

Increasing Broadband in Illinois Congressional District 14

Recommendations on H.R. 2741 - Leading Infrastructure for Tomorrow's America Act "LIFT Act"

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Summary

The combination of non-profit/co-op/governmental entities laying fiber-optics in an open-access manner is a winning combination to that will enable more choices, local control, reliable, cost-effective, and universal Internet access to everyone.

The Problem

Many communities are struggling with limited Internet access options. Many rural households have no access to the Internet, or expensive and slow access. Most communities experience no competition, expensive, terrible customer service, and unreliable Internet service that is not built for the needs of tomorrow. This lack of universal fast, affordable, and reliable Internet access results in less economic development, fewer educational opportunities, and a lower quality of life, particularly for low-income families and communities of color.

Basic statistics:

- Studies show that at least 39% of rural areas in the US have no Internet service at all, while 51% of all Americans have a single provider to choose from. This data is statistically accurate across much of Illinois' 14th Congressional district.
- Some 50% of seniors in the US do not have broadband at home.
- An estimated 40% of households making less than \$75K in the US do not have broadband.
- Nearly 50% of children in the US were unable to complete their homework due to not having access to the Internet or a computer.
- 1.87% of McHenry County households have access to fiber-optics vs the national average of 14.4%.
- 8% of households in McHenry County have access to a gigabit or more.

- The United States have the fifth most expensive price per gigabyte smartphone plans among developed nations, and a true unlimited data plan does not exist. Nearly all the cellular spectrum is owned by the four major cellular companies (AT&T, Verizon, T-Mobile, and Sprint).

The FCC and the federal government has a philosophy not choosing “winners and losers” in the domestic broadband marketplace. Not picking fiber-optics, the gold-standard, as the preferred technology to bridge the digital divide for everyone, arguably, has lead to the United States spending hundreds of billions dollars in antiquated, outdated, slow, unreliable, and expensive solutions with small marginal increase in access and speeds.

McHenry County is ineligible for nearly all federal broadband expansion funding opportunities. These funding opportunities regularly focus on “unserved areas” of either 25 Mbps Download/3 Mbps Upload or 10 Mbps Download/1 Mbps Upload, and often include provisions to stop public and private entities from “overbuilding” and creating more competition. According to FCC Broadband Maps, McHenry County is considered to be “served”. You are considered “served” if one provider exists and provides access to at least 25 Mbps download and 3 Mbps upload. Being “served” makes McHenry County ineligible for federal funds and leaves us with slow, unreliable, and expensive solutions like satellite or fixed-wireless.

Private entities in the market place, in general, are not expanding their fiber-optic networks due to a combination of several things: 36 Month ROI “rule-of-thumb” requirements, avoidance of competing with others, and maximization of profit. Fiber-optics, last-mile, is expensive infrastructure, it makes sense to leverage the costs of that required infrastructure in a natural monopolistic model to maximize return on investment in the shortest amount of time. In a natural monopoly, companies have no incentives to upgrade their infrastructure or to compete, and as such many are not upgrading leaving many communities with inadequate solutions. This business model does not favor competitive and universal access to all and is anti-competitive.

The Solution

It’s our recommendation to make changes to H.R. 2741, titled “Leading Infrastructure for Tomorrow's America Act” (“LIFT Act”) and future legislation to include the following:

Fiber-Optics, as the preferred technology

A Fiber-optic cable is a flexible long, thin strand of very pure glass about the diameter of a human hair encased, basically, in plastic. This is arranged in bundles called fiber-optical cables and used to transmit light signals over long distances. Fiber-optic cables are long lasting, an multi-generational asset, reliable, and offer nearly unlimited amount of bandwidth. Fiber-optics is utilized all over the world and is utilized in the backbone of the Internet to connect our world.

Due to these characteristics, fiber-optics is a superior technology over others like Dial-up, ISDN, DSL, Coaxial Cable, Cellular (4G or 5G) (5G needs fiber), or Fixed Wireless, and should be the preferred technology going-forward in closing the digital divide.

If the goal is to make this a one-time infusion of taxpayer money to end the digital divide, then Congress must invest in the future. As former FCC Commissioner Mignon Clyburn testified before the Energy and Commerce Committee, "Congress should be investing taxpayers' money in infrastructure that will deliver high-speed broadband of at least one Gigabit, future-proof symmetrical service." To that, IFMC, NTCA-The Rural Broadband Association, Electronic Frontier Foundation, and many others support a policy change to fiber-optics to future proof our networks and stop wasting taxpayers' money.

Non-Profits, Cooperatives, and Governmental Entities

Over 750 non-profits, cooperatives, and municipal entities have embraced operating their own broadband networks to fill in the gaps left by the private market. Not-for-profit and non-profit organizations have been, historically, better suited to ensuring transparency; building and managing utilities like electricity, water, and sewer; ensuring universal coverage; and lowering costs.

These municipal and cooperative networks were essential in driving rural electrification and we are seeing the same dynamic with the expansion of high-quality Internet access. These entities have financed their broadband networks through a number of traditional and creative financing methods, but building these networks can and would have been much easier to build if there was a loan/grant mechanism available, like in the Rural Electrification Act of 1936.

Open-Access, Free Market Principles

Recent advances in fiber-optic networking technology have enabled networks to be "open-access", allowing multiple Internet Service Providers (ISP) on a single fiber-optic network ensuring competition. In an open-access model, the fiber-optic infrastructure and retail services are decoupled and separated. They are no longer vertically integrated, but are treated similar to a utility resource that is considered a human right. This forces the infrastructure entity to maximize market share in the usual natural monopoly manner, and forces the retail entities, ISPs, to compete and innovate on a number of different factors. This allows each entity to focus and utilize their particular roles fully, thus leading to more competition and more coverage. Such open-access networks seen with Ammon, ID, UTOPIA, Kitsap PUD, NIU's iFiber, Lit Communities, SiFi Networks, or Douglas County, WA.

