In partnership with:

Sponsored by:

Community Broadband Snapshot Report

Revving the Community Broadband Economic Engine

Craig J. Settles

craig@cjspeaks.com
www.cjspeaks.com

August 2019

Executive Summary

After more than a decade and quite a few BILLION dollars in subsidy payments to giant telecom and cable companies, is broadband an economic development engine for a town, city, or county? More specifically, is community broadband a worthy investment of time and money?

International Economic Development Council (IEDC) members and other economic development professionals answered over 50 questions regarding community broadband, broadband policy, and economic development. Survey respondents provided a snapshot into the complex world of broadband deployment and several factors influencing the use of this infrastructure.

This survey dovetails nicely with the Senate's recently passed Measuring the Economic Impact of Broadband Act. It was co-sponsored by Sens. Amy Klobuchar (D-Minn) and Shelley Moore Capito (R-W.Va.) who co-chair the Senate Broadband Caucus. Klobuchar said, "The purpose of this legislation is to use accurate and reliable data to prove how critical broadband deployment is to our economy."

Taking a hiatus after the 2014 survey, the 2019 analysis report addresses 1) the state of broadband, 2) broadband's impact on local economies, 3) broadband-driven education and healthcare, and 4) community broadband money matters.

The participating economic development professionals weighed in on:

- The state of competition in broadband;
- Availability, affordability, reliability;
- Personal economic development;
- Out of the box thinking about money matters;
- State regulations and restrictions;
- 5G – spawn of Satan or the technology Age of Aquarius;

The earliest community broadband networks such as Thomasville, Georgia, Danville, Virginia, and Wilson, North Carolina had economic development as a main driver. It is still a leading driver for the over-700 municipalities and counties, and over 100 electric co-ops, that have built jurisdiction-wide and limited-reach networks.

Besides the impacts of public-owned broadband on economic development, private-sector electric co-ops and wireless ISPs (WISP) are expanding broadband's coverage and boosting local economic development. WISPs predominantly serve rural areas, but they are starting to pop up in urban communities as well.

The 2014 survey of IEDC members started treating broadband-driven education and healthcare (now telehealth) as greater parts of the local economic development picture. This year's survey expanded with more questions on both topics.

On broadband planning teams, educators and healthcare stakeholders are likely participating more in discussions on these topics. But some survey participants indicate that their medical communities actually are leading broadband planning efforts.

The final section of the survey asks questions regarding business models and funding for community broadband. Participants give a thumbs down on state restrictions and bans on community broadband networks. The open-ended question about the potential local economic value of 5G completed the survey.

One caveat for readers. "It takes a little longer than we would like to be able to measure impact because economies in general are not static," says Gene Scott, General Manager of Wilson, North Carolina's Greenlight public broadband network. "You have to dig deep to figure out how much positive economic impact resulted from the network, and how much was driven by general economic conditions."

The bipartisan legislation passed by the Senate should "ensure that we have more reliable, publicly available economic data in order to make informed decisions about expanding broadband, connecting our communities, and keeping us competitive in an increasingly digital world," states Sen. Klobuchar.

Local economic development officials are a key constituency for gathering data to meet this objective. Who knows more about broadband's impact on local economies than these professionals. It seems that federal and state agencies start gathering broadband data first with large companies - and communities are an afterthought. Reverse that. Start with the local experts and communities. They own the problem.

I.   The state of broadband

A [study done for the California Public Utilities Commission](#) by a Boston-based consulting company came back with a damning assessment of broadband in the state of California.

"Corporate choices made by AT&T, Verizon, and [others]…created the growing divide between relatively modern telecoms infrastructure in affluent urban and suburban communities, and the decaying infrastructure in poor and rural ones. The result is 'deteriorating service quality', 'persistent disinvestment', an 'investment focus on higher income communities' and an 'increased focus on areas most heavily impacted by competition.'"

In varying degrees, this is the American Internet dream-turned-nightmare in most of the 50 United States. Community broadband – highspeed Internet networks owned by municipalities, public utilities, electric and other co-ops, wireless ISPs (WISPs) and public-private partnerships – is a main answer to this nightmare.

In June 2019, International Economic Development Council (IEDC) members and other economic development professionals were recruited to provide feedback through a survey about broadband and broadband-related issues.

This year, a significant portion of the survey respondents are from jurisdictions that are in monopoly markets (18% report there is one dominant telecom or cable company, no meaningful competition) or duopolies (21% say there's only one dominant telco and one dominant cableco). These percentages represent a slight increase since 2014 from those working in monopoly markets, but a reduction of almost half of those working in duopoly markets.
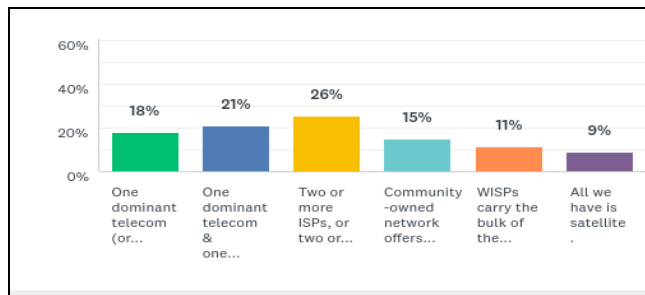
15% of respondents indicate their community-owned broadband networks offer competition that keeps prices affordable and quality high. That's up from 3% during the 2014 survey. 2019 is the first year respondents were asked about wireless ISPS (WISPs), and 11% say WISPs carry the bulk of the broadband load in their jurisdictions. Unfortunately, 9% of respondents say that all constituents have is satellite Internet service.

This also is the first time gathering feedback about electric co-ops. While there 260 telephone co-ops that are capable of providing broadband service to subscribers, the media, legislators, and a growing number of communities are focused the electric utilities. These co-ops serve 42 million in 88% of counties in the United States. In 2014, there may have been half dozen co-ops offering broadband services. Now there are over 110 that have or are building networks.

Survey respondents were asked about the source of their wireless and wired infrastructure. Respondents could select several answers, so the numbers these charts add up to more than 100%.

Wireless infrastructure

35% of respondents report that their jurisdictions have, or are currently building, public wireless broadband infrastructure, which is significantly more than the 8% reported in 2014. The increase likely is due to wireless infrastructure tech becoming faster, more secure, and more reliable. 6% say they have wireless networks that were built through public private partnerships.
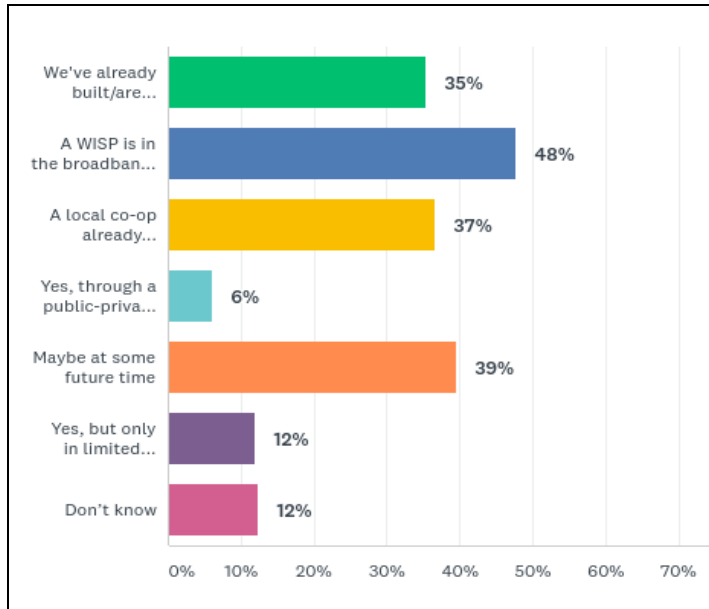

Another 12% of this year's survey participants indicate that their communities deployed wireless technology in "limited-reach" municipal networks, meaning, strategically placed in parks, concert venues, government facilities, and other city/county locations.

