# Sub-Sea Fiber Optic Cable & Coastal Communities: An Opportunity for Healthy Growth

Over the next few years, the ***Connected Coast*** project plans to bring high-speed internet via fiber optic cable to 155 rural coastal BC communities, including yours. We now have the opportunity to have the fastest, most secure, and healthiest connectivity available. However, we must engage in well-informed and conscious decision-making for this to happen. It all comes down to this – how will we complete that "last mile" of our sub-sea information highway – and will we choose to make it a road that benefits citizens, wildlife, and the environment?

Let me take a moment to introduce myself: although generally known as a musician and educator, I also have a degree in Communications and have spent the past 2 years doing an independent analysis of emerging communications technologies and their impacts.

Salmon, orca, cedar… Those of us who live on the rural west coast understand how precious the web of life is, and why we need to protect and preserve that which makes life here different from life in a big city. Yes – the federal government has now made broadband internet an essential service, and yet non-industry affiliated research shows the best way to meet the *Canadian Radio and Television Commission'*s mandate to cross the digital divide and bring high-speed internet to rural Canada is to **create community owned fiber networks, with fiber optic cable connected directly to each premise**.

Wired fiber optics provides the most affordable, most efficient, and safest connectivity available – even faster than "5G". For a deeper understanding of why community owned fiber-to-the-premise (FTTP) is our best internet option, please see this short CBC piece and this significant February 2018 report: Re-Inventing Wires: The Future of Landlines and Networks by the *U.S. National Institute for Science, Law and Public Policy*.

Demonstrating vision and initiative, the *Strathcona Regional District* (SRD) is at the forefront of the ***Connected Coast*** project. Agenda minutes from an October 4, 2017 meeting of the SRD show that during their project's planning phase, they used the provincial government's Connectivity Handbook as a resource. This handbook tells us digital connectivity is essential to sustainability, health, safety, growth, and prosperity, but does not offer any data or research to support this statement, or any insight into how we might approach the installation of technology in life-enhancing ways. It neglects to cover **several key points that are instrumental to making balanced community communications infrastructure decisions.** I will address some of these key points below.

In June 2017, the SRD released this public discussion paper on building remote and rural community capacity through high-speed internet. Once again, issues that are crucial to fully understanding rural connectivity are not mentioned. One disturbing passage in the report suggests that the SRD should focus on "encouraging lSPs (Internet Service Providers) to utilize

the latest wireless technologies such as **Long-Term Evolution** (LTE), the standard offering the greatest capacity and the one being employed by all the major carriers."

**Translation: Long Term Evolution** (LTE) refers to a standard for smooth and efficient transition toward more advanced leading-edge technologies to increase the capacity and speed of wireless data networks. Currently this means 4G, but it soon will mean 5G millimeter wave technology. Over 230 scientists and physicians worldwide have signed an urgent global appeal calling for a halt to the 5G rollout due to its potentially serious health impacts.

**In brief:** As markets work, telecoms make more from personal mobile phone subscriptions than from high-speed fiber optic connections linked directly to our homes. If we turn the last leg of our rural connectivity project over to a private carrier, the corporation contracted, whose primary purpose is not public service but profit, will likely follow the industry trajectory of installing microcells - small cellular transmitters - on every block, without residents' consent or often knowledge. As technology evolves to 5G, the physics of its narrower millimeter waveforms will require even more of these small cell towers to be placed right by our homes.

## Key Points

There are many well-documented reasons why installing microcells all over our coast and paving the way for 5G will irrevocably change - and harm - our way of life. It is crucial that all coastal communities, including First Nations, are aware of these issues:

### 1) Physical, Emotional, Mental, and Environmental Well-being:

- Research done by social scientists and psychologists shows we are becoming increasingly addicted to and dependent on wireless devices, resulting in mounting depression and social isolation. Our youth are particularly vulnerable to digital addiction. Individuals in the know, including Silicon Valley tech developers, are limiting their family's internet use in order to boost productivity, build stronger relationships, and create a more meaningful life.

- *Facebook Inc*. has created woodworking and art studios at their "campus" to encourage employees to step away from screens. The *Centre for Humane Technology,* recently launched by founding developers of *Google*, *Facebook*, and *Mozilla*, warns, "Our society is being hijacked by technology." Although high-speed internet access has many benefits, those who understand and care about the impacts of technology agree: constant exposure to wireless radiofrequencies and unlimited access to wireless devices does not make us happier or healthier. Digital technology as currently designed monetizes our attention and zaps our DNA.

