commonwealth connect

Virginia's **BROAD**band Resource

Bringing Broadband to your Community

A Complete Guide for Virginia's Local Leaders

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Version 2.2

Contents

LET'S START AT THE BEGINNING

Who is the Commonwealth Connect team?

The Commonwealth Connect team is THE broadband resource in Virginia. The state's broadband experts – the Chief Broadband Advisor and the Department of Housing and Community Development (DHCD) – have joined forces to create one, cohesive, all-encompassing team with the goal of achieving universal broadband coverage in Virginia.

What's new in Version 2.2?

Version 2.2 has new information reflecting recent legislative changes and updates. These include ways in which localities can use revenues from solar facilities for broadband deployment, an expanded section on establishing a municipal broadband network, and more.

What am I looking at right now?

This is a step-by-step guide designed by the Commonwealth Connect team to explain why and how to get everyone in your community or region access to broadband, or high-speed internet. The guide is designed for local leaders, whether they be local elected, business or concerned citizens, who will work with local governments and internet service providers to bring universal access to broadband.

This guide will be updated continuously, as we get feedback from you, as well as other partners. Be sure to check in often and make sure you're using the most up-to-date version!

Everyone?

Well, hopefully. The Commonwealth is defining "universal broadband coverage" as anything over 95% of homes and businesses. Some communities may have residents that are simply too remote for it to make sense for those folks to be connected as a part of this effort. What we've seen, as we've looked at connection costs across the Commonwealth, is that some areas are able to get nearly everyone online while others are so spread out that it could cost twice as much to get 100% connected as it does to get 95% online. We'll talk more about this later, but it's also worth noting here that another reason for planning for "universal broadband coverage" is so that we're not creating pockets of constituents that are even harder to reach than they were before. So please keep reading.

So what is broadband?

Broadband is any connection that allows data to move from the internet to your device quickly. When it is slow, it's an internet connection but it's not broadband. In Virginia, we define broadband as connections with speeds of greater than 25 megabits per second download – when things load from the internet to your computer or device – and 3 megabits per second upload – which is when you send something from your computer or device out to the internet.

Why do we need to do this?

The pandemic has made it abundantly clear how crucial broadband is in the 21st century. It has become a primary means of school, work, shopping, and communication. Even as we put the pandemic behind us, many of these trends will continue onwards, and those lacking broadband will be left behind.

Broadband was already essential for school before the pandemic. We already knew that children in households with broadband access have better educational and career success – even when you consider all other factors. The advent of online school has only made this more the case, and some aspects of online schooling, such as online homework and virtual classes for inclement weather, were either already here or are now here to stay. The kids in your community deserve just as good a shot at success as any other kids around Virginia do.

Second, this infrastructure is, as we've seen, as critical to modern life today as electrification and indoor plumbing have been for the past century. High-speed internet is essential to local economies, whether it be agriculture, forestry, or the expanding home-based small businesses. Businesses absolutely need high-speed access to the internet, and that now often means access at their employees' homes as well as at the workplace. Local economies benefit from access to quality broadband coverage and high-speed internet brings access to telemedicine and online education opportunities. Additionally, with many jobs staying remote even after the pandemic, broadband connectivity offers the potential for attracting and retaining jobs and workers from elsewhere.

Finally, participation in modern American civic, economic, and social life requires that all of us be able to have the same opportunity to access voting information, local public notices, email, online marketplaces and other modern communication tools as easily as do those who have good broadband connections. Your community deserves to have the same quality of life as connected communities.

Isn't the state going to handle this?

The Commonwealth is here to help in every way we can. We can give advice, we can supply documents like this one and other tools and resources, and most importantly, the Governor and the General

Assembly have allocated millions of dollars in broadband funding opportunities to help make broadband projects in your community happen.

What we can't do is get anything done without local partners. Our grant programs require a private sector partner (usually) and a unit of local government. That could be a single county, city, town, a group of counties, a planning district, GOVA region, etc.

Simply put, local leadership is a key factor in getting your community online. Without that, broadband expansion probably won't happen.

Isn't some consultant going to handle this?

You can absolutely hire a consultant to help you with this BUT you don't have to, and it's important that you have a very clear idea of what you want your consultant to do if you do.

The key things to think about when considering a consultant are:

1. Can I get what we need with some legwork on my part and on the part of those in my community?
2. Have I fully explored the support available for free from the state?
3. What are my specific needs?
   a. Do I just need legal support to manage these relationships?
   b. Do I need technical advice on what's achievable?
   c. Do I need financial advice about my community's resources and available benefits?
4. Do the Internet Service Providers (ISPs) that already serve – or could serve – my area already have the ability to support planning an expansion effort? They may already know what it would take to expand, and simply haven't because of cost concerns – we can help with that.
5. Has this consultant worked with other localities before? If so, can they provide references I can take to the Commonwealth Connect team?

The Commonwealth Connect team wants to help you get as much done as you can for as little expense as possible.

What if it turns out a consultant is exactly what we need?

It's always nice to know exactly what you need. In our experience, hiring a third-party consultant to manage and support your efforts can be very useful. Hiring a third party consultant to design your network build out is rarely a cost-efficient way to get your community covered because your eventual partners will need to do their own design and engineering.

There are some great consultants out there, and as with any large-scale project, due diligence is important. Look for a consultant's work history and reach out to both the Commonwealth Connect team and some of the other localities in which they've worked before you hire them.

Also, make sure you give the Commonwealth Connect team a heads up about your plans. We may be able to help find resources for your planning work.

Isn't Elon Musk or some other tech person going to handle this?

There are lots of developing broadband technologies, and they're all exciting. That said, there is currently no silver bullet technology in the pipeline that is likely to solve the challenges of rural broadband and get your community online in the near future.

Can't everyone already get satellite service?

You hear a lot about satellite broadband. Here's the challenge: current satellite services rely on a comparatively small number of satellites far above the ground, and even though signals are fast, there's no way to speed up the "latency," or the time it takes your clicks and keystrokes to travel up to the satellite, back down to a receiving station, out to the internet, back to the receiving station, back up to the satellite, and back down to you. Phew! This type of service is also very expensive and, as anyone whose service has been knocked out during a thunderstorm can attest, can be unreliable in bad weather.

