v=nmp_OTT05Tw)

Health Effects of EMF Radiation – Prof. Olle Johansson, PhD (renowned expert in microwaves, biology, and medicine)

<https://youtu.be/IvN6zE6XNmM>

Dafna Tachover, Attorney and Founder of We Are The Evidence. Testifies in Opposition to 5G in MI [45 min].

<https://www.youtube.com/watch?v=e6JMjyXre3U>

Renowned Professor Martin Pall, PhD (Biochemistry, WSU) warning to NIH and CDC (2019):

<https://youtu.be/kBsUWbUB6PE>

City Council (Maui County, 2019): Overview of problems with 5G for laymen 11/6/19 [20 min]

<https://youtu.be/MeE7xLuff2k?t=504>

John Kitson (Candidate for MP in UK) at 5G UKIP Conference [25 min]

<https://youtu.be/8SyTaoyuMPQ>

Sharon Goldberg, MD: One-on-One Interview (health concerns + 5G). <https://youtu.be/p3mAUDrVIyM> [60 min]

A Rationale for **Biologically-based Public Exposure Standards** for Electromagnetic Fields.

<https://bioinitiative.org/>

**Scientific Research On Wireless Health Effects: Peer Reviewed Scientific Research On Wireless Radiation**

<https://ehtrust.org/science/>

<https://ehtrust.org/key-issues/cell-phoneswireless/5g-internet-everything/20-quick-facts-what-you-need-to-know-about-5g-wireless-and-small-cells/>

Physicians for Safe Technology: **Health Effects of Digital Technology**

<https://midsafetech.org/conversion-and-exposure-limits-emr-emf/>

5G: Compelling Evidence for 8 Distinct Types of Harm Caused by EMF Exposures and Mechanism that Causes Them

Martin L. Pall, PhD, Professor Emeritus of Biochemistry and Basic Medical Sciences, Washington State University

<https://www.ehtrust.org/wp-content/uploads/5g-emf-hazards-dr-martin-l.-pall-eu-emf2018-6-11us3.pdf>

Non-thermal Effects of Microwave EMFs <https://www.ehtrust.org/wp-content/uploads/142-Reviews-Pall-PhD.pdf>

Professor University College Cork (2019). **On Clear Evidence of the Risks to Children from Smartphone and WiFi**

Radio Frequency Radiation. <https://tinyurl.com/wwb4ymo>

Russell Witte, PhD (Prof of Medical Imaging, University of Arizona).

The **Body Electric and Microwave Radiation**. <https://www.youtube.com/watch?v=qN6CEs0krKM>

**5G Forum: Potential Health Effects of 5G** <https://youtu.be/o9Hv8ZK9bY>

Search Engine for microwave radiation studies (>35,000, most peer-reviewed): <https://www.emf-portal.org/en>

**5G in 5 Minutes:** <https://youtu.be/hKowG0XV50k>

Documentary: **5G Trojan Horse:** [https://www.bitchute.com/video/xJ07BhcM5\\_4/](https://www.bitchute.com/video/xJ07BhcM5_4/)

Documentary: **Generation Zapped:** <https://www.bitchute.com/video/CALVYQd9Gqq7/>

*Questions/Comments/Corrections?* Contact Russ Witte, PhD at [rwwitte@protonmail.com](mailto:rwwitte@protonmail.com)





Exhibit L: Zoning

## Article 7 – Miscellaneous Provisions

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6. Minimize the perception of diminution of adjoining property values due to the location of such devices

7. Review the electromagnetic radiation interference to receptor devices on adjoining properties to ensure consistency with the requirements of the Federal Communications Commission

8. Enable the Commission to find that the above purposes are met together with the requirements of Section 8.5 and this Section in approving any Special Permit or Site Plan Modification application

### B. Jurisdiction and Applicability

1. The Commission asserts jurisdiction over the siting, construction, and modification of any and all telecommunications towers and telecommunications equipment not designated as exclusive jurisdiction of the Connecticut Siting Council under the authority of 16-50g et seq. and as defined by CFR Title 47, Part 22, as amended.

