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The Honorable Robert Latta
Chairman
Subcommittee on Communications and Technology
U.S. House of Representatives

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Dear Chairman Latta,

Thank you and the Committee for the opportunity to testify recently and for the thoughtful questions sent after the hearing. My answers are attached.

I am happy to answer any additional questions you might have.

Sincerely yours,

Scott Wallsten

Chairman Latta

1. I am concerned that this Administration has not taken a technology neutral approach to connect all Americans. We cannot forget the importance of mobile broadband in this discussion. Wireless technology is important not just for day-to-day connectivity, but also for uses like precision agriculture. Today, the FCC is refreshing the record on the 5G Fund to provide subsidies to build out 5G across rural America.

How should reforms to the USF account for the role of mobile connectivity and how can we distribute funding for mobile broadband in a cost-effective manner?

Technology neutrality should be a key component of every public broadband plan. People care about the services that they can use, not the technology that delivers it. Policymakers should decide the minimum quality levels (bandwidth, latency) public funds can support and support any technology that can provide that service.

Wireless broadband has long been a substitute to home broadband for some people, especially those who value mobility higher than other factors. As wireless broadband quality increases, it competes with wired broadband. 5G fixed wireless, in particular, is competing directly with home broadband.

According to data compiled by T-Mobile, between Q4 2021 and Q3 2022, nearly 80 percent of broadband net adds were fixed wireless, highlighting the point that wireless and wireline broadband are substitutes for a growing share of consumers.

Broadband Net Adds, Q4 2021 - Q3 2022

"FWA" = Fixed Wireless Access

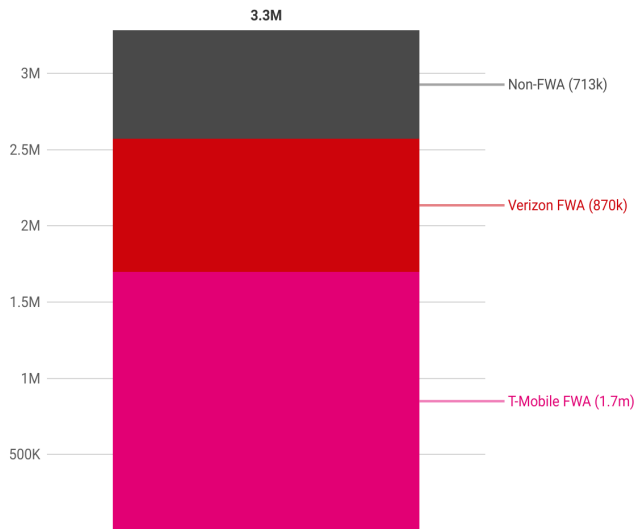


Chart: Technology Policy Institute • Source: T-Mobile 2022

A common counter-argument is that we must “futureproof” networks. It is impossible to build a network and never upgrade it, so the phrase itself is misleading. The right way to think about costs is to invest in networks that generate the highest net benefits in net present value, which is the discounted benefits over time minus (initial cost plus discounted maintenance and future upgrades).

More formally,

$$NPV = \sum_{t=1}^n \left(\frac{B_t}{(1+r)^t} \right) - \left(C_{initial} + \sum_{t=1}^n \frac{C_{maintenance_t}}{(1+r)^t} \right)$$

Where: - NPV = Net Present Value of benefits

- Σ = Summation from $t = 1$ to n (where "n" is the number of periods into the future you're considering)

- B_t = Benefits received in period t

- r = Discount rate (as a decimal)

- t = Time period

- $C_{initial}$ = Initial costs

- $C_{maintenance_t}$ = Maintenance costs in period t

Fiber will often be the winner in this comparison, but not always. The answer will depend on the composition of costs, incremental benefits to consumers of higher broadband quality, as well as the discount rate.

The Honorable Randy Weber

1. I think we all agree that ACP, in the ideal sense, is a good thing. But I believe the program still needs reforms to address concerns about wasted taxpayer dollars and to be sure we are sending those dollars where they are needed most. How can Congress address the issue of eligibility for the program and ensure that only those with need receive the subsidy?

