June 18, 2023

Honorable Senator Anna Caballero, Chair California Senate Governance and Finance Committee,
State Capitol,
Sacramento, CA 95814

RE: Oppose AB 1065 (Patterson) Communications: California Advanced Services Fund

Dear Senator Caballero:

We strongly urge you oppose the telecommunications bill AB 1065. This bill will shift much needed funds devoted to reliable “future proof” fiberoptic broadband projects over to wireless projects with known limitations, hazards and high energy consumption.

The Assembly Committee on Appropriations analysis of AB 1065 states, “This bill expressly authorizes a wireless broadband service provider that is otherwise eligible for grants from the California Advanced Services Fund (CASF) program to apply for and receive funding from both the CASF Broadband Infrastructure Grant Account and the CASF Federal Funding Account.” It further states that “The CPUC has adopted rules governing grants from the FFA that make ineligible wireless,” noting that “most broadband infrastructure funding should be reserved for “superior technologies,” such as projects using fiber optic cables, which, the CPUC asserts, reliably provide greater speed capabilities and are much more likely to meet a user’s technological needs in the long run.”

We join The Utility Reform Network (TURN) in opposition to this bill, as fiberoptic is the most equitable, safest, fastest, as well as the most energy conserving, job creating, reliable and secure solution to broadband expansion, not wireless.

The state of Virginia is a national model for fiberoptic broadband expansion to the premises (FTTP) and is rapidly closing the digital divide. California can choose to be a leader in fiberoptic to the premises as well. Fiberoptic is the best long-term municipal solution for broadband expansion.

**Why Wired Networks are Better**

Networks that dedicate capacity to each customer, as most landline copper and fiber technologies do, have better quality and reliability than wireless networks that share capacity among many users. Wired networks are not affected by weather and are much less vulnerable to fire. 5G will not work for rural broadband. 4G communications that span long distances will still be needed. Wired networks simply work better in rural areas. A wired/cabled approach is more equitable and improves broadband for all sectors of society. A wired cable is hidden and does not mar the beautiful rural California landscape. We already have abundant fiberoptic up and down the state already placed.
As Timothy Schoechle, PhD, stated in his excellent summary Reinventing Wires, “the public needs publicly-owned and controlled wired infrastructure that is inherently more future-proof, more reliable, more sustainable, more energy efficient, safer, and more essential to many other services. Wireless networks and services, compared to wired access, are inherently more complex, more costly, more unstable (subject to frequent revision and “upgrades”), and more constrained in what they can deliver.”

**Fire Risk**
Electrical equipment and batteries are known to be a fire risk. The more cell towers the more accessory electrical and battery equipment and the higher the risk. The more small cells installed, the more macro towers needed, and the higher the fire risk. In electrical fires you have to turn the power off first before applying water to prevent electrocution. Firefighters have to wait. The Malibu Canyon fire in 2007 was due to 3 poles overloaded with telecom equipment. Susan Foster, a utility and fire safety consultant, notes in her letter to Assemblyman Santiago that she has worked on policy to prevent placement of cell towers in the most fire prone areas of Encinitas.. [Susan Foster Letter AB 537 Cell Tower Fire Risks 4-26-21](https://example.com). California is drought prone and fire prone. Cell towers cause increased risk for fire.

**Cybersecurity and 5G**
It appears California is investing in 5G technology with massive deployment of 5G cell towers and the internet of things, with promises of limitless interconnectivity by the telecom industry. 5G however is not as efficient, reliable, cheap or fast as industry claims it to be. Landlines, cable and fiberoptic networks are far superior and have the added advantage of cybersecurity. That is why most health systems wire protected patient information.

Experts (Brookings 2019) have noted the increased vulnerabilities of 5G to cyberattacks. There are 5 ways 5G networks are more vulnerable.

1. The network has moved away from centralized hardware-based systems with hardware choke points where cyber hygiene can be practiced.
2. 5G uses primarily software functions i.e. standardized Internet Protocol, which are more vulnerable
3. The network is managed by software which again is more vulnerable
4. The expansion of bandwidth and multiple small cells which wirelessly transmit makes 5G more vulnerable
5. Multiple small IoT devices (mini computers) are each uniquely vulnerable

**Increase in Energy Use with Wireless**
The increased densification of cell towers and devices that connect to them, combined with an approaching “tsunami of data”, will dramatically increase energy consumption. Our nation’s power supply is being guzzled by the demands of our modern digital technology. In 2007 information technology (IT) accounted for about 1% of electricity use. In 2019 this accounted for about 4%. A published report of power consumption from IT estimates a “35% annual increase of the average peak data rate from 2G to 5G and 6G.”

**Considering expected increases in video streaming** and device interconnection researchers estimate the consumption of IT energy will increase to 20% of all electricity used by 2025 and 5.5% of carbon emissions.(Andea) As we approach the critical 10-year mark climate scientists warn is the timeline to drastically reduce energy consumption to avert a climate disaster, we are advised it is imperative to reduce energy consumption in every sector.
Wireless Technology Uses 3 Times More Energy Than Fiberoptic.

Fiberoptic transmissions are inherently energy efficient and faster than Fixed Wireless Access (FAW). Reports show that wireless access networks use 3 times more energy than fiberoptic and the fiberoptic systems last longer. Experts call fiberoptic a “Future Proof” communication. A 2022 Eurocable Report states, “FTTH P2P [fiber to the premises] can offer the highest (up and down) data rates and can, therefore, transmit the greatest amount of data with the least power consumption.”

“A 5G base station is generally expected to consume roughly three times as much power as a 4G base station. And more 5G base stations are needed to cover the same area.” IEEE Spectrum. 5G’s Waveform Is a Battery Vampire

The German Environmental Agency notes that, “Fibre optic video transmission is nearly 50 times more efficient than UMTS.”

Digital Sobriety: The Ecologist highlights industry influence in reviewing The Shift Project report (2020) Lean ICT, Toward Digital Sobriety. “The report recommends a shift from “intemperance to sobriety in our relationship with digital technologies” - basically the idea that individuals and companies could self-limit their purchase and usage of equipment. But this clearly runs counter to the financial imperatives of the big tech companies and their marketing strategies.” (Barton 2020)

We believe you need to rethink the best strategy for broadband connection in all communities that is fairly distributed, safe, cybersecure, energy wise and economically viable.

Subsidizing fiberoptic/cabled broadband for underserved communities and giving local governments control will help them economically in the long run as well as provide safe broadband to insure the health and well-being of their communities, citizens and the environment. Please step away from the rapid and reckless deployment of cell towers.

“Once communities at all levels... assume local responsibility for creating safe and economical high-speed Internet access for all of their citizens, this renaissance will unfold. A sturdy, wired communication infrastructure, using wireless only as an adjunctive technology, has vast potential to become the electronic commons essential to commerce, education, jobs, the economy, social cohesion, communications and international competitiveness.” Frank Clegg, Past President Microsoft Canada

Thank you for considering carefully the best long-term solutions for our lovely state.

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WWW.MDSafeTech.org
References

5G is Not the Answer for Rural Broadband. March/April 2017. https://www.bbcmag.com/rural-broadband/5g-is-not-the-answer-for-rural-broadband