Elon Musk is putting LOTS of satellites into orbit much closer to the ground to try to solve that problem. And it will. But that creates a bunch of new problems related to the satellites having to move across the sky rather than stay in the same place, the satellites falling back to earth much more quickly, the satellites having to talk to each other, outages between satellites, etc. The service, which is currently being beta-tested in some areas, is expensive and likely to stay that way. Additionally, it is still potentially unreliable in bad weather and is not guaranteed to reach a widespread rollout.

Google, Microsoft, Facebook, Amazon, as well as scientists with the cable and telecommunications industries are all also working on new technology.

The Commonwealth Connect team thinks these people do lots of neat stuff, and don't get us wrong, we are excited to have people thinking outside the box on this, but we aren't holding our breath on these developing technologies, and you shouldn't either.

Isn't 5G cellular service going to solve all this? We have lots of towers already.

While you may have what seems like a lot of towers, you don't have enough for 5G. We are certain. Here's why:

5G, unlike previous improvements in cellular technology, is going to require transmitters to be VERY close together, sometimes as close as a few hundred yards apart. Plus, towers and transmitters don't do anything on their own; they need to be connected by fiber-optic lines.

While 5G may roll out to the Commonwealth's urban cores sometime in the next few years, it likely won't reach anywhere not currently served by broadband service any time soon, and even when it does, your community is going to need a ton of Fiber Optic Capacity to make a 5G network work.

That's the great thing about the work you are undertaking to grow your broadband network. You'll get your community online and in doing so, actually lay the groundwork for things like 5G networks in the future.

So what will an actual broadband network look like in my community?

Unless you know where to look you probably won't notice it. But if you mean, "what kind of infrastructure and technology will you be deploying," that's a much better question.

Ok, what kind of infrastructure and technology will my community be deploying?

While there are lots of different ways to move data around, in the current and near future technological landscape, you'll hear most about two technologies that make sense for most communities to support: 1) fiber optics to the premises (FTTP); and 2) fixed wireless broadband.

Fiber Optics are glass cables that transmit data through pulses of light, and these connections can reach blistering speeds. Fiber to the premises networks tend to be expensive however, and are best-suited for more dense areas. Fiber Networks physically connect homes and businesses to internet infrastructure.

Fixed wireless is different from cellular service; anything you get on your mobile phone is, kind of by definition, mobile. Fixed wireless means transmissions between equipment that is fixed in specific locations, usually a tower and an antenna on your home or business. Fixed wireless networks still require fiber, but that fiber only goes to towers and other transmission sites – the signal travels wirelessly from there.

Ultimately, the Commonwealth Connect team is technology-neutral and suggest that you be as well. If a product, be it fiber, fixed wireless, TV whitespace (which is a specific kind of fixed wireless), or a string tied between two cups, can deliver reliable high-speed broadband in all kinds of weather, with low-latency, and at a reasonable cost- count us in.

Isn't fiber much better than wireless?

Yes and no. Fiber does offer higher speeds, but at much higher capital costs. Fixed wireless technology is gaining ground on fiber every day, but requires that equipment be regularly upgraded as the technologies advance.

Most communities will need to pursue a hybrid approach: some fiber to the denser areas, and to towers, with fixed wireless extending the network out to the less-dense regions.

Our locality is struggling financially – how can our community afford broadband?

That's ok. Really.

First, you probably have the ability to access more money than you think. Later in the guide we'll discuss service districts for broadband and solar siting agreements, which can both be really good ways to raise capital at the local level.

Second, the Governor and the General Assembly, with the support of a broad coalition of stakeholders, are leading the charge for more state investments in broadband. Commonwealth investments in broadband grants to communities and Internet Service Providers (ISP) have grown exponentially in the last few years. The Governor and the General Assembly have been slowly ramping up grant funding from $19 million per year in 2019 to $50 million per year for 2021 for grants to localities – or groups of localities – who are in partnership with a private sector ISP or public broadband authority (as a temporary pilot program – more on this later).

Third, and we'll be able to help to identify these, your community almost definitely has tons of assets to bring to the table. Each will look different, but we've seen communities come together around funding, vertical assets, even volunteer property and land clearing for tower locations.

How do we get those grants?

There are really two state sources of grants: the Virginia Telecommunication Initiative (VATI), which is run through the Virginia Department of Housing and Community Development (DHCD), and the Tobacco Region Revitalization Commission's (TRRC) Last Mile Broadband Program.

Anyone in Virginia can access VATI grants. You can learn more about them on DHCD's website, which is [here](#).

TRRC grants are only available to select communities in Southern and Southwest Virginia. To learn if you're eligible, check [here](#). For background on that program, reach out to your regional TRRC office.

For a full list of Virginia and federal broadband funding opportunities, click [here](#).

You also said federal. What federal funding opportunities are there?

There are lots of federal programs. They tend to work differently from state programs in that the locality does not always need to be involved or even consulted – the ISPs work on them themselves. There may in fact be federal funding already invested in your community for broadband! We will elaborate on this more later, but if you want to read ahead a bit, a [full list of those federal funding programs can be found here](#).

We got money from the federal coronavirus relief bills. How can we use this for broadband?

A lot of federal broadband money came from the coronavirus relief bills. Several federal programs have been established through recent relief packages to directly aid broadband expansion and affordability. Plus, local governments are receiving direct funding for coronavirus relief. We will talk more about this later but always remember that the Office of Broadband Team in DHCD (vati@dhcd.virginia.gov) is here to help access and plan uses for federal dollars.

Shouldn't this be a part of our Comprehensive Planning Process?

Yes, it should be, however, we absolutely don't want you to wait until your next comprehensive plan update to get started on this. You should hit the ground running, and by the end of this process, you'll have plenty of material to include in your next plan.

What's in the rest of this guide?

The rest of this guide includes a brief section to help you make the case to your neighbors and colleagues that this is something you absolutely need to do as a community. You're taking control of your future! That's not as hard as you probably think because, well, getting broadband access is absolutely something you need to do as a community.

Imagine a community nowadays without access to electricity: The only residents they would have would be hermits, lots of cats, and people who really, REALLY love camping. In 25 years, communities without access to the internet will be the same.