ACP's goal should be specified more clearly. If it is intended to address the digital divide, then only those who either do not currently have broadband or who are likely to disconnect absent a subsidy should be eligible. To be fair, that objective is easy to say but much more difficult to do in practice. Additionally, targeting people without subscriptions is easier than helping people who would cancel subscriptions without subsidies.

Comcast's Internet Essentials provides an example of how to target people who were not connected. Households are eligible only if they did not previously have a Comcast broadband subscription. Stanford Professor Gregory Rosston and I [evaluated](#) that program and found that about 66 percent of subscribers were truly new broadband subscribers. By contrast, anyone who meets various income-related criteria is eligible for ACP.

Targeting People Who Do Not Currently Subscribe

We do not currently know how many ACP participants are new broadband subscribers or how many would not subscribe to broadband were it not for ACP. The first step in targeting people who do not subscribe is to learn how well the program currently does that. ISPs already have the information that would give us an approximate answer: they know which ACP recipients were already subscribers and which were not. They could make that information public or at least make it available to the FCC. Just as Comcast cannot know which Internet Essentials subscribers switched from other providers to take advantage of the program, the number of new subscribers who are on ACP at a given ISP would not account for subscribers who switched. Nevertheless, that information would give us a good starting point for estimating how well the program targets nonsubscribers.

Assuming policymakers decide that the program as it is constituted does not sufficiently target non-subscribers, ACP could implement rules that make only people who did not already have service eligible for subsidies. More rigorously enforcing such rules will increase administrative costs. Policymakers would have to decide how to balance those costs relative to the benefits of better targeting. The least expensive option might be simply asking people to certify that they have not had service within some period of time. A more administratively costly option could require actual service checks.

Another administratively low-cost approach could be to not allow people to use the subsidy for existing subscriptions. To put it differently, the law could prevent ISPs from using ACP for existing subscribers. People could get around this eligibility rule by switching subscribers, but in that case the rule may at least generate some additional competition.

Preventing People from Unsubscribing

Another ACP objective is to keep people from disconnecting their service for financial reasons. This goal is more difficult to measure because it involves a counterfactual for each subscriber – that is, would they unsubscribe for financial reasons?

The first step in deriving ways of achieving this goal is to learn the share of subscribers who would, in fact, unsubscribe were it not for the subsidy. Answering this question requires new research. Surveys that simply ask recipients whether they would cancel their subscriptions without the subsidy are not likely to reveal useful information as respondents always have an incentive to report needing money they receive for free.

An ideal experiment would randomly cancel some recipients' ACP benefits and measure how many people who lose benefits cancel their service compared to those who continue to receive the service. That approach, however, is almost certainly not realistic.

More feasible approaches may give useful information, however. For example, while simple “would you unsubscribe” survey questions are likely to lead to biased results, other survey methods might be more suitable. For example, Discrete Choice Experiments (DCE, also called Conjoint Analysis) are well-suited to measuring how much people value one thing relative to another. In principle, one could design a DCE to measure how much people value their broadband connection relative to other goods, which might help determine how likely they are to cancel it without a subsidy.

Evaluation is Inexpensive, Yet Almost Never Funded

The ACP is a \$14.2 billion program. Even a large, detailed DCE study of the type discussed above would likely cost less than \$100,000 to gather and analyze data and write a report. The report should be independent and not conducted by entities with interests in the program, including the FCC.

In your testimony, you discuss the need for "rigorous, independent" evaluation of the USF. What does that look like?

- a. Do any existing federal broadband programs include an evaluation like you described?
- b. Who do you think should be the agency or organization to carry out this evaluation?

a. Do any existing federal broadband programs include an evaluation like you described?

