

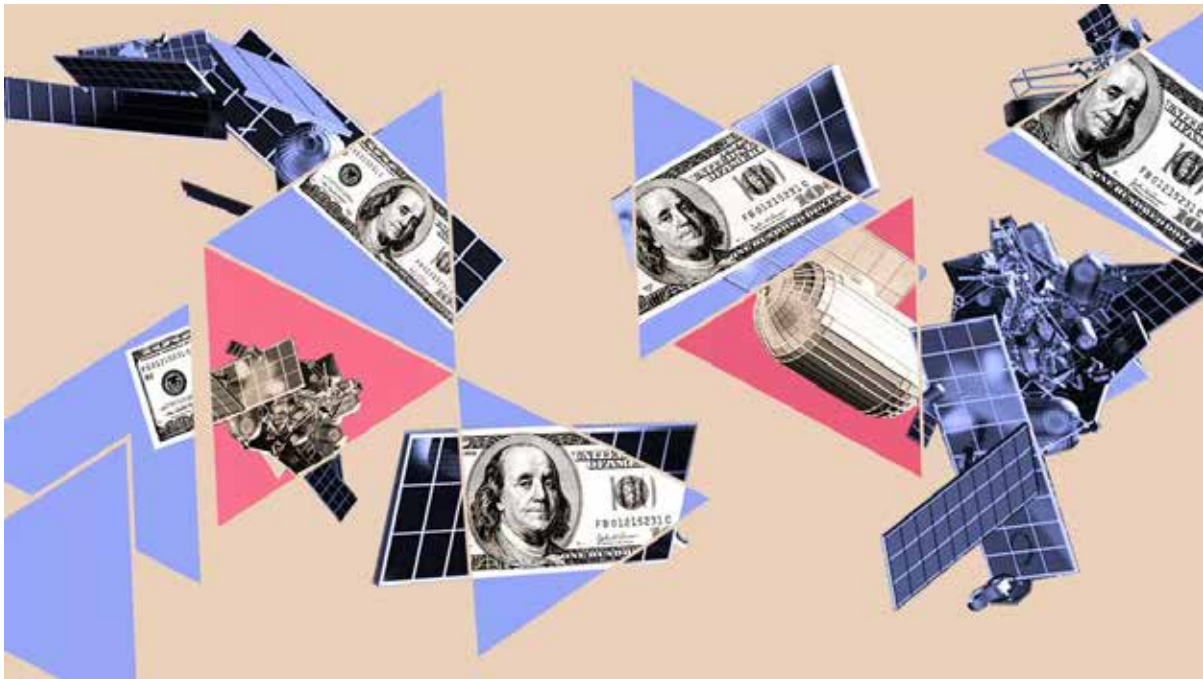
# Co-ops Connect FYI

By Jonathan Chambers • Sep 16, 2022

Smart Brevity® count: 4 mins... 1060 words

Updates and insights for electric cooperatives considering or operating rural broadband networks.

## Our Broadband Future Lies Not in Starlink, But in Ourselves



It's been some time since I last wrote about Starlink. I don't find the satellite industry terribly interesting. But it's worth contemplating briefly every so often.

**What's new:**

- **Last month, the FCC** found that Starlink had not demonstrated the ability to satisfy its RDOF obligations to deliver reliable 100 Mbps downstream and 20 Mbps upstream broadband internet access.
- **The FCC rejected Starlink's** long-form application for \$886 million in subsidies.
- **Last week, Starlink sought a review** of this decision by the full Commission.

**This means:**

- The 4-member Commission must vote 3-1 to overturn the decision by the Wireline Competition Bureau.
- Since the Bureau reports to the Chairwoman, one can presume she will not vote to overturn the decision.
- The two Republicans will vote against the Chairwoman.
- The other Democratic Commissioner will support the Chairwoman.
- Having failed to overturn the decision, Starlink will appeal to the DC Circuit Court.