I read ahead and some things I found are confusing. How can I get clarification or other help?

Reading ahead? You're amazing! We can already tell you're going to be great at this.

If anything is confusing, reach out to the Commonwealth Connect team! Helping you is literally our job. Shoot us an email at CommonwealthConnect@governor.virginia.gov

So what should we do first?

You're doing it. Keep reading this guide, figure out how far along you are, and take the next identified steps. If you run into trouble, contact the Commonwealth Connect team for help.

BENEFITS OF BROADBAND IN YOUR COMMUNITY

1. **Economic benefits**

   Broadband is a requirement for doing business in the 21st century and the absence of broadband in a community usually means the absence of jobs. Almost every aspect of running a modern business is done online, such as advertising, bookkeeping, restocking inventory, selling directly to customers, and recently, even work itself. Even if the business location itself has access to the internet, companies need their employees to have access at home for teleworking purposes and quality of life. For rural communities who have seen residents leave and 20th century industries close, broadband is a necessity for economic stability and growth. With remote teleworking becoming more common in general, it can even attract workers from elsewhere seeking a different lifestyle or higher quality of life in general.

2. **Social benefits**

   The benefits of broadband for a community are wide-reaching and comprehensive. Communities are safer: with increased connectivity, public safety officials have faster and more dependable communication networks, leading to faster response times. Communities are healthier: telemedicine, or healthcare delivered via video-conferencing, will bring care to remote and underserved patients, bringing down costs and leading to better health outcomes. Communities are wealthier: the moment a home is connected to broadband, the value of the property is estimated to increase an additional 3-8% on average. The amount of wealth that will be created for communities by expanding broadband will far outweigh the initial capital costs for bringing it there.

3. **Educational benefits**

   In Virginia, our schools have worked hard to ensure that students have access to high-speed internet. But we know that students need access at home as well to succeed. Studies consistently show that children in households without broadband have worse post-secondary outcomes. Research, applying for college, submitting schoolwork is all done online and students who are forced to stay late at school or sit in a McDonalds parking lot for the free Wi-Fi are at a disadvantage. Even more so for any part of school that has gone virtual – recently for the pandemic but in the future potentially for inclement weather days. Many school divisions have provided devices to students to take home, but these devices become drink coasters without internet access.

Bringing universal broadband to all our students will improve performance and better their education.

CHALLENGES TO BRINGING BROADBAND TO LESS-DENSE RURAL REGIONS

1. **The density issue**
   The real reason there isn't already broadband everywhere is that it basically costs the same amount to string fiber or broadcast fixed wireless signals everywhere, but sometimes when a company strings a mile of fiber or broadcasts from a tower they're able to get hundreds of customers. Other times, it's a dozen.

   For a variety of historical reasons, broadband is not a utility. Utilities are able to automatically charge all customers in a service territory to recoup infrastructure and maintenance costs because they're required to serve all of those customers. In the US, broadband companies aren't structured that way. American private-sector broadband companies are using private capital to build infrastructure and take the risk of not being able to recover their costs.

   When there are only a handful of potential customers in an area, the risk of not being able to recover costs becomes a certainty – that's why we've got to take steps to "make the math work." That's where least-cost planning as well as new local revenues, state and federal grants, and resources from your private sector partner ISP(s) all come together to solve the problem.

   When we add together those resources, a private sector ISP can serve your community profitably, and keep providing that service indefinitely, without any need for further public support.

2. **Finding the right partner(s)**
   This is important. Some communities will be best served by a single wireline provider (an ISP that just does fiber optics). Some communities will be best served by a single wireless provider. Most communities will be best served by a hybrid solution involving both fiber to the premises and wireless broadband service.

   The solicitation described later in this document is a great way to make sure you're working with the right partner or partners.

3. **Getting public support**
   You've got to make sure you're not going it alone. This shouldn't be too tough as we haven't met a community yet that didn't want better access to the internet. That said, people are often skeptical of what's being done by their leaders if they're in the dark.

Pull together local leaders who want to help make this happen. Once you've gotten things going, make sure you don't forget to keep the public informed. Post updates to social media and your community's website. Hold a public meeting. Invite us! We love getting out of Richmond and into communities all over Virginia, and we can back you up with expertise and examples when your folks ask questions.

4. **Securing funding support**
We're not going to sugar coat it: this is the hard part. But you're already halfway through this guide, and we bet you haven't even taken many breaks. You're already great at this.

There are lots of sources of funding, from new powers your local government has to fund broadband expansion, to state planning and deployment grant support, to federal programs. And that's before you get your private-sector partner, who will also be kicking in resources!

There's even a list of those resources that you're going to get a link to in about three quarters of a page.

The other thing to remember is that this is a one-time expense. Once the network exists in your community, there's no ongoing expense for the locality beyond any assets you've currently got. Individuals will need to pay their monthly subscription costs and the private sector provider will be responsible for maintaining and operating the portion of the network they own.

5. **Managing the project(s)**
This is mostly about making a good agreement and holding your partners to it.

We're here to help you make a good agreement, and local governments hold partners to agreements all the time. Plus, if they don't act right, you've got friends in Richmond who can help (…it's us, and while we're not really a big deal, we are willing to help out in any way we can).

6. **Managing public expectations and concerns**
We feel a little like the latest fad diet when we say this, but this program works – but only if you put in commitment and effort. Since 2017, the Commonwealth has connected over 140,000 premises in Virginia. Keep your stakeholders engaged, be smart about your most valuable resources (people, time and money) and you'll be headed in the right direction.

FEDERAL CORONAVIRUS RELIEF BLOCK GRANTS

In 2021, Congress passed the American Rescue Plan Act (ARPA) that again distributed billions to state and local governments. The figured totaled $362 billion, of which $65.1 billion is going directly to localities. This funding is allowed to be spent on a number of things related to the pandemic, but crucially, broadband is one of them. This money has an expiration date, but it doesn't need to be spent until the end of 2024.