To my knowledge, no federal broadband program includes the type of evaluation I discuss, despite recent focus on evidence-based policy.¹ Most programs include mechanisms to detect waste, fraud, and abuse, which are important, but are about compliance rather than whether the program did what it was supposed

¹ Robert Hahn, Building upon foundations for evidence-based policy. *Science* 364, 534-535 (2019). [10.1126/science.aaw9446](https://doi.org/10.1126/science.aaw9446)

to do. Receiving money to build broadband and then building what was promised means that the contractor did what was promised, but it does not necessarily mean that that project would not have happened without the subsidy. Answering that question requires a different kind of analysis.

GAO, CRS, and OMB have all noted the lack of clear objectives and of ways of measuring whether those objectives were achieved.²

b. Who do you think should be the agency or organization to carry out this evaluation?

Evaluations must be independent from entities that benefit from (or are harmed by) the programs and agencies that run the programs. A true evaluation must design tests that have the potential to identify success and failure and the evaluator must have incentives to report those results honestly regardless of what they show.

In practice, that means neither the FCC nor USAC should evaluate universal service programs they run. NTIA should not evaluate BEAD. USDA's RUS should not evaluate its loan and grant programs. States should not evaluate their BEAD programs. Of course, all of those should design their programs in ways that facilitate evaluation, but others should do the evaluation.

Several agencies within the government have the skills to do this kind of work or to find and fund academic and other groups that could conduct evaluations. The National Science Foundation and National Academies of Sciences, for example, are well-suited to finding groups that can do rigorous evaluation work.

Those agencies would need funds that they could distribute, but, as discussed above, the amounts of money needed for evaluation are miniscule compared to the programs themselves, and have the potential to dramatically improve cost-effectiveness.

² Government Accountability Office, FCC Needs to Improve Performance Management and Strengthen Oversight of the High-Cost Program, June 2008
Universal Service Fund High Cost Program Assessment, White House, Internet Archive's Wayback Machine, 2005, <https://web.archive.org/web/20100308080013/www.whitehouse.gov/omb/expectmore/summary/10004451.2005.html>.

United States Government Accountability Office, "FCC Should Evaluate the Efficiency and Effectiveness of the Lifeline Program," Report to the Chairman, Committee on Commerce, Science and Transportation, U.S. Senate (Washington, DC, March 2015), 33, <http://www.gao.gov/assets/670/669209.pdf>.

Figliola, Patricia Moloney, et al. "The Future of the Universal Service Fund and Related Broadband Programs." Congressional Research Service, R47621, 2023, <https://crsreports.congress.gov/product/pdf/R/R47621>.

The Honorable Rick Allen

1. I am concerned about certain union provisions that NTIA included in the BEAD program. These requirements do not exist in law, and I worry that they will make deployment slower and more expensive. Can you talk about how requirements such as these burden broadband deployment?

Programs cannot maximize more than one objective if those objectives are related to each other in any way. In the case of the BEAD program, the objective should be to maximize broadband coverage. Every additional requirement makes achieving that objective more expensive.³

As Stanford Professor Gregory Rosston and I argued in 2022,

BEAD's goal should be to build broadband access where it does not exist. The NOFO starts by claiming that as the primary objective. Then the NOFO adds additional objectives. For example, states are encouraged to preference:

- Equitable workforce development and job quality
- Union labor
- Climate resilience
- Domestic suppliers

To be clear, we are not saying these are not worthy objectives. Only that each increases costs and therefore also reduces the funds available for broadband.

The "Build America, Buy America" (BABA) provisions are perhaps the simplest example, and one where NTIA determined how much it is willing to trade off in lost broadband to stick to this principle. BABA reduces the number of available options for broadband providers to use and will increase the costs of the equipment that is available.⁴ If current supply chain problems continue to exist as providers began building, the increased competition for the smaller amount of available equipment will drive prices up even more. NTIA acknowledges that it is unrealistic to expect that providers can obtain all its supplies domestically and also that this restriction will increase costs. The rules allow providers to buy supplies abroad if not doing so would increase costs by at least 25%. NTIA is therefore concluding that, in principle, it is worth spending a 25% cost premium on equipment.⁴

³ Rosston, Gregory L., and Scott J. Wallsten. "Maximizing BEAD's Broadband Reach." Technology Policy Institute, June 2022, <https://techpolicyinstitute.org/wp-content/uploads/2022/06/Maximizing-BEADs-Broadband-Reach.pdf>.