48% of respondents indicate that WISPs are notable players in broadband. This includes networks already built, and those being deployed either as pure wireless installations or part of a hybrid wired/wireless deployments. Furthermore, 37% of respondents indicate co-ops are building wireless too.

Fiber infrastructure

In 2019, 15% of respondents say they have built or are building community-owned fiber networks, which is close to the percentage reported in 2014. This year, 12% of survey respondents say their community relied on a public private partnership for their networks, which is three times the percentage of five years ago. The 34% of respondents

who state their communities are building limited-reach fiber networks is twice the percentage as the last survey.
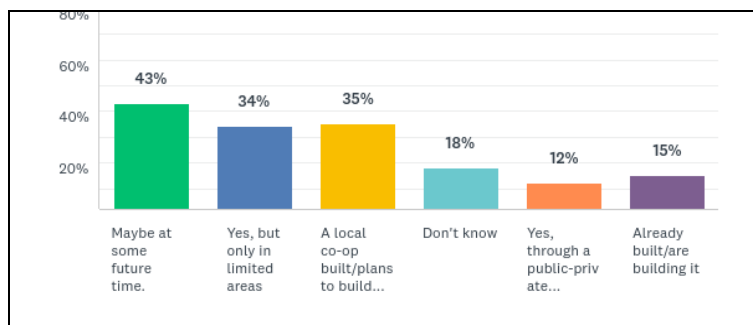
35% of EconDev professionals say co-ops of all types are building or have built fiber networks. State legislators nationwide are passing bills that are driving this co-op trend.

They are "passing new laws that enable electric cooperatives to expand high-quality Internet access," writes Katie Kienbaum at the [Institute for Local Self-Reliance](#). "Much of this legislation has authorized co-ops to deploy broadband infrastructure. Other bills have removed restrictions that previously prevented electric co-ops from providing Internet access."

43% and 39% of respondents (respectively) expect to wait and see before deciding to deploy fiber and wireless infrastructure. I suspect the increase of co-op and WISP activity, as well as the increase in public private partnerships, is causing these respondents' communities to wait for the next 6-to-12 months before making a commitment to muni networks.

Availability

In discussing broadband availability, it is important to frame the discussion in terms of what constituents actually are receiving at their doorsteps. Incumbent-supplied data measured in terms of "speeds up to" or "where advertised" are self-serving and weak indicators of a community's real needs. In the incumbents' presentation of data, just one home receiving broadband in a census track allows incumbents to claim the entire track has broadband.

In the 2014 survey, 35% of respondents felt most of their constituents had good availability, and almost 25% believed at least half of constituents had good broadband. Another 25% believed most constituents had at least basic broadband above dial-up and a notable 15% feel they have poor-to-no broadband everywhere. 28% of that survey's rural respondents, however, said they had just spotty availability everywhere.

This year, I probed a little deeper regarding availability.

What percentage of homes in the respondents' jurisdictions can physically get broadband service to their doorsteps, whether or not the homes actually subscribed to the service? 13% of respondents estimate that just 20% or less of their residents physically are able to connect to an ISP. 41% of those surveyed feel that half of residents can connect to some form of broadband services.

Broadband to the door
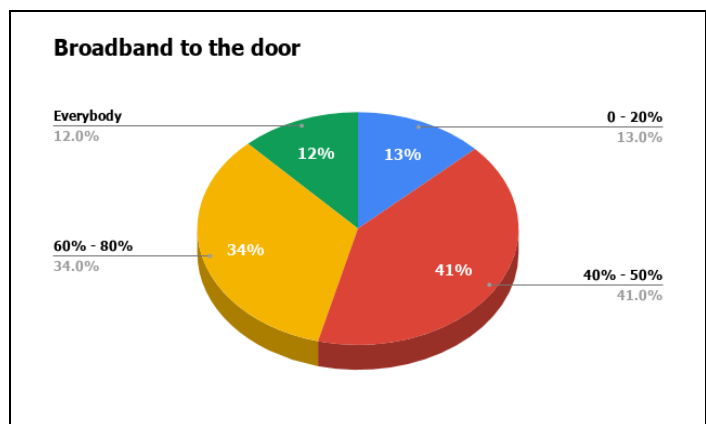
A lesser percentage (34%) estimate a sizable number of constituents have broadband in the door, as much as 80% of residents. There were only 12% of respondents who believe nearly all of their residential constituents have broadband available. This is a major disappointment! After paying billions (literally) of dollars to companies such as AT&T and Verizon EVERY SINGLE YEAR to enable broadband, why doesn't everyone have broadband to the home or premise?

Broadband to the premise
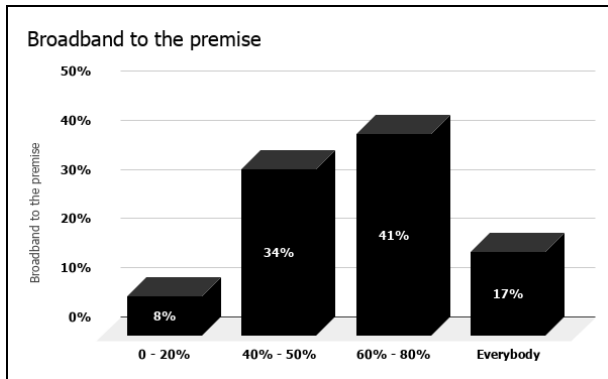
When respondents were asked about broadband coverage for the businesses in their jurisdictions receiving broadband to the premises, the results are better. But the same question persists - after spending so much money in subsidizing the large incumbents, why don't taxpayers see better results?

41% of respondents believe 60% - 80% of their businesses have broadband to the premise.

The need for speed
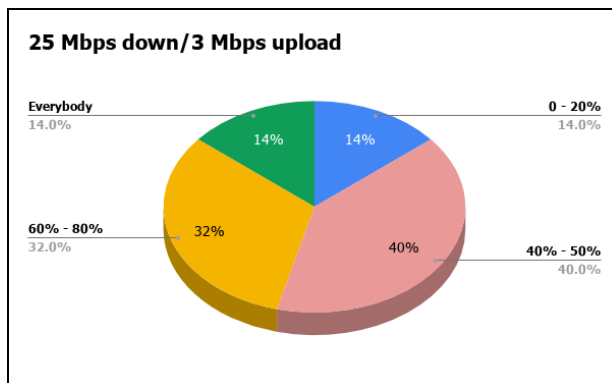
Survey respondents weighed in on whether or not broadband speeds in their jurisdictions met the Federal Communications Commission (FCC) definition of what constitutes acceptable broadband speed - 25 Mbps download/3 Mbps upload. In reality, if you depend on FCC maps to determine if your community has broadband, be forewarned. Communities might do better relying on a Ouija board.