- A plethora of peer-reviewed scientific studies show how the radiofrequency radiation (RFR) produced by microcells and wireless devices negatively affects the well-being of all living things including people, wildlife, and plants.

- In 2017, Dr. Anthony Miller, physician-epidemiologist and Professor Emeritus at the *University of Toronto's Dalla Lana School of Public Health*, (*see his impressive bio below) announced that the science on wireless radiation has reached a consensus of risk and that:

  "The current research evidence in 2017 indicates that RFR *should be considered a probable human carcinogen* and the public should take cautionary steps to reduce exposures."

- Also in 2017, Physicians for Safe Technology announced: "It appears that we are at the same point of emerging science similar to early recognition of health impacts associated with tobacco, asbestos, coal dust, and lead."

- We must be particularly wary of untested 5G frequencies, which use phased array antennas that send radiation deep into our bodies, like bullets.

More wireless signals mean more frequent use of wireless devices. Current cell towers should be sufficient to fulfill our mobile needs, while wired fiber optics connected to each premise would provide lightning-fast home and office connectivity – perfect for web-based businesses, online education, and other economy-boosting and community-building 21st century applications.

## 2) Wildlife, Food Security and Pollinators

- A May 2017 study on honeybees done at *Simon Fraser University,* discovered honeybees have magnetic sensors in their abdomens and are highly sensitive to electromagnetic fields. This research adds to the peer-reviewed science suggesting that wireless frequencies along with other stressors are contributing to our plummeting pollinator population. Growing food is both livelihood and sustenance in many rural coastal communities, and 70% of all crops cultivated depend on healthy pollinators.

- Here is a sampling of other peer-reviewed research on the alarming effects of radiofrequency radiation on pollinators and other wildlife. This paper explains how the magnetite in adult sockeye salmon's skulls helps them detect the earth's natural magnetic fields to find their way home, in much the same way as honeybees do. This 2017 scientific review outlines how exposure to artificial electromagnetic frequencies

may interfere with dolphins' and whales innate "magnetic map" resulting in live strandings and a reduced ability to detect predators in some species.

### 3) Global Climate Change

- From talking toothbrushes to smart toilets, microcells pave the way for the Internet of Things (IoT) where everything will be wireless and connected. All of the data generated will be sold by companies and collected by government, putting our privacy at substantial risk while significantly increasing radiation from electromagnetic fields (EMFs) in our environment.

- Although it is quite possible for individuals to create individual IoT worlds at home through a direct fiber optic connection and their own wireless routers, "smart communities" are **not** green communities.

- Extreme weather, rising sea levels, and global warming... The manufacturing and the built-in obsolesce of unneeded devices and sensors generate a huge carbon footprint (and a whole lot of E-waste.) All of the data generated by the devices slated to become the Internet of Things is stored in "The Cloud" at data centers that use immense amounts of energy primarily generated by coal - *the* largest greenhouse gas producer.

## In Summary

At a time when technology as it is being developed is eroding our mental and physical health, environment, social relationships, and endangering our children, we need to look very closely at the implications of having our communities' communications policies and equipment dictated by for-profit corporations. In his groundbreaking February 2018 report, Re-Inventing Wires: The Future of Landlines and Networks, Dr.Timothy Schoechle explains why *true* smart community applications such as:

- Responding to climate change by creating sustainable transportation, energy, and water systems
- Designing smart buildings
- Providing education, and
- Upgrading our emergency and public health care services

could best be achieved through **wired** community-owned fiber optic networks. Dr. Schoechle's report is a **must-read** for anyone making community communications policy decisions.

Other communities involved in the sub-sea cable project such as the city of Prince Rupert, who owns *City WestCable and Telephone* - the company bringing fiber optics to Haida Gwaii - are taking their communications future into their own hands. I hope they too have a knowledgeable citizen-base promoting fiber to the premises - and not microcells - for the last mile of their projects. I urge our entrepreneurial and grassroots-oriented coastal communities to follow suit and to keep things local and free from influence by large, for-profit communications carriers. I entreat our elected and tribal leaders to create communication policy decisions that look at the big picture, and place balance and the well-being of future generations ahead of gadgets and industry hype.

For an easy-to-read analysis of why wired fiber optics and not microcell networks are truly the smart choice, particularly in the context of Salt Spring Island's *Official Community Plan*, please read my March 2017 report presented to Salt Spring's *Islands Trust*: "*Small Cells and a Wireless World*

With Warm Wishes,

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