**What's next:**

**I expect Starlink** is hoping to have the whole matter remanded to the FCC by 2025.

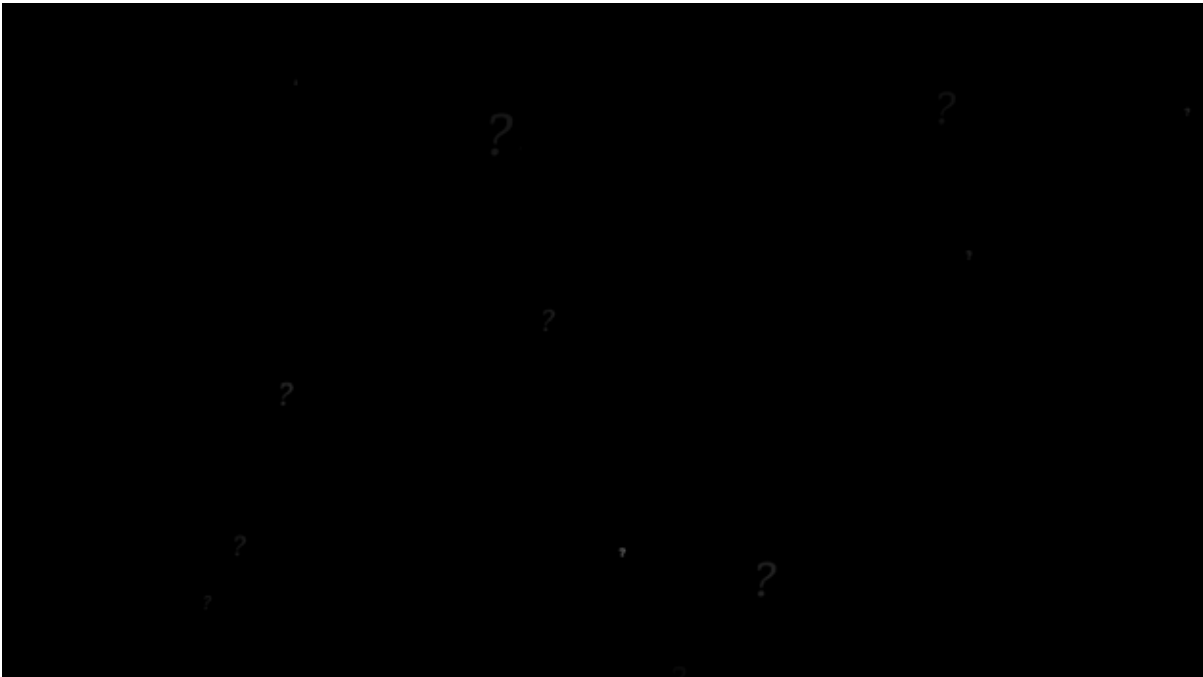
- In other words, Starlink's lawyers will be trying to keep the issue alive **until the 2024 presidential election.**
- **If a Republican wins** and names one of the current Republican Commissioners as Chair, **there is a chance Starlink will prevail.**

**The bottom line:**

**The odds are long,** but nearly \$1 billion is at stake.

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## A Starlink Thought Experiment



If you wonder whether the Democratic or Republican Commissioners are correct in their analysis of Starlink, try this thought experiment:

**Do you believe** Starlink's service is reliable broadband, defined as 100 Mbps downstream and 20 Mbps upstream?

**If you do,** then consider Starlink's claim of coverage.

- Light blue is available now.
- Dark blue is available in 2023.



**The Infrastructure Act** plainly states the \$42.45 billion allocated to the states for broadband *may be spent only in areas that lack reliable service* of at least 100 Mbps downstream and 20 Mbps upstream.

- NTIA, administrator of the program, has determined that **Starlink's service is *not* reliable broadband service.**
- **Why it matters:** To determine otherwise would have effectively meant that the Infrastructure Act funding could not be spent anywhere Starlink offers service.