FCC data is riddled with errors and fundamentally overstates coverage. Take North Carolina, for example. FCC data shows that "nearly all of urban North Carolina has access to broadband and about 97 percent has access to higher speeds of 100 Mbps/10 Mbps," according ILSR. "[However] more than 15 percent of rural North Carolina is entirely without broadband and more than 24 percent lacks access to speeds of 100 Mbps/10 Mbps." Contrast that to Wilson, NC, (pop. 49,610), whose Greenlight municipal network offers its citizens a Gigabit symmetrical speeds for just $99.95.

Based on responses from this year's survey question regarding how many constituents meet the FCC's definition of broadband, it seems the residential side of the coin hasn't improved much from the 2014 survey responses. The results for businesses are slightly better than residential.

Conversely, municipal-owned and operated networks (as well as those owned by co-ops) have been consistently out-performing networks offered by giant companies such as Verizon, Comcast, AT&T, and others. In fact, six of the 10 fastest internet service providers in the United States are either directly run by a local community or involve some form of partnership between the public and private sectors, according to a new study from PC Magazine.
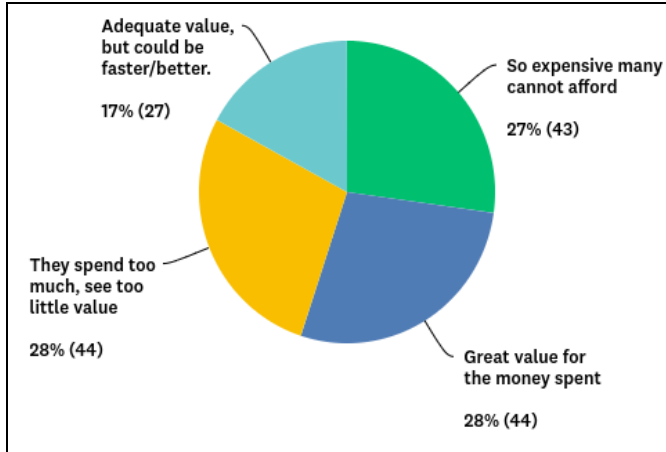
It seems that when many communities talk about broadband quality in their area, they often are referring to network speed. But in reality, communities need to focus on reliability as much or more than speed. If kids are relying on the network to take their finals, or parents are relying on telehealth to keep them alive, being 99.99 certain that their network won't go south tomorrow matters. A lot!

The percentages of businesses that have reliable networks is similar to homes represented here.

High relaibility, min downtime

Category	Value
0 - 20%	13%
40% - 50%	34%
60% - 80%	32%
Everybody	21%
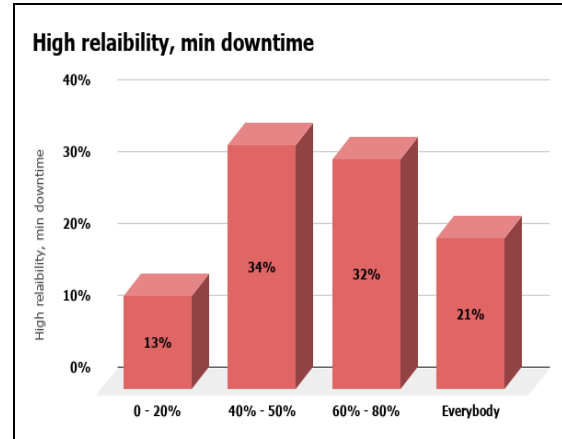
Affordability, on the other hard…

Broadband availability is important, of course, but it also is important that broadband be affordable so subscribers get good value for the amount they spend for services. In 2014, many respondents reported that their constituents had at least basic broadband available, but the value subscribers got with that service was not satisfactory. Only 16% felt their constituents got great service for what they paid.

Adequate value, but could be faster/better. 17% (27)

So expensive many cannot afford 27% (43)

They spend too much, see too little value 28% (44)

Great value for the money spent 28% (44)

In this year's IEDC survey, 28% of respondents felt their constituents got great value for the money they spent for broadband. However, 27% say constituents pay too much for too little. Another 27% feel broadband in their area, if they can get it, is so expensive many cannot even afford to subscribe. 17% are happy they can get broadband but feel they should be able to get faster speeds and better service.

Barriers to broadband

A lot has been written about barriers to increase broadband deployments. Respondents to this year's survey picked what they perceived are the biggest barriers to residential and business access. *Percentages may total greater than 100%.*

A deal-killer for many residential constituents is the price for broadband relative to the perceived benefits that they get from the service. Since a lot of respondents are from rural towns and counties, the sparse population is a big culprit leading to the high prices.

The lack of competition among ISPs also leads to higher prices, but this is true in urban as well as rural areas. Although collusion on pricing is illegal, you really see large incumbents compete with each other in urban areas, regardless of a city's size.

The FCC's 2019 Broadband Deployment Report once again ignores the critical issues of broadband cost and affordability as barriers to broadband adoption. The U.S. Census' American Community Survey (ACS) reports that more than 26 million American households lacked broadband Internet subscriptions of any kind - including mobile data plans - at any speed in 2017.

Sixteen million of those unconnected households had annual incomes below $35,000. Sub-$35,000 households were just 31% of all U.S. households, but accounted for 60% of those without broadband.
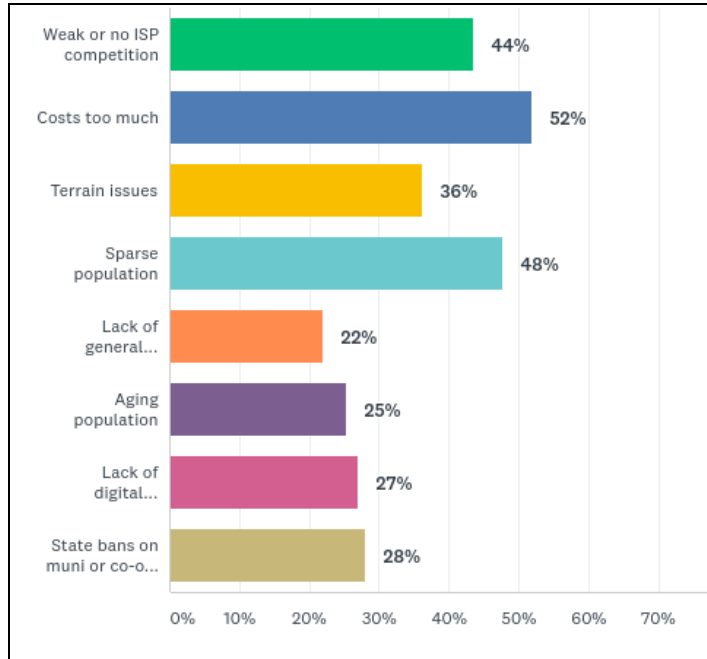
The ACS shows large gaps in broadband access between poorer and better-off residents in big cities, small towns and rural areas alike — even in major metropolitan markets where cable and fiber broadband networks have been fully deployed for years. The physical presence of fast broadband infrastructure in a community is only valuable to the extent that community residents, institutions and businesses can afford to subscribe to it, a fact on which I'm sure most economic development folks agree.

