

A Broadband Policy Agenda for the New Administration

The digital divide has held back the United States for too long. Now is the time to end it.

By Masha Zager / *Broadband Communities*

The Biden Administration's efforts to tackle the multiple crises besetting the United States present a historic opportunity to end the digital divide for a generation or more. As former FCC chairman Tom Wheeler points out, universally available and affordable broadband is a prerequisite for addressing many of today's urgent issues, among them the coronavirus pandemic, the economic collapse, climate change and social inequities.

Broadband probably offers more bang for the buck than any other lever available to policymakers. But offering isn't the same as achieving. For two decades, the federal government has poured billions of dollars into support for broadband deployment and operation. The FCC increased Universal Service Fund (USF) high-cost support and redirected it from telephone to broadband. The Department of Agriculture's Rural Utilities Service (RUS) handed out loans and grants to small providers. The National Telecommunications and Information Administration oversaw massive grants for middle-mile networks. Smaller programs have addressed broadband specifically for health care, education, economic development, low-income consumers, students at HBCUs and tribal areas. Mapping, digital literacy, broadband adoption and regulatory streamlining also have been targets of federal efforts.

Some of this money has been well spent. Many people, businesses, schools and hospitals throughout the United States have access to

broadband of higher quality, and at lower prices, than they otherwise might have. Yet the digital divide remains as stubborn as ever – a fact that became painfully apparent once COVID-19 transformed social and economic life. Millions of people have no access to adequate broadband; millions more cannot afford adequate broadband. A Microsoft study, measuring actual U.S. usage patterns in September 2018, found that 163 million people did not use the internet at download speeds of 25 Mbps.

As a result, in the last year, schoolchildren fell behind in their studies, businesses closed, and people exposed themselves to illness when they had to conduct tasks in person that others accomplished online.

What went wrong? Why didn't the billions invested in broadband succeed in solving the problem? More important, what should the new administration and Congress do to ensure that all American households, businesses and institutions are adequately served with broadband?

IS MORE DEPLOYMENT FUNDING NEEDED?

Let's consider household access first, independent of affordability. Following are some back-of-the-napkin calculations to estimate the magnitude of the deployment challenge.

The FCC reports that, as of 2019, 87.2 percent of the U.S. population had access to fixed, terrestrial broadband service of at least 250 Kbps/25 Mbps. The FCC's broadband

availability data has been widely and justifiably criticized (more on this later), and the 87.2 percent is almost certainly an overestimate. However, given that 86 percent of the U.S. population lives in metropolitan areas, it isn't completely unreasonable, either.

It's probably fair to assume that

- 250/25, even if it's only an advertised speed, constitutes adequate service, at least for today.
- Any network capable of 250/25 speeds is also capable of being economically upgraded to higher speeds in the future, because clear upgrade paths exist for both HFC and fiber to the home (FTTH).
- Around 80 percent of the population has access to 250/25 service.
- A small percentage of U.S. households – let's say 3 percent – is too remote and off-grid for terrestrial broadband to be a realistic option.

That leaves about 17 percent of the population in areas that are possible targets for subsidized broadband deployment.

In the Rural Digital Opportunity Fund (RDOF) auction held in fall 2020, the Rural Electric Cooperative Consortium (RECC) won \$1.1 billion to serve 618,000 locations with fiber broadband – a subsidy averaging about \$1,800 per premises. RECC participants are advised by a consulting firm with successful experience building fiber to the home in unserved and underserved areas, so the amount awarded to RECC is likely a reliable estimate of the subsidy actually required. Because electric cooperatives cover about 75 percent of the U.S. geography, and have similar advantages in terms of being able to build broadband efficiently, this subsidy is likely applicable to many other underserved areas.

At \$1,800 per premises, building fiber to the home to 22 million households – 17 percent of the nation's 130 million total – would require subsidies of roughly \$40 billion. This is probably an overestimate, because it



assumes that all 22 million households would require subsidies, which almost certainly is not the case. (Some FTTH deployers, including the consulting firm advising RECC, have built networks in extremely rural areas without subsidies, and argue that subsidies are rarely required. In addition, not all 22 million households are in rural areas.)

The USF high-cost program has an annual budget of about \$5 billion, and the RUS spends something less than \$1 billion a year in broadband grants. (Another \$1.3 billion in broadband grants, \$1 billion of it designated for tribal lands, just became available in the December 2020 COVID-19 relief bill, but this is a one-time allocation.) The RUS also makes subsidized loans.