There is a lot of potential with this funding, but it is important that it be spent wisely. Some good (broadband-specific) uses of this funding could be:

- Funding a provider-engineered plan for their network covering your locality. Having the provider do the engineering work is important as every ISP configures their network slightly differently and this work will have to be done anyways. Also, having an ISP invested in a network plan for your locality is a big step towards that network actually getting built out.
- Providing match for a grant opportunity. In state grant programs like VATI, applications that have a higher match from the locality or provider tend to be more competitive.
- Construction of your own network or funding projects without state/federal match. With this funding expected to distribute up to millions to each locality, it represents a good opportunity to address the most expensive aspect of providing broadband if it fits into your locality's existing plans.

Conversely, you may want to avoid using the money on:

- Surveys - these can often provide an incomplete picture of broadband service in your locality and for which there are other sources of funding available. Additionally, in working with a provider you will usually find out where they generally do and don't already serve.
- Consultants – as we've said before, consultants can sometimes be helpful but are not always necessary. Oftentimes the Commonwealth Connect team can provide same assistance for a much lower cost (free).

Speaking of providing assistance, the Commonwealth Connect team is also available to help figure out where this money can best be used, so don't hesitate to reach out.

TOOLS TO SUPPORT YOU

1. **This guide**
   This guide is here for you.

2. **The rest of the toolkit**
   In addition to this guide, the toolkit includes a checklist to act as a quick reference to make sure you don't miss any opportunities or critical considerations, a model solicitation that your county/town/city attorney should modify to reflect your specific circumstances, and contact info for the Commonwealth Connect team. Keep all of these close at hand.

3. **The Commonwealth Connect Report**
   The Commonwealth Connect team has also written the Commonwealth Connect Report, which is updated annually, and lays out the progress and plans to achieve universal broadband coverage here in Virginia. It includes a list of all funding sources of which we're aware.

   Unfortunately, as that report is an official communication from the Governor to the General Assembly, it's not nearly as entertaining as this document, but it is also filled with useful info. You should absolutely give it a read.

4. **The Commonwealth Connect team**
   We are here to be your partners. You can always reach out to us, and once you've got the ball rolling, you'll have direct contact info for a specific member of the team who is your personal advisor. You'll have their direct email and phone numbers, and even though they'll be working with a number of communities, they're going to like you and your community the best. Here are the folks on our Commonwealth Connect team who are here to help:

   - Evan Feinman, Governor's Chief Broadband Advisor
   - Kyle Rosner, Deputy Broadband Advisor
   - Tamarah Holmes Ph.D, DHCD, Director, Office of Broadband
   - Deserae Saunders-Austin, DHCD, Administrative Assistant
   - Tammy Breski, DHCD, Telecommunications/Broadband Project Manager
   - Caroline Luxhoj, DHCD, Telecommunications/Broadband Project Manager
   - Tommy Hill, DHCD, Telecommunications/Broadband Project Manager
   - Ammar Al-Omari, DHCD, Telecommunications/Broadband Project Manager
   - Chandler Vaughan, DHCD, Broadband Policy Analyst
   - Aaron Barnes, DHCD, Broadband Planner
   - Lonnie Hamilton III, DHCD, Broadband Planner

   To contact the team, email CommonwealthConnect@governor.virginia.gov

STEP-BY-STEP PATH TO UNIVERSAL BROADBAND COVERAGE

The information presented below provides an outline of the steps localities can take to manage the process of securing universal broadband. For a step-by-step project management spreadsheet, please contact the [Commonwealth Connect team](#).

Phase 1 – Initiate:

- **Gain Commitment from Official Local Leadership**
  - Purpose: It's critical to have official local leadership's (the Board of Supervisors or the official county, city and town leadership) support for broadband planning and investment. Local leaders should understand how an investment in broadband infrastructure will positively impact the longevity of their community, and as proof of their understanding we need them to endorse, participate in, and contribute to

universal broadband planning efforts. Having the authority and experience of local government leaders will be crucial for navigating through negotiations, grants, and more.

- o Task: Present the project introduction to the official local leadership and document their commitment to pursue universal broadband.

- **Identify Project Leadership**
  - o Purpose: The key to achieving universal broadband is identifying a local government leader who has authority to make official requests of county departments, believes in and can clearly articulate why the community wants and needs better broadband, and can help educate elected officials of the value of universal broadband. It is essential that at least a portion of this person's time be dedicated to keeping track of and following through with all the necessary steps of the broadband initiative. When we look across the Commonwealth, *the primary difference between communities that have achieved universal coverage and those who haven't is the presence of a champion within that local government.*
  - o Task 1: Local leadership should identify and commit a local government personnel to champion and oversee planning efforts and act as Single Point of Contact (SPOC) to the Commonwealth Connect team. Make sure to talk with the Commonwealth Connect team to think creatively about how this position fits into your existing structure and funding resources, which leads to Task 2:
  - o Task 2: Local leadership should designate/allocate the percentage of time the SPOC spends on broadband planning or consider hiring external help. DHCD's Community Development Block Grant (CDBG), Appalachian Regional Commission (ARC), and GO Virginia may provide funding to assist with the development of your plan.

- **Determine Additional Resources**
  - o Purpose: Every locality needs to invest in broadband whether it be in terms of time, money or other resources.
  - o Task 1: Local leadership should establish the annual broadband budget to be used as 'match' funds for grants and/or other broadband expansion needs. Most broadband grants require matching funds and providers may require some contribution toward engineering designs.
  - o Task 2: Identify local or regional resources for GIS mapping. Contact the Commonwealth Connect team if you need assistance in identifying resources, as our team has GIS resources available.

- **Determine Partnership Model**
  - o Purpose: Establishing the nature of the sought-after partnership as well as identifying available local assets and incentives for attracting a private sector partner early on will save valuable time and can help expedite solicitation for a broadband partner. For most localities, options 1 and 2 (from below) are the most common strategies, but every community is unique!