On the business side of the equation, the three top barriers to broadband for businesses are codependent on each other. Rural population density, or the lack thereof, is the crux of the problem because without density it's hard to make the financial case that draws ISPs to the table.

Without core broadband technology, it is hard to attract and retain talented people in the community. And the lack of innovative broadband enhancements after/if a community gets an initial network (because of a weak business case) just starts the circle again.
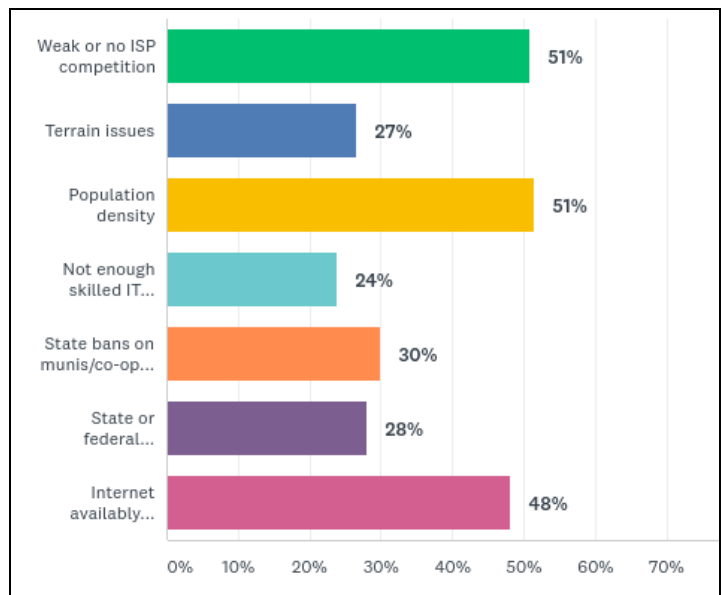
II.   Driving economic development with broadband

In 2009, broadband started becoming mainstream news with President Obama's broadband stimulus investment. With the endless newspaper and magazine articles on the topic, you might expect most economic development professionals to incorporate broadband in their community's economic development plans.

However, community broadband has not been universally accepted as a major economic engine amongst all pros.

New believers
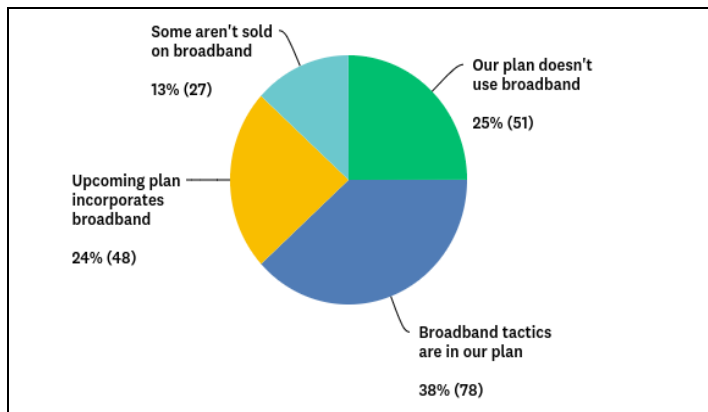
The percentage of respondents who are not sold on community broadband as an economic engine decreased significantly from 29% in 2014 to 13%. However, 38% say broadband is a big part of their current plan, and another 24% are incorporating broadband into their upcoming plans. 25% of respondents report that they do not have plans for using community broadband in their activities, so this stat has changed little in five years.

This IEDC survey started in 2006 as a way to determine how accurate were politicians at determining the economic value of broadband. For over a decade, for example, it has been stated with unwavering certainty that one of the leading economic benefits of community broadband is that it enables users to look for a job. But when I asked economic development pros for several years, "searching for a job" as been their last choice for personal economic development.
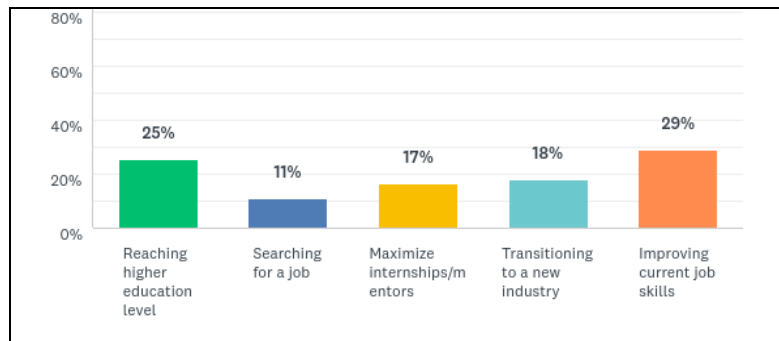
This has not changed much in five years. Improving current job skills (29%) and reaching higher education levels (25%) are leading economic benefits that broadband can produce for individuals.

The pros also feel that the availability of broadband can encourage entrepreneurship among underserved constituents, assuming it is affordable and accompanied by appropriate

support programs. 49% of survey respondents give this a high likelihood of success and 13% have witnessed these types of successes firsthand.

In 2014, 52% of those surveyed felt that mentoring programs are the hands-down favorite to give people from low-income and rural communities the best chance of becoming successful entrepreneurs. Internet and other digital tech training and training in business management also were considered extremely valuable.

The "Economic Development Speed Grid"

The Grid originally was used to verify the likelihood of broadband achieving certain local economic outcomes, such as attracting new companies or college graduates returning home. Respondents would either concur or cast doubt on those likelihoods. I altered the grid in 2011 so the pros can postulate at what speeds certain outcomes likely would happen.

I made three changes this year. First, I raised the grid's minimum speed to 10 - 12 Mbsp. Second, I asked survey takers to weigh in on the impact of symmetrical – meaning, equal download and upload speeds. Today, new Internet services and apps require greater and also symmetrical speeds. Advocating for 10 Mbps is not really broadband for long-term individual or community economic outcomes.

This year, respondents were asked if speeds attract homeowners. "We will have people who live here in Wilson and want to buy a home in another part of Wilson," says Scott. "Or they're considering moving to Wilson from somewhere else. All of them are calling to see if Greenlight is available where they want to live. I think it a telling sign how important broadband has become that this is one of their first questions."

	10-12 MBSP	25-50 MBPS	100-120 MBPS	500 MBPS	1 GIGABIT OR MORE	TOTAL
Attract new big and mid-size businesses	2% 3	17% 34	31% 62	21% 42	29% 57	198
Attract new small biz/start-ups	1% 2	23% 46	38% 76	19% 37	19% 38	199
Improve current companies' business operations	2% 3	23% 45	38% 75	19% 38	19% 37	198
Enable telecommuting/home offices	2% 4	24% 47	40% 80	19% 38	15% 30	199
Revive communities	3% 6	18% 35	43% 84	23% 46	13% 26	197
Recruit homeowners to the community	2% 3	27% 54	40% 79	20% 40	12% 23	199
Enable libraries to offer max service	3% 6	19% 38	43% 84	15% 30	20% 39	197

Communities that might have trouble raising money for community broadband can consider starting with a 25 Mbps or 35 Mbps network initially. Since fixed wireless technology can easily

surpass this, you could start with wireless because it can be deployed quickly, and then use fiber to enhance the network over the next few years.