At about \$6 billion per year, therefore, the entire United States, except for the most-remote 3 percent, could have access to adequate broadband in seven years or less. In fact, \$20 million of the required \$40 million is already designated for broadband deployment in the RDOF.

More money would get the job done sooner. In his campaign for office, President Biden pledged to invest an additional \$20 billion in rural broadband, and this could speed up the timetable. But these calculations suggest that the digital divide, at this

point, is not primarily attributable to a lack of public subsidies. Rather, it is attributable to the way subsidies are allocated and spent and to rules that limit competition.

➔ **Current levels of broadband deployment subsidies should be maintained or increased over the next five years, but policymakers will need to change the way these subsidies are distributed.**

A problem with current funding mechanisms is that the major source – the USF – was established to support telephone service, and its fees are assessed as a percentage of voice service revenues, a rapidly declining base. The base for USF must be broadened, and now that disbursement of the funds is used primarily for broadband deployment, it might make sense to add internet service revenues to the base. Several other approaches have also been suggested.

➔ **The base for the USF needs to be broadened and made sustainable.**

RURAL DEPLOYMENT

Most of the broadband deployment shortfall in the United States is outside metropolitan areas. Small towns and unincorporated areas are far more likely

than metropolitan communities to have inadequate broadband or none at all.

Even outside metropolitan areas, the shortfall is predominantly in the traditional service areas of the price-cap (large) carriers. Many small, independent telcos used USF high-cost support and RUS-subsidized loans to build out fiber to the home, or at least to the neighborhood, long before the FCC began trying to encourage broadband deployment. Price-cap carriers did not generally build fiber to the home in nonmetropolitan areas.

Failing to build fiber did not help the price-cap carriers any more than it helped their customers. Frontier Communications, a large rural provider, admitted when it was forced into bankruptcy nearly a year ago that “significant underinvestment in fiber deployment and limited enterprise product offerings have created headwinds that the company is repositioning itself to reverse.”

The FCC has gradually shifted its approach to the administration of its high-cost program. First, it tied high-cost subsidies to broadband deployment. Next, it allowed non-incumbents to bid for support in areas where price-cap carriers had turned down offers of support. Finally, it transitioned nearly the entire program to an auction system. It also raised the broadband standard to 25 Mbps/3 Mbps – a standard the RUS has also followed.

These were all positive steps. However, they didn’t go far enough.

First, the 25/3 standard was designed to allow telcos to avoid modernizing their networks. Families trying to work and study from home have found 25/3 service inadequate for today’s world. When the standard is raised, as it inevitably will have to be, areas that received high-cost support to bring their networks to 25/3 will have to be subsidized once again to bring them up to par. Setting a symmetrical gigabit standard will require deployers, in most cases, to build fiber networks, which can easily be upgraded to even higher performance levels.

➔ **Except in the most remote areas, the standard for**

publicly subsidized broadband networks should be set at 1 Gbps symmetrical or higher to ensure that public investments will be usable for a generation or longer. Requirements for latency and reliability should also be set at a high level.

Second, the FCC has not enforced the requirements it imposed. Large carriers have accepted high-cost funding that entailed broadband buildout requirements (sometimes at only 10 Mbps/1 Mbps) and then failed to meet those requirements. In addition, the preliminary results of the first RDOF auction, in fall 2020, have engendered skepticism about how some of the recipients can meet the performance goals they set. (See “FCC’s RDOF Auction Dissected” on p. 8.)

➔ **The FCC must vet high-cost program recipients to ensure their plans for achieving broadband standards are realistic. It should hold them to account for meeting their obligations, and claw back and discontinue funding for those that fail to do so. Other grantors should follow similar policies.**

One obstacle competitive providers have faced in building out rural broadband is the difficulty of sourcing backhaul to the internet. In some cases, the only backhaul fiber they can lease is owned by the carriers they are trying to compete with. The BTOP program in the 2009 stimulus package financed \$4 billion in middle-mile fiber, which went a long way toward alleviating this problem. Since that time, private companies have built even more middle-mile fiber, and backhaul prices have fallen substantially. There is no longer a need for a massive program like BTOP, but targeted middle-mile projects may be needed to make some projects feasible.