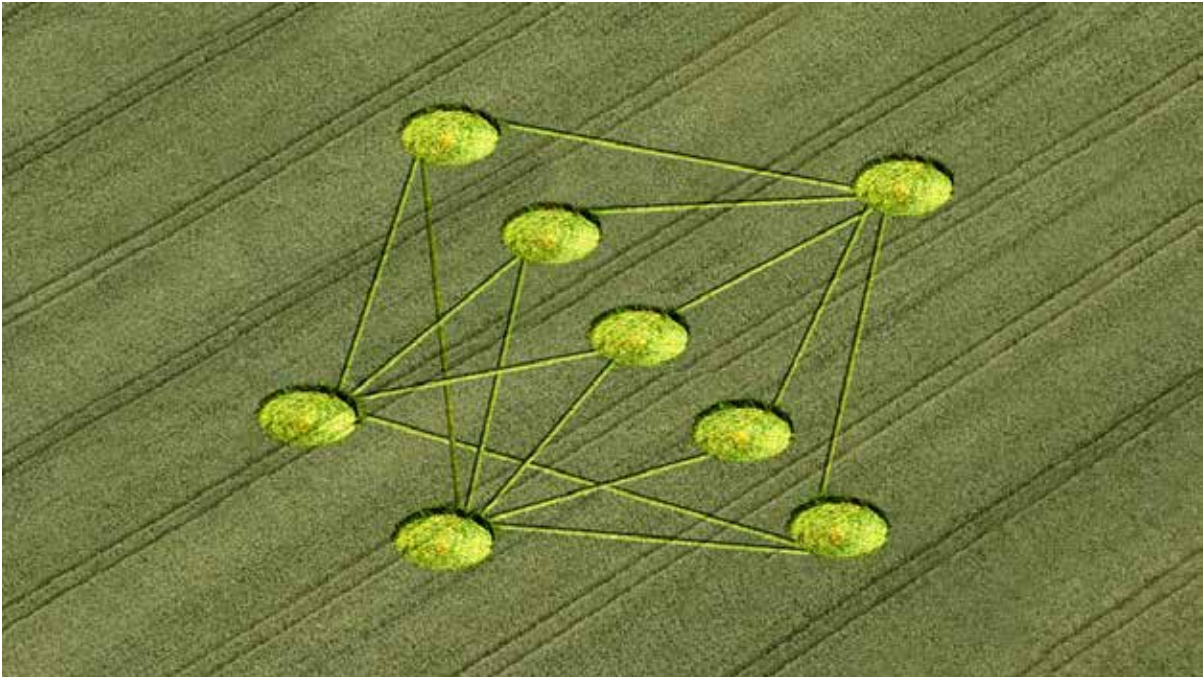
### **The bigger picture:**

**If the FCC** were to give \$886 million to Starlink in subsidies, NTIA will still allocate \$42.45 billion to states — which will include money to be spent in Starlink RDOF areas.

- **Why it matters:** Both Republican and Democratic legislatures and governors and state broadband offices will spend public funds where Starlink provides service.
- If a future FCC were to release \$886 million to Starlink, **that would be money spent in the same places as BEAD funding.**

- If the federal or state governments believe that Starlink does provide reliable broadband service, **then that means the BEAD funding should not be spent.**

## So, Can Starlink Cover Rural America?



**Go deeper** with another thought experiment:

**SpaceX has launched** 3,000 Starlink satellites to date and plans to launch 10,000 or maybe 40,000 or maybe some other astronomical number. We don't know because they don't know.

**Let's assume:**

1. SpaceX dramatically increases the pace of launches and deploys 10,000 satellites while the BEAD program is developed.
2. Each satellite can do 20 Gbps. (20 1-Gigabit beams would be a feat, but let's give them the benefit of the doubt.)

**By the numbers:**

- Using some napkin math, the earth is 197 million square miles, of which less than 4 million square miles is the U.S.
- So, only 2 percent of satellites are over the U.S. at a given time.
- That would mean **4 Tbps combined for the entire country.**
- Let's say Starlink served only rural America, or 24 million homes.
- That would mean **only 160 kbps per home.**
- To meet the required 100 Mbps, it works out to **an oversubscription ratio of 600 to 1.**
- Even this is a stretch because it assumes that demand is spread out evenly.
- In reality, people live in clusters, so in each rural area you will have more houses competing for the same few satellites overhead, and **oversubscription could be closer to 2,000 to 1.**

**The bottom line:**

**Starlink cannot serve all** of rural America, nor can it serve all of the RDOF locations or BEAD-eligible locations.

- RDOF, ARPA and BEAD are infrastructure programs, which are ill-suited for satellite infrastructure.
- Other universal service programs like Lifeline and the Affordable Connectivity Program are portable subsidy programs. **They are available to Starlink, but Starlink has chosen not to participate.**
- Universal service programs, such as RDOF, have never been vehicles for the FCC to speculate on technological development.

**I expect SpaceX would dispute** many of my assumptions. SpaceX's plans are confidential and proprietary, as they should be.

- **But:** They are asking for preferential treatment in getting access to nearly \$1 billion of public funds and by so doing, ***attempting to impact \$42.45 billion in funds.***
- **So:** I'll stick with my assumptions until SpaceX makes its assumptions or plans public in something more detailed than a redacted filing with the FCC.

**It goes without saying:**

- I shouldn't have to point out that the FCC intends these funds to be used for U.S. customers.
- Sure, some of the funds sought by SpaceX and Starlink could be spent on CPE in the U.S.
- **But SpaceX would effectively spend 98 percent of U.S. subsidies on non-U.S. operations.**

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## Final Thoughts



**I am biased.**

- I think broadband is an essential service.
- I think rural Americans should have access to broadband services comparable to those available in urban and suburban areas.
- I think the way to achieve that is to invest in long-term fiber infrastructure.
- I think it best to invest locally in networks that are constructed, owned, operated and maintained locally, which produces both near-term and long-term jobs.
- I expect RDOF, ARPA, and BEAD to lead to hundreds of thousands of jobs created in rural America, rather than a handful of jobs in California.

**Why it matters:**



**Like electric infrastructure**, an investment in a fiber network will last for decades.

- By contrast, an investment in a Starlink satellite will last perhaps five to seven years, after which Elon Musk will need more of our money.

**The bottom line:**

**Yes, I occasionally agree with the FCC.** I agree with them on their rejection of Starlink subsidies.

***Rural America deserves better.***

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