- o Task 1: Review the partnership models below and talk with the Commonwealth Connect Team about which option works best for the locality.
    - ▪ Option 1: Locality Shares Assets
        - ● Locality shares infrastructure (vertical assets, fiber, conduit, etc.)
        - ● Private partner funds and operates
    - ▪ Option 2: Locality Shares Assets and Invests
        - ● Locality shares infrastructure (vertical assets, fiber, conduit, etc.)
        - ● Locality funds a portion of capital costs
    - ▪ Option 3: Locality Owns and Funds a Network
        - ● Locality (Broadband Authority) covers all capital costs and portion of operating (capacity)
        - ● Private partner deploys, maintains and operates
        - ● Revenue sharing/payments
    - ▪ Option 4: Locality Owns, Funds and Operates a Network
        - ● Locality (Broadband Authority) covers all capital and operating costs
        - ● Locality staffs to operate and maintain
        - ● For the FY22 round of VATI, public networks are eligible for up to 10% of total VATI funding.

- **Develop a Communications Plan**
    - o Purpose: Maintaining open communication with stakeholders and the public throughout the course of the project is key to its success. Acknowledge from the onset that the project itself will likely change significantly throughout its course, and be sure to adjust expectations accordingly through all stages of the project.
      Task: SPOC begins periodic communication to inform the public of the locality's intentions to seek universal broadband. This can be done through public meetings such as city council or board of supervisor meetings, social media, town crier, or any other method your community regularly uses to share information.

Phase 2 – Plan

- **Establish Broadband Team**
    - o Purpose: If the locality does not have a Broadband Authority, the SPOC should establish a Broadband Management Team. These folks won't be working on broadband full time, or even most of their time, but they're supposed to support the SPOC in their areas of work and expertise and know what's going on. The Broadband Management team will oversee the daily activities associated with development of the locality's broadband plan to achieve functionally universal broadband coverage over 10 years. The Broadband Management Team will also work with local staff involved in broadband-related policies (internal policies, zoning ordinances, and the Locality Code). Examples of positions to consider include, but are not limited to (and will vary according to local responsibilities and needs): Locality Administration, Economic Development Director, Planning Director, Information Technology Director, Finance Director, Clerk to the Board of

Supervisors, Commissioner of Revenue, Public Safety Director, Sheriff/Police Chief, Building Inspector, etc. It also wouldn't hurt to include someone with grant-writing experience.

- ▪ Topics to consider during broadband policy review include, but are not limited to: streamline permitting (types, duration, fees, and approval timeframe for permits), consider reducing or suspending fees for broadband providers such as leasing tower space, locality property access, easements, Rights-of-way (ROW), and advance notifications for "Dig Once" opportunities.
- o Task 1: Create the Broadband Management Team. This team is headed by the SPOC and should include representation from, but not limited to: local elected officials (supervisors, council members), local government administration (town, city and/or county), local government GIS and economic development staff, planning district commission, public safety, public schools and libraries. Additional recommended team participants include; local healthcare institutions, chamber of commerce, Native American tribes (where applicable), agricultural sector (farm bureau, county extension office etc.,) and real estate developers.
- o Task 2: Establish a Broadband Management meeting schedule. Keeping momentum is important. A schedule for periodic meetings will help keep the processes on track.

- - **Talk with Regional Broadband Leaders**
    - o Purpose: Most likely, one or more localities surrounding your community are working towards universal coverage as well. Collaborating regionally is better, as larger projects save money, connect more folks, and score better in grant programs.
    - o Task: Contact every adjacent locality and learn about their broadband plans. Contact the PDC to see if they have any broadband plans as well. If you don't have the adjacent locality contact information, reach out to the Commonwealth Broadband Team.

- - **Identify Local Internet Service Providers (ISPs)**
    - o Purpose: Working with local providers to address service gaps might be the fastest way to expand services. Don't forget about electric service providers as they may also be providing broadband.
    - o Task 1: For a list of providers in Virginia, click here. If you are unsure of who may be in your locality, reach out to the Commonwealth Connect team and we can help you identify who's where.
    - o Task 2: Meet with each local broadband provider in person. ISPs are critical to getting to universal coverage so you want to know them firsthand. Contact the Commonwealth Connect team for a questionnaire you can use to help in this process or if you'd like a member of our team to participate in this meeting. At the meeting:
        - ▪ (1) explain the locality's' plan for universal coverage and willingness to work with ISPs to get there
        - ▪ (2) seek information about their plans for expansion and any perceived local barriers stopping expansion. Gauge whether they would be willing to

partner with the locality to seek a broadband grant, and if so, what would the project look like.

▪ (3) ask what they can share with you about where they provide service in your locality. Some providers are comfortable sharing some information, some providers will require a signed non-disclosure agreement to review the maps in person, and some will flat out say no. Sometimes there's a willingness to have a conversation with rough estimates. "Perfect" should not be the enemy of "good" here and some information is better than none. It's also worth reminding them that you'll be seeking to partner with them or someone else to cover everywhere currently not covered, so it's in their best interest to be as forthcoming as possible.

- **Identify Service Gaps**
  - o Purpose: One of the most important parts of the process is understanding and prioritizing the locality's areas of needs. You can't help unconnected folks get service if you don't know where they are, and identifying where they are is also an important part of the grant process. It's important to note that you don't ever need a completely accurate map – eventually you'll be working with an ISP partner and your pursuit of grant support will include a process whereby existing providers will wind up sharing their coverage areas.
  - o Task: Review the FCC coverage maps and augment to match local knowledge of unserved areas. Use [Virginia's Broadband Toolbox](#) to view FCC coverage as reported by providers. These maps are notoriously inaccurate so be skeptical when reviewing. Note that better maps are forthcoming from both DHCD and the FCC, but both are still several months away.

- **Contact Electric Utility(s)**
  - o Purpose: Whether your locality receives electricity from investor-owned utilities like Dominion or Appalachian Power, from an electric cooperative, or a municipal provider, they have a role to play in broadband. Electric providers are able to and often do participate in the delivery of both middle-mile and last-mile broadband. Since they already have a connection to most premises in your locality, are key partners in planning for new broadband service.
  - o Task: Contact electric providers to discuss how they can assist achieving universal coverage. If you don't have a contact at your utility(s), reach out to the Commonwealth Broadband Team and we will get you connected.