However, according to the grid this year's survey, 100 Mbps to 120 Mbps may be the starting point that many communities should be striving for, at least in the next year or two. Every community is different in terms of budget, wealth, need, politics, etc. As you do more extensive surveys, community meetings, and pilot programs projects, you can fine-tune what your speed and capacity goals should be.
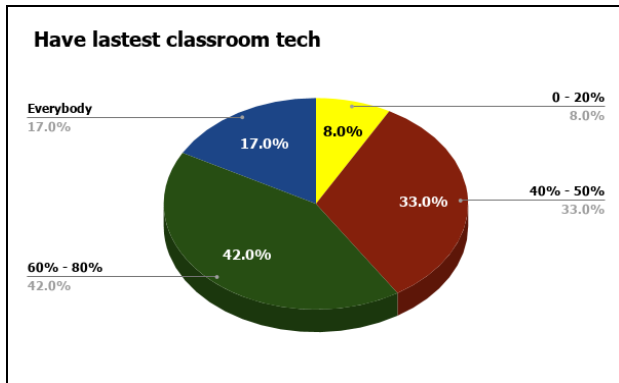
When Danville, Virginia' public utility started its nDanville network in 2005, 20 Mbps would have been considered blazing fast. Current customers have access to 100 Mbps fiber connections, and 1 Gbps and 10 Gbps upon request.

Trends shape broadband infrastructure's need for speed. "Consider trends that are happening today," states Pete Pizzutillo, Vice President of ETI Software. "The telecommuter mentality continues to grow, demanding sophisticated tools such as Skype and Zoom that demand increasing bandwidth for video conference calls and online multimedia presentations."

Pizzutillo continues, "There's an anti-big ISP sentiment. Leaders want them to offer fairer, equitable, and more affordable service. Baby Boomers are moving out of communities that they may have lived in for 30 years and downsizing. In some cases, that might mean moving to smaller towns with affordable living expenses. Millennials are increasingly frustrated looking for work and many are turning to entrepreneurialism. What trends are shaping your needs?"

III.   Broadband-driven education

For the last survey, 42% economic development people felt the broadband in their communities enabled kids to be able to do their homework at home, 23% felt it was adequate but could be better, and 30% reported that the quality that kids received dependent mostly on the section of town where they lived.

Have lastest classroom tech

- Everybody 17.0%
- 0 - 20% 8.0%
- 17.0%
- 8.0%
- 40% - 50% 33.0%
- 33.0%
- 60% - 80% 42.0%
- 42.0%

In this year's survey, 43% of respondents say half of their students have good enough broadband to do homework without having to go to a McDonald's parking lot, and 38% report that possibly a quarter of kids fall prey to the Homework Gap.

The schools appear to be better equipped to leverage the digital revolution than students' homes. 42% of respondents say that as many as 80% of their schools are equipped with the latest learning technology, and another 17% report that nearly all of their jurisdictions' schools have advanced tech tools of the academic trade.

Schools have begun deploying Wi-Fi technology on school buses, giving students an opportunity to maximize long bus rides to and from school. Unfortunately not all schools can capitalize on this. 18% of respondents have a small percentage of buses are equipped with Wi-Fi. 42% may have less than half of their buses rolling with Wi-Fi. Some districts park buses at strategic locations so that some underserved can at least have a shot at completing their homework.

Schools busses with WiFi

- 0 - 20%: 18%
- 40% - 50%: 42%
- 60% - 80%: 30%
- Everybody: 10%
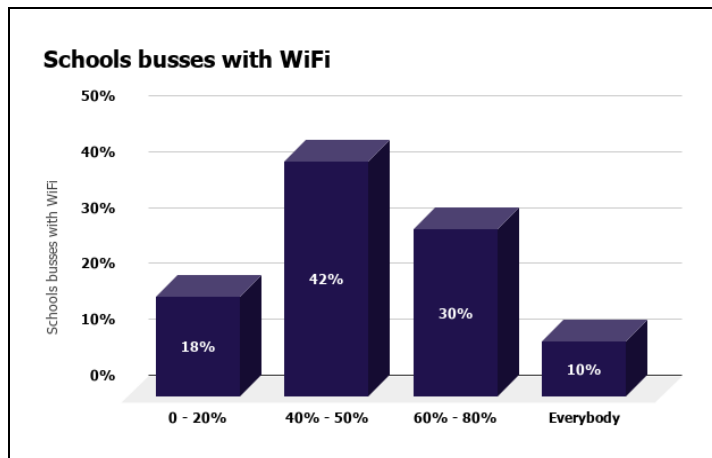
While considering broadband's role in education, and by extension economic development, don't forget about communities that have two- and four-year colleges and universities nearby. There are numerous ways communities can leverage broadband to drive economic outcomes. As mentioned previously, for example, economic development pros advocate using broadband to advance one's current job skills and education levels.

Scott states, "One of my daughters is back in med school. She's able to take a number of classes from home using the city's high speed connection. There's Duke about an hour and a half away from us, there's East Carolina University and Chapel Hill, UNC is less than an hour

away." Wilson's Greenlight brings stellar education from these institutions to subscribers' homes.

Supporting programs

Whether you are deploying broadband for education, telehealth, improving government efficiency, or something else, you cannot just string fiber cable, hang up wireless routers, and be done with the project. Though the economic development team may celebrate completing the network, and then move on to other projects, the job of using the network to foster economic outcomes is beginning.

Survey respondents weighed in on some of the tasks beyond building the network that are necessary for achieving the network's education potential. Ensuring digital literacy among teachers seems to have drawn the most community support according to the responses. However, in reality all of these tasks are deemed important. It is important that economic development professionals make sure community leaders make these tasks priorities.

	NOT IMPORTANT	IMPORTANT, BUT HARD TO IMPLEMENT	CURRENTLY PURSUING THESE GOALS	TOTAL
Parents' digital literacy.	12% 24	59% 117	29% 57	198
Closing the Homework Gap.	14% 27	54% 108	33% 65	200
State, federal grants for education	13% 25	51% 101	36% 71	197
Inexpensive tech for students.	17% 34	47% 94	36% 72	200
Fed, state broadband grant programs.	14% 27	50% 99	37% 73	199
Equipping public libraries with gig	12% 24	51% 101	37% 74	199
Teachers' digital literacy.	9% 17	53% 106	38% 76	199

IV. Telehealth, broadband, and economic development

How important are broadband-driven healthcare and medical services to your economic development? 2014 was the first time I asked IEDC members this question. Telehealth as a phase had not become mainstream yet, but was primarily a healthcare industry term.
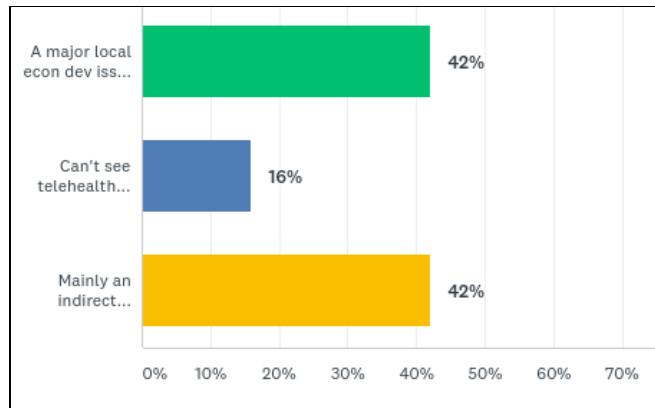

42% of this year's survey participants and 43% in 2014 said telehealth "is a major economic development issue for us." However, 42% also said telehealth is "mainly an indirect economic impact," whereas 28% had the same answer last year. In 2019 only 16% can't see telehealth impacting their local economy.