Local McHenry County Incumbent Bandwidth Offering and Prices

| ATT U-Verse | | E-Vergent | | Comcast | | Hughes Net* | | ATT Fiber | |
|---------------|----------|-----------------|---------|----------------|----------|--|----------|-------------|----------|
| 50/10 Mbps *1 | \$70.00 | 10 Mbps/ 2 Mbps | \$49.95 | 400/10 Mbps *1 | \$100.00 | Based on bandwidth usage, maximum speed is 25 Mbps | | 300 Mbps *1 | \$70.00 |
| 75/20 Mbps *1 | \$100.00 | 15 Mbps/ 3 Mbps | \$64.95 | 1000/35 Mbps | \$140.00 | 10 GB | \$59.99 | 1000 Mbps | \$100.00 |
| | | 25 Mbps/ 5 Mbps | \$79.99 | | | 20 GB | \$69.99 | | |
| | | 35 Mbps/ 5 Mbps | \$99.95 | | | 30 GB | \$99.99 | | |
| | | | | | | 50 GB | \$149.99 | | |

Community-Owned Fiber Offerings and Examples

| Utopia Fiber | | Ammon, Idaho | | Douglas County PUD | | Lyndon Township, Michigan | | RS Fiber (Rural MN) | |
|-------------------------------------|----------|------------------------------------|---------|-----------------------------|-----------------------|------------------------------------|---------|--------------------------|----------|
| 250 Mbps | \$65.00 | 15 Mbps *2 | \$38.50 | 100 Mbps | \$45.95 | 25 Mbps | \$57 *3 | 50 Mbps | \$50.00 |
| 1000 Mbps | \$78.00 | 100 Mbps *2 | \$47.38 | 1000 Mbps | \$89.95 | 100 Mbps | \$68 *3 | 100 Mbps | \$70.00 |
| 10,000 Mbps | \$278.00 | 250 Mbps *2 | \$48.38 | | | 1000 Mbps | \$92 *3 | 1000 Mbps | \$100.00 |
| | | 1000 Mbps *2 | \$48.49 | | | | | | |
| Government Co-Op, Open-Access | | City-Owned, Open-Access | | Power District Utility Coop | | Township Owned, Privately Operated | | Telecommunications Co-Op | |
| Residential: Choice of 11 providers | | Residential: Choice of 4 providers | | Residential: | Choice of 6 providers | | | | |
| Business: Multiple Providers | | Business: Multiple Providers | | Business: | Choice of 8 providers | | | | |

*1 Has bandwidth caps and additional fees for going over said cap. No community-owned fiber network has bandwidth caps in place.

*2 Ammon, ID charges an infrastructure fee of \$22 per month for 20 years + a maintenance fee of \$16.50 per month. Totaling \$38.50

*3 Lyndon Township agreed to invest in a fiber-optic network. Voters agreed to pay an average of \$21.75 per month for 20 years.

Figure 1: Incumbents vs Community-Fiber Networks

Adding the requirement of open-access networks to any future built networks from federal funds will enable the federal government to continue the philosophy of not picking “winners or losers”, but providing open-competition in a market traditionally not open.

Proposed Amendments

Amendments to §11001, titled “EXPANSION OF BROADBAND ACCESS.”

§14(c)(1) amended as follows: “FIBER TECHNOLOGY PREFERRED. - Any entity administering a reverse auction (either the State or the Commission) in making awards shall fiber-optic gigabit symmetrical service technology.”

§14(c)(2) FUNDS PREFERENCE amended as follows:

“(A) that would expand access to broadband on tribal lands, as defined by the Commission;

(B) that would expand access to broadband in advance of the time specified in subsection (e)(5); or

(C) that would expand access to broadband to areas where the median household income is below 150 percent of the poverty threshold as defined by the Bureau of the Census.” (REPLACES PREVIOUS SUBPARTS)

§14(c)(3) UNSERVED AND UNDERSERVED AREAS:

§14(c)(3)(A) amended as follows: “(v) Consider whether more than 60% of an area lacks access to broadband satisfying the requirements of subsection (d) of this section.”

§14(d) PROJECT REQUIREMENTS amended as follows:

“(2) The project shall offer open-access to more than one vendor, including the last mile.”

“(4) The project may not offer broadband that does not, at a minimum, provide a download speed of at least a gigabit per second, an upload speed of at least a gigabit per second.”

ADD “(8) The project shall not be eligible to for-profit entities or individuals.”

§14(g) DEFINITIONS

§14(g)(11) UNSERVED AREA amended as follows:

“(A) with a download speed of at least 1 gigabit per second;

(B) with an upload speed of at least 1 gigabit per second; and

(C) Open-access to the last mile, by more than one vendor.”

Amendments to §13002, titled “DEFINITIONS.”

Amend §13002(12)(B)(i) as follows: “(A) with a download speed of at least 1 gigabit per second;

(B) with an upload speed of at least 1 gigabit per second; and

(C) Open-access to the last mile, by more than one vendor.”

Amendments to §13003, titled “DETERMINATION OF ELIGIBILITY AND PROJECT SELECTION.”

Amend §13003(b)(3) AS FOLLOWS: “FIBER TECHNOLOGY PREFERRED - In selecting projects to receive credit assistance under the BIFIA program, the Assistant Secretary shall favor fiber-optic or other gigabit symmetrical service technology.”

About Internet Freedom for McHenry County

Internet Freedom for McHenry County (www.ifmc.co) is a non-profit organization of community members joining together to drive civic action that will promote the improved use of fiber-optics to provide cost-effective, reliable, and high-quality connectivity to everyone within McHenry County.

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