Wallsten, Scott. "How 'Buy American' provisions hurt America." The Hill, 6 June 2023. <https://thehill.com/opinion/white-house/4035445-how-buy-american-provisions-hurt-america/>.

⁴ Rosston, Gregory L., and Scott J. Wallsten. "Maximizing BEAD's Broadband Reach." Technology Policy Institute, June 2022, <https://techpolicyinstitute.org/wp-content/uploads/2022/06/Maximizing-BEADs-Broadband-Reach.pdf>.

In short, every additional requirement can increase costs and slow deployment. It is up to Congress to decide whether these costs are worth the benefits, but should at least be aware that secondary requirements are costly.

2. Currently, the U.S. federal court system is deciding whether the funding mechanisms for the FCC's Universal Service Fund are unconstitutional. How should Congress respond if the courts decide that these funding mechanisms are unconstitutional?

As I am not a lawyer, I am not qualified to say what any organization can do that is or is not constitutional, so please accept my answer with that caveat.

That said, were the courts to decide that current funding mechanisms are unconstitutional, Congress could take the opportunity to examine the Universal Service Fund from top to bottom to determine which programs are truly justified today and to change the funding mechanism to general revenues, which provides the largest tax base.

The High-Cost Fund (Connect America Fund), in particular, was designed for a different era. Today, new forms of competition, particularly from Low Earth Orbit satellites and 5G fixed wireless, are changing the calculus of where infrastructure subsidies are economically justified.

The Honorable Russ Fulcher

1. Telehealth is very important to my constituents, who may be far from a hospital or health center. We spent a lot to improve access to telehealth in recent years. Dr. Wallsten, can you discuss how we can continue to support this important service?

Two public policies are important for ensuring access to public health.

First, state licensing board rules that make it difficult or impossible for a doctor to see a patient in a different state should be eliminated.⁵ Such restrictions are typically intended to insulate providers within a state from interstate competition. States loosened many of these rules during Covid, and that turned out to benefit providers and patients. Independent organizations should evaluate state licensure to identify which, if any, have legitimate purposes and which primarily block competition.

Second, policymakers should recognize that paid prioritization—or internet “fast lanes”—could yield benefits for telehealth. It is easy to imagine, for example, that people want higher connection reliability when talking to a health-care provider than when they are streaming Netflix. Net neutrality rules could make beneficial prioritization impossible.⁶

⁵ Licensing across state lines, Telehealth.HHS.gov, 11 May 2023, <https://telehealth.hhs.gov/licensure/licensing-across-state-lines>.

⁶ For a discussion of how Covid highlighted the benefits of prioritization, including for telehealth, see: Wallsten, Scott. "A New Normal for Broadband Prioritization", Technology Policy Institute Blog, <https://techpolicyinstitute.org/publications/broadband/net-neutrality/a-new-normal-for-broadband-prioritization/>

The Honorable August Pfluger

1. What problems have you seen regarding waste, fraud, and abuse within ACP and USF, and what solutions do you have to these problems?
2. Should Congress require all providers to use the National Verifier instead of allowing for alternative verification processes?
3. To participate in the USF Lifeline and high-cost programs a provider must be certified as an Eligible Telecommunications Carrier (ETC) by their respective state regulatory commission. Do you think this ETC requirement is still necessary, and is it the only way we can have oversight over USF recipients?
 - a. What other oversight vehicles should we explore this Congress?
 - b. Should this ETC requirement extend to ACP providers as well?

These are important questions but, respectfully, I do not feel qualified to answer them as I have not studied these issues specifically.

However, I would emphasize that the biggest problem with USF may not be waste, fraud, and abuse, per se, but that they appear to yield few, if any benefits. At the extreme, if the program had no effect, then all of the spending would be waste. (To be clear, I am not asserting that all of the spending is wasteful, only that the magnitude of the cost of lack of effectiveness may be much larger than traditional measures of waste, fraud, and abuse).