Two-thirds of respondents in 2014 felt their broadband conditions were not great for producing healthcare-related outcomes that could help communities attract and retain both individuals and businesses. Furthermore, there were higher percentages of respondents who said broadband was insufficient for producing positive telehealth outcomes than for business or education outcomes.

Getting the medical community to participate in broadband planning is improving this year in almost all categories. 36% of respondents say that, to the best of their knowledge, the medical community is participating in broadband planning. That's up from 26% in 2014.

18% say the medical community is leading planning efforts, up from 1% in 2014. 21% of respondents say medical stakeholders will participate if the community starts planning a network. Just 15% do not anticipate any medical community involvement with planning this year.
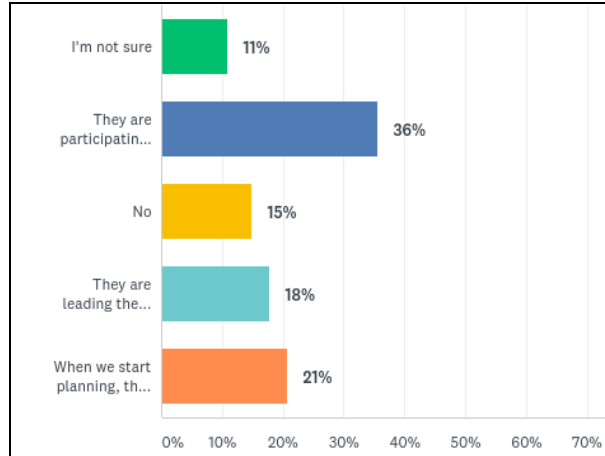

This year I gave survey participants a scenario along with several outcomes that may or may not impact local economies. Respondents envisioned a telehealth hub in which a hospital or other medical facilities create a hub, and community anchor institutions such as schools, libraries, community centers, etc. serve as the spokes from the hub over which various telehealth applications would flow to homes.

Potential telehealth outcomes include slowing or reversing hospital closings, reducing unnecessary visits to the ER, and attracting medical research grants. Respondents rated each outcome from the perspective of its impact on local economic development: 1) more
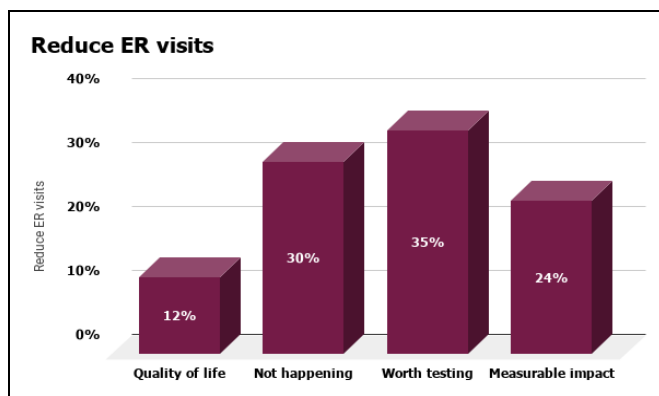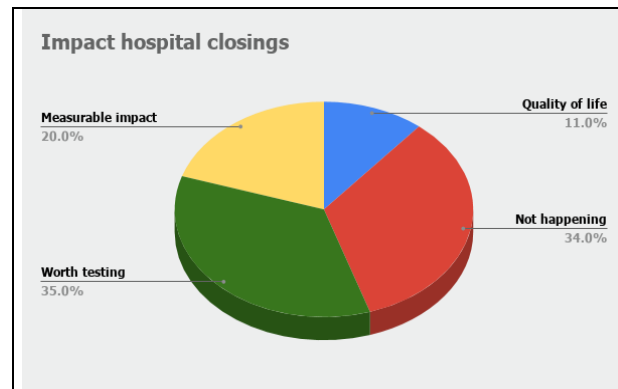
quality-of-life then measurable impact; 2) don't see this happening; 3) not sure of results, but worth testing; 4) measurable impact on local economy.

Needless to say, healthcare professionals would have comprehensive figures on the monetary value of each outcome. But economic development pros bring valuable perspectives to bear in discussions about a community's economic assessment.
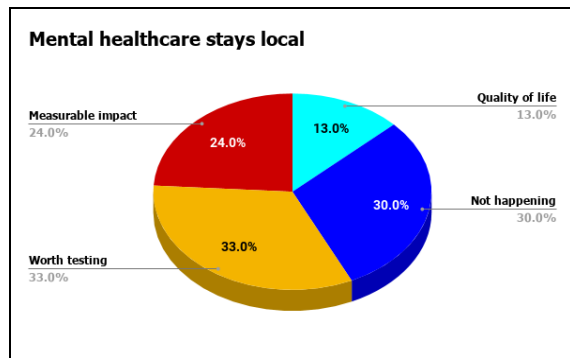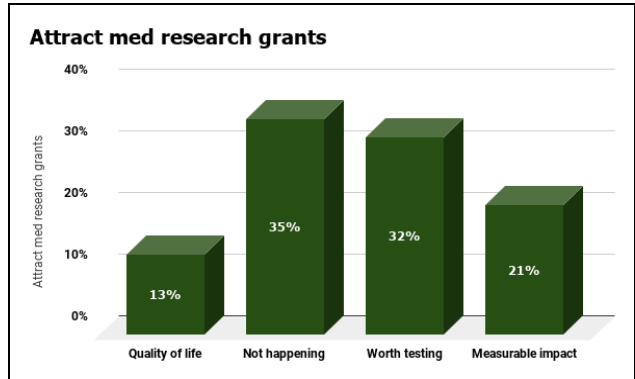
Attract doctors, med professionals

Quality of life 11.0%
Not happening 27.0%
Worth testing 36.0%
Measurable impact 26.0%
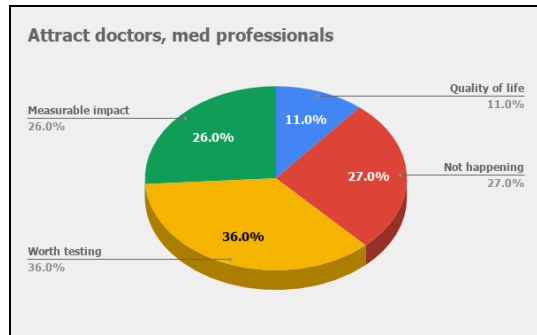
Drawing doctors, medical professionals to our community. There are not enough specialists in certain healthcare professions, especially working in rural and low-income urban communities areas. The economic viability of certain communities depends heavily on the presence of healthcare professionals. 26% of survey respondents feel this would have a definite impact on the local economy, and 36% are willing to test the assumption.