- **Identify Federal Broadband Funding in Your Locality**
  - o Purpose: There are a number of federal broadband deployment programs that have been funded to the tune of billions all across the United States. A fair amount of this funding is present in Virginia and already awarded to ISPs. These programs all have different acronyms, different rules, different speeds, and different deployment timelines.
  - o Task: Look into existing federal broadband programs to see what funding may already have been awarded in your community. The largest, most important programs to check are the Rural Digital Opportunity Fund (RDOF), Connect America

Fund II Auction (CAF II), USDA ReConnect, and Alternate Connect America Model (ACAM). A full list of these funding programs can be found [here](). And here are maps for some of those programs - [CAF II, ACAM](), [USDA](), and [RDOF]().

- **Choose between developing a Regional or Local Broadband Plan**
  - o Purpose: To fulfill Governor Northam's vision of functionally universal broadband coverage within 10 years, each locality must eventually have a local broadband plan in place that will get you from wherever you are to universal coverage. Locality broadband plans are often more tailor-made for the locality while regional broadband plans, perhaps through a Planning District Commission (PDC), can leverage economies of scale.
  - o Task: Identify if your locality has done a broadband plan in the past. If so, this can be the starting point for creating an updated plan geared towards universal coverage. If your locality has not participated in a broadband plan, the SPOC must choose either to create a locality-specific broadband plan or work with other local governments to form a regional broadband plan. If the choice is a regional plan, the locality should contact its PDC.

- **Create a Broadband Authority (optional)**
  - o Purpose: A broadband authority makes binding broadband decisions on behalf of the locality. Establishing a broadband authority can provide advantages such as risk management and revenue generation options for broadband infrastructure, while minimizing the impact on the locality's bond rating. If the locality wishes to own or operate broadband infrastructure, the only viable route in doing so under current Virginia law would be establishing an authority under the [Virginia Wireless Service Authority Act](). Broadband authorities established under this Act have wide discretion and power to deliver broadband themselves or in partnership with private or non-profit providers. They can also accept funding from any source, including local subsidization or bond proceeds.
  Task: Consider the creation of a broadband authority. If yes, the governing body of the locality (or multiple localities) must first hold a public meeting regarding the establishing the authority and then may establish an authority by resolution.

- **Determine if Planning Funding is Required**
  - o Purpose: If your locality or region does not have any plans, would like to merge multiple local plans into one regional plan, or have a broadband plan that is so outdated it is unusable, then there are resources to support planning. Most plans do not need grant funding to update and the SPOC, with the help of the Commonwealth Connect team, can do most of the work. But if, in consultation with the Commonwealth Connect Team, some unavoidable expenses are discovered then there may be planning funding available.
  - o Task: Determine if significant planning is needed and contact the Commonwealth Connect team about which planning support resource is the best fit.

- **Determine if BPOL Information is Available**
  - o Purpose: Business, Professional, and Occupational License (BPOL) information will provide addresses of known businesses which will aid in assessing where broadband is needed to support local businesses.
  - o Task: Determine if the locality assesses a BPOL tax, and gather that data if one exists.

- **Create a Service Tax District for Broadband (optional)**
  - o Purpose: Service districts are great ways for a locality to raise revenues to help fund broadband infrastructure build-outs over time. Localities must pass an ordinance establishing one or more local service districts. This revenue can be critically important in taking a project from being a potential grant winner to being a strong applicant for additional grant support.
  - o Task: Determine if the locality wants to create a service tax district for broadband. For more information click [here](#).

- **Use Revenue from Solar or Energy Storage Facility Siting Agreements for Broadband (optional)**
  - o Purpose: If your locality has a potential new solar facility or energy storage facility that will be located in a census block identified as an [opportunity zone](#), Virginia law allows localities to negotiate terms and conditions with the solar/energy storage applicant for any new solar/energy storage facility, including financial assistance by the solar/energy storage applicant in the deployment of broadband. Depending upon the capability of the project and local considerations this financial assistance may be a lump sum grant match, incremental financing accrued on an annual basis, or revenue that can be bonded for immediate broadband funding. Localities are also permitted to hire consultants and other experts to provide advice or directly negotiate the siting agreement. This tool can be a great opportunity to raise local broadband matching funds and pursue broadband grants like VATI. For more information click [here](#) and [here](#).
  - o Task: Determine if there are any potential or pending solar or energy storage siting applicants in the locality.
  - o Task: Inform the locality attorney and administrator/manager about the opportunity to determine if this is a viable option for the locality.

- **Identify Vertical Assets**
  - o Purpose: Vertical assets can be important pieces of infrastructure to a broadband expansion plan. Fixed wireless, cellular, as well as wireline providers may have need for local vertical assets.
  - o Task: Use [Virginia's Vertical Assets tool](#) to identify the location of known vertical assets and if locality-owned, whether space is available. These include existing towers, silos, water tanks, buildings, etc. If it's tall, and equipment can be affixed to it, it's a vertical asset. Get creative!

- **Identify Non-Cash Incentives**
    - Purpose: Local governments have to play a role in overseeing broadband deployment through zoning, permitting, and other regulations. It is critical that government entities protect the public interest, but also embrace policies and processes that reduce barriers to broadband deployment. Anything the locality can offer a potential partner(s) in the form of incentives (rights-of-way, pole attachments, easements, facilities, waived fees, etc.) can shorten deployment time, reduce costs, and make a project more attractive to potential providers. This is a great opportunity to think about ways to make your community more attractive to ISPs, and potentially leverage your own purchasing power.
    - Task: Identify and map local assets or actions to help lower the cost of expansion. Be sure to note any assets that fall within an unserved area. Also, local assets can serve as an in-kind match for state grant programs. Below is a list of potential assets that should be considered.
        - Space on vertical assets – existing towers, silos, water tanks, buildings, etc.
            - Waive, reduce, or suspend leases on locality owned towers for (a) potential provider(s).
        - Share space for towers, network equipment, or poles.
            - Sharing space at fire stations/rescue buildings for small towers or poles.
            - Space on, or in, locality owned property for tower construction, location of points of presence, networking equipment etc.
        - Locality-owned land that could be used for tower construction or other facilities.
        - Locality-owned telecommunications networks, such as a fiber-optic network connecting government facilities.
        - Waive, reduce, or defer local fees for permitting and construction of any broadband infrastructure deployed by the private partner(s).
        - Assist with project marketing and/or public relations leveraging public meeting space, local media relationships, direct mailings to constituents, and social media.
        - Provide a single-point-of-contact for any permitting for broadband infrastructure construction by the private partner(s).
        - Leverage ongoing or pending capital projects, such as water, road construction, main street revitalization, new sub-divisions, fiber builds etc.
            - Take advantage of "Dig Once" opportunities to coordinate the installation of underground fiber and/or conduit whenever the ground is open for building or renovating roads, utility infrastructure, energy distribution channels, sidewalk repair, etc. "Dig Once" opportunities can significantly reduce costs and shorten deployment time for potential private partner(s).
        - Offer locality-owned anchor tenants for any private partner(s) who partners with the locality. These can be a revenue generator to offset the costs of deploying broadband to sparsely populated, unserved areas. The locality needs to specify eligible potential anchors. Sites might include: schools, libraries, public safety facilities, local government facilities, etc.