2. If by any act of the Connecticut General Assembly or any other legislative body or rule-making entity any type of telecommunications tower or telecommunications equipment shall cease to be designated the exclusive jurisdiction of the Connecticut Siting Council, jurisdiction over the siting, design, construction, and modification of such tower or equipment shall henceforth be asserted by the Commission and governed under these Regulations.

### C. General Standards

In addition to the requirements for special permit outlined in Section 8.5, the following guidelines, standards, procedures, and considerations shall apply.

#### 1. Location Criteria:

a. Distance: Any tower should be constructed a minimum distance of one mile from any existing towers.

b. Lot Size and Setbacks: Any site should be the minimum lot size required for the zoning district in which it is located and should be of sufficient size to accommodate a setback from all adjoining property liens equal to the maximum height of the tower and all appendages plus 25 feet.

c. Scenic Ridge Lines: Antenna towers should not be sited on any property that may be designated as a scenic ridgeline by the Planning Commission pursuant to the Plan of Conservation and Development.

d. Co-Location: Antenna(s) should be located on existing towers where available. If no existing towers are available, antennas may be located

Exhibit M: Petition Opposing Tower

**Brookfield Connecticut Petition for Right to Freedom from Telecommunications Facility Construction, Radiation, and Deployment of Small Cell Telecommunication Facilities (sWTF)**

We the undersigned oppose, for factual and legal reasons, including the carrier's lack of need and right, the following: the placement, construction, modifications, and operations of any wireless facility at 60 Vale Road or any other location in Brookfield, Connecticut, based on:

- Increased exposure to wireless radiation 24x7 affecting our health and environment, especially children and pollinators. At this time, no agency in the State of Connecticut is monitoring the levels of pulsed modulated microwave radiation and wireless radio frequency radiation;
- 60 Vale Road proposed tower includes initially nine 5G antennas that will be deployed. Additional carriers with similar or stronger antennas (up to 26 or more) could be installed on this tower, which is less than 1/2 mile from another existing tower;
- According to antenasearch.com, Brookfield currently has 32 wireless telecommunications towers and 142 antennas within a 3.0-mile radius of 60 Vale Road;
- No government agency has conducted a high-level scientific evaluation of harmful biological effects of electromagnetic radiation pollution;
- More and more people are reporting serious health problems linked with exposure to wireless radiation;

Signature	Printed Name	E-Mail	Street Address	Zip
	JEAN POLZIN	jeanpolzin@icloud.com	16 Rutledge	
	Nadezhda Anikeev	nadezhda.anikeev@gmail.com	Jane Blvd 16 Oblique Rocks Rd	
	Heather Nimger	<del>haininger</del> hacdract7@gmail.com	11 Dairy Farm Dr.	
	Tara Clancy	clancy.tardatt@net	3 Onoke Dr.	
	Sabine Scherner	info@vacationsbysabine.com	12 Cedar Lane	
	Jodie Browne	brownej1@sbcglobal.net	16 Pinewood Snores	
	Patricia Bossio	Pattibossio@aol.com	Sherman 2 White Tail Lane, Brookfield	06764
	Joe Piscitelli	Joe.piscitelli@yahoo.com	11 Parkwood Dr	06804
	Alexis Presley	alexis.presley@gmail.com	78 N Mountain Rd.	
	Dan Allard	Dan.allard@ipowerb.com	78 N Mountain Rd	
	Briene Spada		11 Parkwood Drive	
	Julie Flood	julie@farmersandcooks.com		06777
	Jennifer Ramos-Marrero	mamabearsaves@gmail.com	27 Berkshire Dr	06804
	Stephen C. Herd	stephenherdinglen@jchs.com	21 Brookfield news	
	Joyce Buonaiuto	buonfu64@all.com	54 Indian Trail	
	Marisa Schenber	mardel100@sbcglobal.net	5 Mountain Rd Redden CT	0689
	Jeannette Rehm	j72robina@yahoo.com	13 Parkwood Dr.	