Slowing or reversing hospital closings. Rural America has a crisis as a steady stream of hospitals close their doors or consolidate. Often, hospitals are the largest employer in rural towns and counties. Additionally, the quality of healthcare has a direct impact on the quality of life. As much as vibrant economies impact the bottom lines of these jurisdictions, quality of life can be extra glue that keeps people in the community longer.

Impact hospital closings

Quality of life 11.0%
Not happening 34.0%
Worth testing 35.0%
Measurable impact 20.0%

Reduce ER visits

Quality of life 12%
Not happening 30%
Worth testing 35%
Measurable impact 24%

Reduce unnecessary visits to the ER. "The average cost of an ER visit is $1,200 and comes with an average wait time of four hours or longer," stated a 2015 BlueCross BlueShield of North Carolina newsletter. "A recent study indicated that treating many of these ER non-emergencies at urgent care or retail clinics could save $4.4 billion." Possibly big savings for the community and government.

Attract medical research grants. The Web is filled with info about medical research grants. And there is a constant parade of city and county Requests for Proposals (RFPs) for broadband needs assessments and feasibility studies. As communities complete these RFPs, consider devoting resources to positioning their networks to compete for medical grants. Any grants for millions of dollars should have a notable impact on some local businesses and job creation.
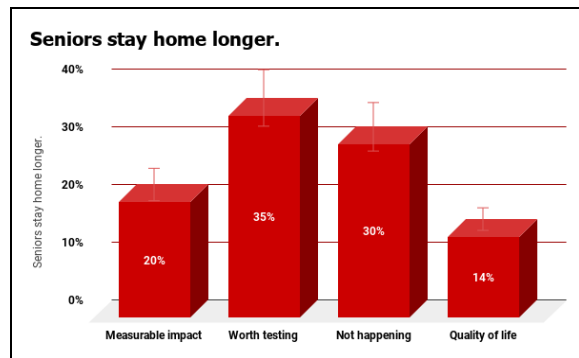

Attract med research grants

Quality of life: 13%
Not happening: 35%
Worth testing: 32%
Measurable impact: 21%

Mental healthcare stays local

Quality of life: 13.0%
Not happening: 30.0%
Worth testing: 33.0%
Measurable impact: 24.0%

More mental healthcare services stay local. "There are 65 million Americans that have diagnosable mental health illness but we have less than half of the psychiatric providers needed to meet that demand," says Encounter Telehealth CEO Jennifer Amis. According to a [Scientific American blog], depression in America costs society $210 billion annually. For every dollar spent treating depression, $4.70 is spent treating related illnesses and $1.90 is spent for lost work productivity and suicide.

**Keeping seniors living at home longer**. Telehealth could enable seniors to add years to their ability to stay in their homes or possibly moving to a nearby senior facility. This will keep a community's senior ecosystem active, seniors can still maintain a social and economic role within the community, and communities can have another incentive to attract seniors who are looking for a change from the urban lifestyle but wanting to maintain ready access to healthcare.

Seniors stay home longer.

Measurable impact: 20%
Worth testing: 35%
Not happening: 30%
Quality of life: 14%

In addition to impacting the local economy, facilitating telehealth on the infrastructure can have a significant impact on the economics of the network itself. "The municipalities and co-ops can offer higher-value over-the-top services to care providers and patients, thus expanding their ARPU [average revenue per user], and make their bids for grant dollars more attractive," says Mark Noble, Senior Vice President of Business Development for Telehealth vender ViTel Net. "You can impress the committees evaluating grant application by offering turnkey healthcare service delivery capabilities as opposed to 'just plumbing' for broadband."

Community broadband money matters

Preferences for community broadband business models have regularly evolved since 1999 when Thomasville, Georgia was one of a few municipal-owned networks. From 1999 through 2007, both urban and rural communities favored municipality ownership directly or through public utilities. In 2008, after many urban muni Wi-Fi attempts failed, governments viewed wireless networks as primarily for government use.
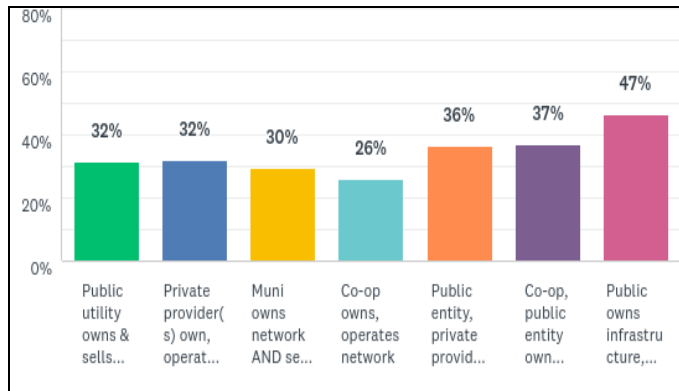
The 2009 broadband stimulus program renewed debates about the role of local government and which business models are best. Fast forward a decade. Economic development pros were asked this year to name the top two models they feel are the best options for their communities. Out of seven models, one was clearly preferred – the local public owns the infrastructure, ISPs sell the services – but among the rest there wasn't an overwhelming favorite.

We didn't have time to explore other models, but this chart reflects some of the popular models currently. Picking a business model is not a cookie-cutter process, so communities need to determine what makes the most sense for their particular situation, demographics, budget, etc. Selecting a "best" model will be an evolving process for at least another few years.

As with business models, there are several ways community networks can be funded. Survey participants weighed in on eight of them. Some are well known in the community broadband space, such as bond measures, banks and conventional financial institutions. Other funding avenues may not be as familiar, and a couple were definitely leading edge ideas. Again, each community is a little different. Funding is not a cookie cutter process either.

	THIS COULD GO EITHER WAY.	NOT LIKELY.	WITH PLANNING, WE CAN DO THIS.	WE'RE DOING THIS NOW!	TOTAL
Community foundations.	18% / 35	40% / 79	36% / 71	8% / 15	200
Economic development fundraising.	14% / 28	42% / 83	35% / 69	10% / 20	200
Bond measures.	17% / 33	38% / 75	34% / 68	12% / 23	199
Local companies, homes pre-pay for BB	18% / 36	41% / 81	33% / 65	8% / 16	198
Local people, businesses buy stock.	18% / 36	38% / 75	36% / 71	9% / 18	200
Conventional bank, financial institution.	15% / 30	39% / 78	34% / 68	12% / 23	199
Create "Opportunity Zones"	20% / 40	31% / 62	37% / 73	12% / 23	198
Option for subscribers to pay for those can't afford service	18% / 37	41% / 83	31% / 63	9% / 18	201

Survey respondents provided feedback on opportunity zones. They give people who owe a lot of capital gains taxes an option to invest those monies into community development. It's a tactic that is apparently proving itself effective, and it could be significantly beneficial to community broadband.

