

Regarding Mass Broadband Preferences and Dangers of Coaxial Cables

May 24, 2016

To the DTC Commissioner Karen Charles Peterson,

In the matter of whether Hardwick and Montague should be forced to utilize lesser quality, slower coaxial cable, there are other serious health dangers related to investment in infrastructure with emissions of non-ionizing radiation.

These health dangers have led numerous groups to form and state opposition to the use of wireless, but also to regular exposures to non-ionizing radiation. An attachment, rather dated, includes some information on a number of groups concerned about exposures. Most recently, over 200 scientists expert in this field petitioned the United Nations in an EMF Scientist Appeal to request attention to these serious threats, and revision of lax, out-dated standards.

The coaxial cable promoted by Comcast has regular, low-level emissions, whereas fiber optic cable has no detectable emissions. Additionally, cable companies often must patrol to insure that the coaxial cables are not emitting at higher levels, as wear and tear often leads to higher emissions. Fiber optic lasts years longer without these issues.

Within homes, installation problems and wear and tear can easily lead to higher emissions. Residents often lack the expertise to address these problems when the coaxial cables are on the home-owner's property. Even without the increased emissions from wear-and-tear, the regular, low-level emissions from cables are great enough to cause air-plane travel and telecommunications equipment interference. The article, "[Cell Phones and Cable Signals: Interference Can Happen](#)," written by Jason Codder of the National Institute of Standards and Technology (NIST), an agency of the [U.S. Department of Commerce](#), discusses research showing that coaxial cables experience significant interference from other wireless signals and can similarly cause interference. However, that article suggests interference occurs more due to residential changes to equipment installed by professionals. In other articles and professional papers, there is acceptance that coaxial cables leak.

The problem of coaxial cable leakage is significant enough to be a problem for airplane travel. "[UHF Signal and Ingress](#)", a technical paper written for the Society of Cable Telecommunications Engineers by Ron Hranac and Nick Segura, discusses methods of reducing "inevitable leakage" and how leakage is extending beyond aeronautical concerns into other frequencies that may lead to liability. The

recommendations for reducing, rather than ending, leakage that causes noticeable interference indicate the problem is complicated, and requires a dedicated workforce. On the website page RadioCommunications Agency EMC Awareness: Issues with broadband and cable data networks, commentary on coaxial cables includes this statement related to the apparent concerns of the German ministry on the airplane travel risks, "Cable TV networks use coaxial cables which spread for a great many miles. The frequency range of the video and data carried by the networks spreads over the entire HF spectrum. Even though the installation should use high-quality shielded cables and connectors the overall 'leakage' from such large networks as experienced at some height above the earth can be sufficient to cause interference problems with aircraft navigation systems and communications receivers."

Emissions are a part of coaxial cables used for internet access. In "[The Challenge of Increasing Broadband Capacity](#)," by Dale Hatfield at the University of Boulder, he writes, "While the shielded construction of the coaxial cable provides protection against external sources of noise and interference, the amplifiers that are required at regular intervals do produce some electrical noise and forms of self-interference (e.g., a form of interference known as "intermodulation") that must be dealt with by receivers at either end of the path." He also notes that coaxial cables limit the bandwidth allowed, which may be a future issue, "Along with increasing internal noise and interference, the amplifiers employed also limit the available bandwidth."

If the state taxpayers are helping to foot the bill to allow other towns to participate in online commerce, then it would seem necessary to support a system which is of lesser risk to airplane travel and also insure that interference with telecommunications is avoided. Further, there are a number of people in my organization who are increasingly sensitive to wireless signals. I know of one woman who cannot abide her Charter cable internet service, and so removed the service, and further keeps the telephone line disconnected except in cases of need. This is because these individuals have electromagnetic sensitivity and experience discomfort or serious illness around electromagnetic signals. For the individuals in my group that have this issue, the fiber optic cable is preferable, and prevents discriminatory access against people with sensitivities. These sensitivities are increasingly rapidly world wide, and thus present an economic concern as well as humanitarian. In Europe and Canada, the sensitivity is recognized as an impairment, with full humanitarian protections. The recognition of this impairment is an indicator that our exposures are too high.

Aside from the risks of increasing electromagnetic exposures, there are increasingly concerns about monopoly abuse from Comcast and similar organizations. The federal government indicated a desire to move away from the monopoly control of groups such as Comcast when it ruled against it's plea to merge with Time Warner, and again the FCC is now suggesting that the cable company's monopoly of cable boxes should

be ended and the code for these boxes become open source. The problems of allowing one giant company to provide all service are commonly known as part of anti-competition practices.

I find it strange that when coaxial cable is considered inferior, known to be inferior and quicker to degrade, that this is what Comcast offers. In Holyoke, Comcast offers services on our fiber optic cables. I cannot understand why Comcast would prefer an inferior quality cable, especially when it increases electromagnetic exposures.

However, Comcast appears to wish to intensify exposures. Comcast offered an additional public signal, which when I last checked allowed the residential homes to be used as a router for public access. This, when I last checked in 2014, had triggered concerns that this would reduce private home security. I heard this policy led to a lawsuit, but am unsure of whether it is ongoing or whether Comcast has changed its policy since then.

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