- **Identify Local Procurement Methods**
    - Purpose: If a locality chooses to issue a Request for Proposal (RFP), Request for Interest (RFI), or to follow a more informal partnership with an ISP in pursuit of a grant, the procurement type will dictate how that solicitation is made. The Public-Private Education and Infrastructure Act (PPEA) is a flexible procurement process allowing conceptual design and phased deployment. For more information click here.
    - Task: Review local procurement methods with your city or county attorney and, if not already adopted, consider requesting that the locality formally adopt the PPEA procurement method. At this point in the process the locality may be unsure if it wants to issue a RFP, however, it is still recommended that the locality adopt the PPEA method to allow for more options later.

- **Describe Areas of Need**
    - Purpose: Most broadband expansion efforts will be completed in phases. This information will be conveyed to potential broadband provider via RFP, RFI or other means.
    - Task: Fully describe in detail (street names, boundaries, etc.) each prioritized area for broadband expansion. It will be helpful to have some principles guiding this so that, if members of the public ask why they're not first in line, you've got a consistent response. Good methodologies include prioritizing those who can receive service quickly due to proximity to existing networks, those areas where there is significant economic activity, and those areas that contain the most citizens who are currently disconnected.

Phase 3 – Execute

- **Determine if universal coverage can be achieved without a solicitation**
    - Purpose: You have met with your local ISPs and determined if they are willing to partner to seek grant funding. If they are and have projects in mind, then there is no need for the solicitation.
    - Task: If a partner(s) is willing to move forward, sign a memorandum of agreement (MOA) or understanding (MOU) to formalize the relationship and shared goals. Determine the projects, funding gaps for each phase, and start the process of seeking funding and developing grant applications.

- **Develop solicitation seeking partner(s)**
    - Purpose: If a partnership has not already begun, use all the information gathered so far to seek partner(s) to bring universal coverage to your locality.
    - Task 1: Identify the preferred mechanism for soliciting for a broadband service partner (RFP, RFI or straight to partnership). For sample RFPs and RFIs, please visit Commonwealth Connect's Broadband Toolkit.
    Task 2: Ensure the solicitation is reviewed thoroughly by your locality's legal counsel, leadership, and others.

- **Publish and promote solicitation**
    - o Purpose: A partnership between the locality and a broadband provider needs to be established by some mechanism. A private sector partner is usually required for all Virginia broadband grant opportunities and many of the federal grants as well. However, for the 2022 VATI application cycle a pilot program is being run allowing public broadband authorities to compete for up to 10% of total VATI funds without a private partner. However, these applications will still be scored competitively alongside those including a private sector partner.
    - o Task 1: Post solicitations to the Virginia's Business Opportunities site, tell the Commonwealth Connect team so we can circulate, and send directly to local ISPs to ensure they are aware.
    - o Task 2: Evaluate responses and talk with the Commonwealth Connect team.

- **Review responses and select partner(s)**
    - o Purpose: To find partner(s) to begin build-out of broadband.
    - o Task 1: Review the solicitation responses with the broadband management team, your local broadband authority, and the Commonwealth Connect team. Questions that you should ask during review:
        - ▪ Has each respondent taken a least-cost, hybrid approach to universal broadband coverage?
        - ▪ Have respondents created their plans with ongoing efforts of neighboring localities in mind?
        - ▪ Do you have experience with the respondent? If not, contact localities that have had experience to hear about their partnership.
        - ▪ Do two respondents re-applying together make more sense than just selecting one?
        - ▪ Do the projections and promises from the respondent pass the smell test?
    - o Task 2: Select a partner(s) who fits with your locality's vision for achieving universal coverage.
    - o Task 3: Create, run past the Commonwealth Connect team, and get signed, a memorandum of agreement (MOA) or understanding (MOU) to formalize the relationship and shared goals. Communication, collaboration, and trust are key to a successful partnership so have introductory meetings between your partner(s) staff and your own.

- **Work with partner(s) to generate detailed plan**
    - o Purpose: A successful solicitation does not become a build-out on its own. The locality and partner(s) must work together to figure out what more information is needed from the solicitation response to generate a detailed, phased plan for universal coverage. Shared understanding of exactly what is going to be built, and when it will be built is critical. As with all construction plans, this will be aspirational to a certain extent (think about any home renovations you've ever done), but at least there will be a shared vision for the construction.

- o Task: Using the solicitation response and other locality-information (assets, incentives) develop a detailed plan with responsibilities clearly defined. The detailed plan that will emerge from this process should be fully engineered and actionable with:
    - ▪ Budget outlays (including any funding gaps)
    - ▪ Timelines
    - ▪ Phased construction plans

- **Work with partner(s) to seek funding**
  - o Purpose**:** Building broadband networks is incredibly expensive and will likely require subsidized financing. Local financing options can often be mixed-and-matched and combined with state and federal grants. Work with your chosen partner to identify the best combination for your project.
  - o Task: Work with partner(s) to identify the best funding opportunities for your expansion project. The Virginia Telecommunication Initiative (VATI) is probably your best bet, but reach out to the Commonwealth Connect team to discuss.

- **Seek funding**
  - o Purpose: Virginia grant opportunities and many federal grants generally require localities to have a private sector partner in order to be eligible for funding, though there is a temporary exception for public broadband authorities mentioned earlier. Task: Work closely with your partner(s) to ensure proper application processes are followed. Review application before submitting.