"For those individuals with capital gains that are obviously taxable, this program gives individuals the opportunity to directly influence local economic development of a distressed, high-poverty community," says Ray Kresha, COO of Golden Shovel, an economic development marketing agency.
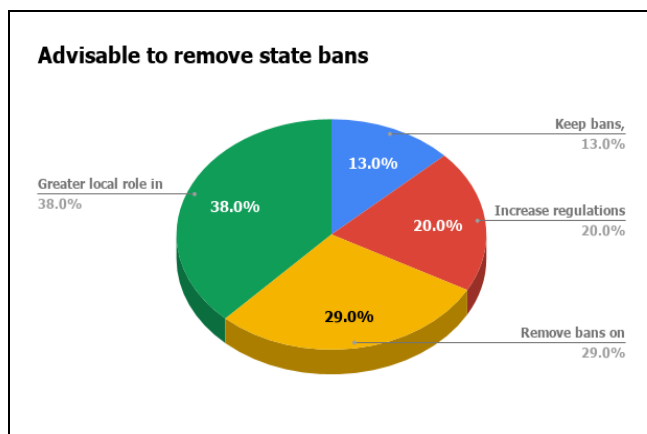
The federal government has deemed certain areas nationwide as opportunity zones. "According to the rules that govern these, individuals or organizations need to create an economic development project," says Kreasha. "High-wealth individuals are typically the investors. The money must stay in a project for 10 years, and the federal government cannot tax those funds during that time period."

If structured properly, investing in a broadband nonprofit that is located in the target community, provides products or services that improve the local economy, and leads to job creation might prove successful. The legal and accounting paperwork must be beyond reproach. There must be services such as digital training and technical support to ensure recipients of internet access maximize that access.

37% of survey respondents favor opportunity zones as one of their two favorite (conceptually) sources for funding broadband, and another 20% feel zones have an even chance of success. Another option for funding, which likely needs some time to gain traction, is the practice of sharing broadband across economic strata. One organization leading the charge for this is Althea.

"In a cooperative ISP [not to be confused with an electric co-op], subscribers are the owners and they have a say in how the network grows and operates," says Debra Simpier. "Because profit is shared by the members, the network's focus shifts to how the community and cooperative members can most effectively use this infrastructure to their benefit. This can lead to more sustainable solutions, especially in the often overlooked low-income and rural areas."

This cooperative option with its more economical total cost of ownership (TOC) to members could allow for policies such as sliding scale payments in which members pay according to their financial situations. Even a barter system might be practical.

Advisable to remove state bans

- Keep bans, 13.0%
- Increase regulations 20.0%
- Remove bans on 29.0%
- Greater local role in 38.0%

When communities do their financial analysis, be aware of state laws that make it difficult to operate networks profitably. Large incumbents loath competition, be it private firms or local governments, so lobbyists strong arm state legislatures into passing laws that limit or prohibit municipalities and co-ops from building broadband networks. Survey respondents clearly feel it's good economics to allow a greater local role In state broadband policies, and almost 30% want to remove outright bans on public and co-op networks.

What does 5G hold

I always posed an open-ended question in the survey. This year, I chose a hot button topic – 5G – to see what economic development professionals had to say.

As Sue Marek, Contributing Editor of FierceWireless says, "There are many falsehoods about 5G that are being circulated." I believe this is a problem because they throw consumers' and local government leaders' expectations out of whack. These false narratives need to "be debunked in order to reset consumer expectations for 5G."

I asked survey participants will 5G networks produce the speed, equality, or the local economic benefits many are claiming, or will the costs of 5G outweigh the economic benefits? On one hand, 5G promises to deliver blazing fast Internet speed (a gigabit or more). On the other hand, there are costs and some of them are beyond financial:

- Cities could lose right-of-way authority, fees;
- Munis might need 2x small cell towers as traffic light poles;
- Small cell tower might need fiber cable and electric power;
- Cities may be required to financially support 5G infrastructure;
- Each carrier may demand it's own small cell tower, and
- 5G may not be financially profitable for carriers in small or rural towns.

You can read all of the survey respondents' un-edited comments here.

Delaware - ahead of the curve

Unknowingly, Delaware's response to this challenge reflects feedback from economic development pros. 47% of survey residents feel that the best business model is when the public entity owns the infrastructure, and ISPs sell broadband services.

"This state of Delaware started with around $5 million a couple of years ago and leveraged that to generate $30 million in overall investment in infrastructure," says James Collins, State CIO. "We used economic development funds to run fiber from our largest city, Wilmington down to Georgetown in Sussex County. We were able to use some broadband fiber and other state funds to run from east to west, from Seaford to Lewes."

A local electric co-op bought some of the state's fiber to connect the co-op's substations, which made it less expensive to build out broadband to members' homes. Several law enforcement organizations paid for fiber links to the state's towers, as did area hospitals.

"These leap-frogging efforts resulted in an expansion of about 300 miles of fiber," says Collins. "This positioned us to do wireless pilots that determined wireless can give the speed that we need." The state then inked a deal with a WISP called BlooSurf to bring broadband to the rural parts of the state, delivering up to a gigabit for businesses. The state owns the infrastructure for five years while BlooSurf operates the service. After that, the WISP fully owns the network.

Conclusion

This report is a snapshot of what is happening as economic developers accelerate the drive to derive significant economic value from broadband technology. Broadband as an asset and an economic engine is catching fire as more communities with their own networks, or through partnerships, take the reins to their broadband futures, many with the goal of boosting their local economies, improve education and advanced healthcare through telehealth.

Consider these national surveys with IEDC as one funnel for getting valuable data so broadband project teams and local stakeholders can make informed decisions. Much additional work has to be done locally to test the assumptions of the media, elected officials, policymakers, and community stakeholders, and then hone in on which broadband strategies and tactics should be implemented.

Survey author

Communities call Craig Settles when they want to use broadband to transform healthcare through telehealth services. Mr. Settles built his reputation by helping community broadband improve economic development, education, and local government. He also is Director of Communities United for Broadband. Follow him on Twitter.

Mr. Settles' consulting services, on-site works, reports, and books help community leaders and stakeholders leverage broadband as an economic driver. He's a nationally known and respected thought leader. Mr. Settles gets communities to ask the right questions so they find the best answers for their specific needs. E-mail today for more information: craig @ cjspeaks.com.

Survey sponsor

ETI Software Solutions specializes in operational software for service and subscriber provisioning, network configuration, inventory control, and performance management for broadband service providers. It's Vision360 software is designed for fiber network operators, including municipalities, utilities, and electric co-ops. Vision360 features seamless order entry and work order management, automatic service provisioning, device inventory and device management, comprehensive network management tools, and add advanced visual analytics to help maximize revenue.

Survey partner

The International Economic Development Council (IEDC) is a non-profit professional membership association dedicated to helping economic developers do their job more effectively and raising the profile of the profession. When IEDC succeeds, their members create more high-quality jobs, develop more vibrant communities, and generally improve the quality of life in their regions. For more information, visit http://www.iedconline.org/