➔ **Public subsidies for broadband should finance fiber backhaul to the internet where necessary.**

Finally, connectivity for schoolchildren remains a severe

problem. Pre-pandemic, this was called the “homework gap.” During the last year, there has been a complete learning gap for many children who cannot access the internet from home. School districts have responded by lending Wi-Fi hot spots to children, sending Wi-Fi-equipped school buses into unserved neighborhoods, and engaging in similar heroic measures. But these measures are only Band-Aids, as they rely on cellular data networks that aren’t designed for this type of use. Children should have better options.

An obvious solution is to expand E-Rate, a component of the USF that subsidizes the connection of schools and libraries, to cover connectivity for students. Until recently, the FCC argued it had no authority to use E-Rate funds for this purpose, but Acting Chairwoman Jessica Rosenworcel has now requested comments in response to three petitions for emergency relief from this prohibition. A bill to increase E-Rate funding and authorize its use for this purpose has been introduced to the Senate.

➔ **Congress should pass legislation explicitly authorizing the use of E-Rate funding to connect households with schoolchildren to the internet.**

MAKING BROADBAND AFFORDABLE

There’s a huge gap between Microsoft’s 2018 count of U.S. residents who didn’t use the internet at 25 Mbps download speed (163 million) and the FCC’s contemporaneous estimate of residents who had no internet access at this speed (18 million). Yes, the FCC’s maps are terrible (more on this later!). Certainly, many more than 18 million people lacked access to 25 Mbps broadband. Others (judging from my own experience) probably get 25 Mbps speeds at some times and not others. And perhaps some people still don’t need or want high-speed internet access. But it’s likely that the bulk of the 163 million wanted 25 Mbps broadband (or better) but simply couldn’t afford it – so they didn’t subscribe to broadband at all, or they

subscribed to a “budget” service tier, or they subscribed to DSL or fixed wireless when they would have preferred cable or FTTH, or they relied on a cellular Wi-Fi hot spot.

Broadband may be unaffordable for two reasons. First, people are living in or near poverty and can’t afford broadband at any price that would cover its costs. This is not specifically a broadband issue, but it must be addressed if people are to have opportunities to learn, work and participate in society.

The Lifeline program, part of the USF, was designed to help people afford basic voice service and has been extended from landlines to smartphones. All aside from the fact that the previous administration was hostile to the program and made it more difficult to access, Lifeline is inadequate in scale and design to help poor people afford good broadband.

The December 2020 COVID-19 relief bill includes \$3.2 billion in emergency broadband benefits, which will reimburse providers for extending discounts of up to \$50 per month to low-income households. This approach is more helpful, but it has limitations: It will last for only six months past the end of the current health emergency, and providers’ participation is voluntary. Whether all providers will participate remains to be seen.

➔ **Congress should enact a permanent broadband benefit paid directly to eligible households and used by them to pay any broadband provider. It can be administered similarly to benefit programs designated for food, heating or education. The amount of the benefit should be sufficient to pay for adequate (not “budget-tier”) broadband.**

COMPETITION

The second, and more important, reason broadband is unaffordable is the lack of competition in most areas of the United States. Broadband prices are lower in countries that have more competition and in parts of the United States that have more competition. Often, even the

The COVID-19 relief bill includes \$3.2 billion in emergency broadband benefits, which will reimburse providers for extending discounts of up to \$50 to low-income households.

threat of competition is enough to push broadband prices down.

Like other utilities, communications service was once considered a “natural monopoly.” As a result, state and federal governments regulated telcos’ fees and terms. Since the 1996 Telecom Act, which aimed to promote competition, these regulations have been gradually relaxed – for example, in some states, incumbent telcos are no longer obliged to act as carriers of last resort. Broadband service has been exempted from regulation as an “information service”; even when the FCC briefly recategorized it as a communications service, it forbore from regulating prices.

In effect, residential broadband providers in many parts of the United States enjoy the benefits of monopoly without the drawbacks of regulation. Except in large and affluent markets, households usually have access to, at most, a DSL provider in the low end (often not meeting even the 25/3 standard) and a franchised cable provider in the high end. In recent years, alternative providers – including wireless ISPs – have succeeded in offering more competition, but most of this competition is in the low- to mid-range of the residential market. There is not a lot of competition for truly good broadband. The lack of competition is responsible for high advertised prices and for extra charges above the advertised price, such as those resulting from bandwidth caps. Increased competition would lower prices and also reduce the need for the broadband benefits described above.

Competition is a tough nut to crack precisely because, in smaller and poorer markets, communications networks are still close to being natural monopolies – that is, there may be no way to recoup the costs of building out a competitive

network. However, government policies have made competition even more difficult than it needs to be, and these policies can be reversed.