Signature	Printed Name	E-Mail	Street Address	Zip
<i>Joseph Palmer</i>	JOSEPH PALMER	joelalmer XLR8@GMAIL.COM	13 PARKWOOD DR	06804
<i>Yami Glez</i>	YAMI GLEZ	yamiglez@gmail.com	283 Candlewood Lake Rd.	06804
<i>Stephania</i>	Stephanie Stepmal	aga.stepmal083@gmail.com	33 Short Oak Dr	06804
<i>Erin Mariano</i>	Erin Mariano	erinwalrath@gmail.com	54 Hat Shop Hill Rd Bridgewater, Ct	06752
<i>Michael Patterson</i>	MICHAEL PATTERSON	Michael@Pattersongalleries.com	130 Willow St. Roxbury Ct.	06783
<i>Stephen Belida</i>	Stephen Belida	stephenbelida@gmail.com	62 Indian Trail	06804
<i>Jeanne Callahan</i>	Jeanne Callahan	jeanmrc@gmail.com	35 Indian Trail	06804
<i>Michael Kelley</i>	Mike K-	miketung16@gmail.com	Brookfield	
<i>Jessica Patterson</i>	JESSICA PATTERSON	jessykalox@hotmail.com	130 Weners Blvd ROXBURY	
<i>Mike Jean</i>	Mike Jean	1488@gmail.com	35 Indian Trail Brookfield Ct	
<i>Patricia Walrath</i>	Patricia Walrath	pekrwalrath@yahoo.com	110 Tower Rd Bridg	06804
<i>Linda Arment</i>	Linda M. Arment	mentida@aol.com	62 Indian Trail Brookfield	06804
<i>Marty Forcello</i>	Marty Forcello	mforcello2@cs.com	11 Diverse Rd	06804
<i>Susan L Zeiter</i>	Susan L Zeiter	szeiter2@gmail.com	8 Curtis Dr Sharon	06784

Exhibit N: Selectwoman Tara Carr Testimony

1           comments may be submitted within 30 days of this  
2           public hearing.

3           We will now call upon the First Selectwoman  
4           Carr to make a public statement followed by Paska  
5           Ann Nayden.

6           Tara Carr, First Selectman of the Town of  
7           Brookfield, please?

8   **FIRST SELECTWOMAN CARR:** Yes, sir. Can you hear me?

9   **THE HEARING OFFICER:** Yes, I can. Thank you.

10   **FIRST SELECTWOMAN CARR:** Thank you. Good evening. My  
11           name is Tara Carr, and I am the First Selectwoman  
12           of Brookfield, Connecticut.

13           This 60 Vail Road tower proposal is one that  
14           is rooted in providing a convenience, faster WiFi  
15           and increased personal cellphone coverage rather  
16           than necessity.

17           True, there are parts of Brookfield where  
18           cellphone coverage is degraded depending on  
19           service provider, but I am not in favor of a tower  
20           that will ultimately host technology that produces  
21           an additional overlay of various microwave  
22           radiation frequencies and wavelengths of pulsed  
23           modulated microwave radiation.

24           I cannot support this effort knowing there is  
25           no conclusive evidence suggesting that radiation

1 technology is not harmful to human health and  
2 wildlife, and therefore no evidence suggesting it  
3 would not be harmful to the residents of  
4 Brookfield and our environment.

5 Again, I cannot in good conscience support  
6 anything that could possibly harm our people, our  
7 animals, including bees, cows and horses, for  
8 example. As the effects of radiation are still  
9 under study I propose we wait for conclusive  
10 research as to the existence of or absence of  
11 harmful effects.

12 One of my primary responsibilities, which I  
13 consider my duty and my obligation, is to ensure  
14 the protection of life and property of our  
15 community. Just last year, the Federal  
16 Communications Commission, the FCC was challenged  
17 by the US Court of Appeals for the District of  
18 Columbia Circuit because there were no definitive  
19 answers on environmental harm and dangerous  
20 exposure to children. The FCC was remanded and  
21 they must address the points ordered by the Court.