Phase 4 – Construction

- **Monitor and track progress of build-out**
  - o Purpose: The public and locality leadership needs to know how the expansion project is progressing and when they can expect broadband service.
  - o Task 1: SPOC (or other identified entity) monitors build-out for compliance with RFP requirements and adherence to the timeline and keeps the public informed through all stages of the expansion work.   Update local leadership, such as the broadband authority or board of supervisors, during public meetings about the progress. Doing this with partner(s) in person is strongly encouraged.
  - o Task 2: Keep in constant contact with partner(s) about progress. Ensure local permitting, land-use, and rights-of-way are running smoothly. This is a big part of the SPOC's job at this stage. The SPOC needs to be the internal government problem-solver.

- **Promote digital literacy**
  - o Purpose: The public may be unaware of the tools that broadband offers. They also need to know about the new service and new ISP(s) providing service in the area. This will also increase the percentage of people in the service area who ultimately become customers of the ISP. More customers = more money for them, which

means they'll be more comfortable putting more of their capital on the table in the first place.

- o Task 1: Organize free, public digital literacy courses in the newly served areas of the locality. Libraries can be great partners in putting these together. Reach out to the Commonwealth Connect team if you need resources or curriculum.
- o Task 2: Work with the ISP(s) to ensure adequate adoption rates of the service.

POTENTIAL PITFALLS

1. **"Cherry-picking" your population**

   Chery-picking in broadband is not sweet, unlike the name. Expanding broadband to only the denser-populated portions of your locality will make the economics of reaching the remaining less-dense communities much worse. For instance, if half of your locality, including two towns, is unserved and you fund a project only for the populated area around the towns, the remaining population will be even harder to connect – because now there are far-fewer potential customers but the bulk of the construction project remains necessary. Projects should take a long view, with universal broadband coverage as the goal, and population should be evenly distributed as to make the economics work and not make the problem worse. Localities should ensure that low-income and historically underserved minority communities are included and priorities in build-out plans.

2. **Navigating consultants and planning**

   What we hear time and time again from the internet service providers is that even the most nuanced and sophisticated broadband network design from a third-party consultant will need to be re-engineered by the specific ISP for their own network depending on their own footprint, equipment, and specifications.

   Our model solicitation asks the ISPs to do the engineering themselves, saving everyone time and money. Plus, the Commonwealth Connect team's expertise is free so we hope you'll start there. Consultants can assist you in inventorying local government assets, in demonstrating demand to the private sector, and in putting you on even footing when negotiating with the private sector providers. The Commonwealth has some modest amounts of grant assistance to help your local government staff or planning district staff help you implement the local government responsibilities in this effort.

   It's important that any consultant you hire be there to help you protect the public interest and navigate the process – not engage in costly network engineering or other tasks that may not advance your project.

3. **Waiting for maps**

Currently available broadband maps only tell half the story when it comes to who has access to service and who doesn't. While many conversations are happening at the federal level as we speak, it is an issue that will not be surmounted in the near future and localities should err on the side of action rather than waiting for better information. We know right now that thousands of Virginians are jumping up and down saying "I need internet!" Once you find an ISP(s) to partner with, their engineered plan will give you the most reliable map of broadband availability in your area, which you will work from. **You do not ever need a perfect map to achieve universal coverage.**

4. **Not using least-cost solutions**

When we say universal broadband coverage, we don't mean every single structure in your locality has access to broadband. We mean functional universal broadband coverage, meaning 95-100% of premises with access. Typically the first 90-95% of premises will cost around 50% of the total budget while the last 5% of premises will cost the other 50%. We urge localities to be reasonable about reaching the last 5% of homes, recognizing that expenses drastically increase and not every premise will get connected. We also urge localities to embrace the hybrid approach to achieving universal broadband coverage and not require only one technology to serve your community. For instance, many communities would love fiber everywhere, but that may not be economically feasible.

5. **Not leveraging regional partners**

Bigger is better in a lot of contexts, and this is one of them. Collaborating with other localities will drive down the overall cost of projects. By staying isolated, you may miss out on a cross-locality project that would save time and money. Neither broadband nor people's settlement patterns stop at locality boundaries so you should be looking at unserved areas regionally.

6. **Not receiving interest from ISPs in partnerships**

While we hope this is a rare occurrence, there may be instances where a solicitation receives no responses and there are no interested partners. Most likely, there is an underlying reason behind the lack of interest so please contact the Commonwealth Connect team so we can help get to the bottom of it. We can re-scope the solicitation and look at a variety of other models for broadband deployment that could include municipal networks or unique partnerships.

7. **Long Drops**

Some unserved homes may have long driveways that make connecting them extra expensive. These are called long drops. Even with grant programs like VATI, cable can be laid along the road but providers may still charge specific homeowners an additional cost for connection because of the length of their driveway if provisions otherwise aren't made during project design. These

additional costs can be in the thousands of dollars for each long drop. Therefore it is crucial that long drops in a project area be identified and accounted for. However, as these can increase the overall cost of a project to both the provider and the locality, it may not be feasible to include all of them. In that case, it is best to prioritize including long drop connections for low and moderate-income households in your project funding. These are the folks who may otherwise have the most trouble affording the steep connection cost.

8. **Not checking in with the Commonwealth Connect team**

Going alone on expanding broadband is a bad idea. You're going to be less effective for your locality and not relying on our team, with experience and expertise in helping localities, is just plain silly. Consider us your pro-bono broadband advisors, answering questions and serving as another set of eyes throughout the process. We can't come to your office and do the work for you – even though we bet you've got a great office – but we are here to help answer questions when you run into a roadblock or need help getting started.

And that's it! You're at the end of the guide, and you're sitting, sipping your coffee, or tea, or whatever people drink in the future, and congratulating yourself on a job well done. Of course, if you're not done, at least now you know what to do next.

In all seriousness, this issue is important, and even just being dedicated enough to read this document, look past the silly jokes, and get the ball rolling in your community is amazing. You are starting a project that will be as important as those that got water, electricity, and telephone service to your fellow citizens, and we want to help. Let's work together to make history while improving the lives of your friends, family, and neighbors!