The anticompetitive provisions that have received the most attention are state laws prohibiting or restricting public entities and electric cooperatives from building and operating broadband networks. States have lifted most of the restrictions on electric co-ops in the last few years, but restrictions on municipalities remain.

There is no justifiable reason for these restrictions. True, some public networks have failed – but so have some private networks. On the whole, municipal broadband networks have been successful and popular, and they have prodded incumbent operators to improve quality and reduce prices.

Some municipal networks have carried competition even further by opening their infrastructure to multiple service providers. As more providers join a network, they push prices down to the marginal cost of providing service, and monopoly profits disappear.

➔ **Congress should clarify and safeguard the right of municipalities and municipal utilities to finance, build and operate broadband networks.**

Another restriction on competition involves federal funders’ reluctance to “overbuild.” A potential deployer may be prohibited from receiving subsidies to build in an area already served by broadband, especially if the previous deployer received federal subsidies or loans. (Lenders, such as the RUS, don’t want to jeopardize their outstanding loans by funding competitors to their borrowers.)

Funders justify these restrictions by saying they need to address unserved

areas first. However, the restrictions sometimes result in *denying* funding for unserved areas. Unserved areas are often isolated pockets surrounding a served town, and no deployer can economically serve the unserved pockets without also serving the town.

These prohibitions are unnecessary. A well-served area does not invite additional competition, even if subsidies are available. Competitors will invest in building a new broadband network only if residents are dissatisfied with the quality and/or price of the existing broadband offerings. In addition, protecting subsidized areas from further competition incentivizes providers to bid for subsidies in order to “squat” on those areas and fail to serve them.

➔ **Federal broadband subsidies should not be made contingent on proposed service areas being unserved or having previously received subsidies.**

Of course, the quality and price of any existing broadband service in the area should be considered in evaluating the proposer’s business plan.

Finally, rules about which types of entities are eligible for federal subsidies can limit the potential for competition. Until recently, almost all subsidies went to incumbent telcos. The FCC and RUS have liberalized these rules in recent years, opening up broadband subsidies to municipalities, electric co-ops, WISPs, cable companies and others. Even though FCC support is required to go to eligible telecommunications carriers, the agency has simplified the process of becoming certified as an ETC. The agencies should continue in the direction of liberalizing access to subsidies.

➔ **Any entity that can demonstrate technical and financial capacity to build and**

operate its proposed network should be eligible to apply for broadband grants, loans and other subsidies.

MAPPING

No discussion of broadband policy would be complete without considering the national broadband maps. The existing maps have several serious problems: First, broadband coverage is reported by the providers, which have an incentive to overstate their coverage and service quality. Second, the maps report advertised speeds, which have only a notional relationship to actual speeds. Third, the maps are not granular enough; partially covered census blocks are reported as fully covered. Finally, the maps do not report important aspects of service, such as latency or reliability.

In the current policy environment, the maps are worse than useless: Their inaccuracies have prevented broadband buildouts from occurring in places where they are needed.

If the above policy recommendations were implemented, the maps’ deficiencies would cause less harm. Without prohibitions against overbuilding, for example, the maps would not stand in the way of valid projects being funded.

However, accurate maps are still needed for practical and policy reasons. They would guide potential broadband deployers in determining where to invest their funds, and they would provide reliable estimates of the nation’s progress toward full broadband deployment.

Congress has issued directives for fixing the maps, and in the December 2020 COVID-19 relief bill, it provided enough funding to fulfill the directive.

➔ **The FCC must develop and maintain a granular, accurate, up-to-date broadband map that is correctable through crowdsourcing, and Congress must actively oversee the progress of the mapping effort.** ❖

Masha Zager is the editor of BROADBAND COMMUNITIES. Contact her at masha@bbcmag.com.

REGISTER NOW

SPECIAL DISCOUNTED RATE

\$350 Use VIP Code: **Houston2021**
(Save \$600 off regular Summit price of \$950)
 Offer expires March 31, 2021




The Leading Broadband Event for
Multi-Housing, Commercial Properties, and Communities

Broadband Communities 2021 • SUMMIT

September 27 – 30, 2021
HOUSTON, TX
 Marriott Marquis Houston

TO SPONSOR OR EXHIBIT: email: irene@bbcmag.com | phone: 505-867-3299
twitter.com/bbcmag

877-588-1649 | www.bbcmag.com