22 I urge that we wait until we know with 100  
23 percent certainty that our residents of Brookfield  
24 will be safe.

25 Regarding Brookfield's emergency



1           communications system upgrade approved at our town  
2           referendum last spring, it is a fact that we need  
3           a structure to house our new equipment  
4           facilitating moving forward from a 1986 analog to  
5           a digital system, but our new equipment is not 3.5  
6           gigahertz power dependent.

7           To be very clear, we do need a structure for  
8           our new communication system, however I would  
9           definitely prefer our new equipment not be coupled  
10          with additional cellular antennas, or any other  
11          potentially harmful devices.

12          I do not support this tower because I do not  
13          support C-band frequency -- also referred to as 5G  
14          by the manufacturers, at any location in our town.  
15          We already have high microwave emissions  
16          throughout our town, which could have long-term  
17          implications from towers and small wireless  
18          telecommunications facilities and antennas in  
19          Brookfield as it is.

20          I urge you to consider carefully the  
21          overwhelming facts of substantial written evidence  
22          of possible harmful effects, and that there is no  
23          significant gap in service available to wireless  
24          tech/telecommunications services for the residents  
25          of our fine town.

1           The cell tower proposed is close to  
2 residential neighborhoods and daycare facilities,  
3 potentially threatening their health.

4           Ultimately we need to ask ourselves, is more  
5 connectivity really worth the potential chronic  
6 health problems possibly associated with powerful  
7 24/7 EMF radiation?

8           Thank you for the opportunity to comment  
9 tonight.

10 **THE HEARING OFFICER:** Thank you, First Selectwoman  
11 Carr.

12           Next up on our list is Paska Ann Nayden,  
13 followed by Gwen Arment.

14           Paska?

15 **PASKA ANN NAYDEN:** Good evening. Can you hear me okay?

16 **THE HEARING OFFICER:** Yes, I can. Thank you.

17 **PASKA ANN NAYDEN:** Excellent.

18 **THE HEARING OFFICER:** Good evening.

19 **PASKA ANN NAYDEN:** Thank you. Thank you, esteemed  
20 members of CT Siting and the industry  
21 representatives, and thank you for allowing me the  
22 time to express my findings.

23           My name is Paska Nayden from Easton,  
24 Connecticut.

25           I e-mailed a notarized affidavit to your

Exhibit O: Exhibit of Waiver

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

IN RE:

APPLICATION OF HOMELAND TOWERS, LLC AND  
NEW CINGULAR WIRELESS PCS, LLC d/b/a AT&T  
FOR A CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED FOR THE  
CONSTRUCTION, MAINTENANCE, AND  
OPERATION OF A TELECOMMUNICATIONS  
FACILITY AT 60 VALE ROAD, TOWN OF NEW  
BROOKFIELD, CONNECTICUT

DOCKET NO. 512

October 24, 2022

MOTION FOR A PROTECTIVE ORDER RELATED TO DISCLOSURE  
OF THE EXACT MONTHLY RENT IN THE LEASE AGREEMENT BETWEEN  
HOMELAND TOWERS, LLC AND LESSOR

In furtherance of the Council's ruling in Docket 366, the Applicant, Homeland Towers, LLC respectfully moves for a protective order related to the disclosure of the exact monthly rent in the respective lease agreement with 70 Vale Road, LLC, a Connecticut limited liability company ("Landlord"). The Siting Council's evaluation of the Applicant's proposed facility should not be based on the financial terms of Homeland's agreement with the Landlord as it does not relate to the criteria set forth in Section 16-50p of the Connecticut General Statutes. Additionally, Homeland considers the specific amount of rent and other financial terms that these parties agreed upon as proprietary corporate information. It is respectfully submitted that the specific monthly rent of the lease agreement between Homeland and the Landlord as well as other financial terms are not relevant to this proceeding and should be excluded from any public disclosure. In furtherance of this motion, portions of the lease with the monthly rent and other financial terms disclosed has been provided to the Executive Director as a password protected electronic document with a redacted copy of the leases attached to this motion and provided in furtherance of Section 16-50o(c) of the Connecticut General Statutes.



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Cuddy & Feder LLC  
Attorneys for the Applicants