Broadband Toolkit

A Complete Guide for Louisiana's Local Leaders

connect.la.gov

Louisiana Office of Broadband Development & Connectivity

BROADBAND 101

Who is the ConnectLA team?

The ConnectLA team is THE broadband resource in Louisiana. The Office of Broadband Development & Connectivity is housed in the Louisiana Division of Administration and is singularly tasked to lead efforts to eliminate the digital divide by 2029.

The office is authorized under La. R.S. 51:2370.1 – 2370.16 to administer the Granting Unserved Municipalities Broadband Opportunities grant program, which aims to help private providers facilitate the deployment of broadband service to unserved areas of the state. Our office can also assist in a variety of different areas. We can advise local municipalities on federal grant programs that focus on access, affordability and literacy, make connections to providers and help develop public private partnerships. We strive to be the knowledge leader in the country when it comes to connectivity because industries, such as healthcare, education, agriculture and industrial services, all benefit from increased connectivity and drive economic development and expansion in Louisiana. We want the rest of the country to look at Louisiana as the leader in implementing innovative broadband partnerships addressing access, affordability and digital literacy.

What am I looking at right now?

This is a step-by-step guide designed to explain why and how to get everyone in your community or region access to broadband and to address the tactical issues for affordability and digital literacy across each parish and town. This guide is for local community leaders, elected officials, business owners or concerned citizens who will work with local governments and internet service providers for universal access to broadband.

Everyone?

Well, hopefully. In general, most areas are able to get nearly everyone online, but some may be so spread out that it could cost twice as much. However, we want to plan for universal broadband coverage so that we're not creating pockets of unserved areas that are even harder to reach than they were before.

So what is broadband?

Broadband (broad bandwidth) is any connection that allows data to move quickly from the internet to your device. Think of it as an internet pipeline, much like a water or sewer pipeline. When it is slow, it's an internet connection, but it's not broadband. In Louisiana, we define broadband as connections with minimum speeds of 25 megabits per second download (when things load from the internet to your computer or device) and 3 megabits per second upload (when you send something from your computer or device out to the internet). This is in stark contrast to the early days of internet access when dial-up modems provided only 28.8 kilobits per second download and even less in upload speeds. A full length movie would take more than nine days to download!

Today, there are many different types of connections that provide broadband speed as defined above, and the options available can be very confusing, even for someone well versed in understanding telecommunication options! There is an awful lot to understand, and there are pros and cons to each one.

- **Fiber Optic Connection** – This technology is based on glass cables that transmit data through pulses of light with connectivity that can reach blistering speeds. Each fiber is smaller than a

human hair and bundled into strands that make up one cable. As a leading innovative technology of the 20th century, fiber connections have facilitated the modern development of our world. Today, fiber networks connect almost every location on earth to internet infrastructure and can support speeds and reliability that are far superior to other connection types (background information on the development of fiber cable can be found here). The one disadvantage to fiber technology is availability. Fiber-to-the-premises networks tend to be expensive and are best suited for denser areas, or where the value and importance of the connection warrants the greater expense.

- **Cable Connection** – While lacking in speed and potential reliability of fiber optics, cable internet connections are one of the most common types of connections available for access. This type of internet access uses the same coaxial connection that providers use for broadcasting cable television signals. Historically, limitations with regard to speed reliability can be a concern, as coaxial cables are susceptible to network congestion and slowed speeds, especially during peak usage times.

- **DSL Connection** – Short for digital subscriber line, this type of connection is usually available where access to fiber optic or cable is limited. This connection utilizes traditional phone lines; however, unlike dial-up access of the past, you can continue to use your internet connection without worrying about incoming or outgoing phone calls. DSL connections are fairly reliable and affordable, but this type of connection lacks the speed of a fiber optic or cable connection.

- **Satellite Connection** - Satellite internet is widely available because it doesn't rely on ground-laid infrastructure like the other options discussed. A special dish is installed and connects with satellites in space. If you have a clear view of the southern sky, there's a pretty good chance that there's a satellite provider capable of delivering an internet connection to your home. However, there are challenges with satellite services. They rely on a comparatively small number of satellites, 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. 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.

- **Fixed Wireless** - Fixed wireless means transmissions between equipment that is fixed in specific locations, usually a tower in one location 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. All fixed wireless internet connections require a direct line of sight, so if there are hills, trees, buildings or other obstacles nearby, they can distort your connection. In addition, weather can play into connectivity issues, but not nearly as bad as what could be experienced with a satellite internet connection.

- **Cellular Wireless** - With this connection type, your cellular carrier connects your router or hotspot to the cellular tower nearest you, just like it does with your phone. Speeds vary based on how close you are to a tower but are likely to be faster than with a fixed wireless connection. Download speeds vary depending on the cellular carrier, location of access and other factors, such as network congestion. Also, data usage and speed can be limited if you don't have a cellular plan that offers unlimited data access.

Ultimately, our team is technology-neutral, and we suggest that you be as well. If a product, be it fiber, 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 some billionaire tech person going to handle this?

There are lots of developing broadband technologies, and they're all exciting and moving us into the future of widespread connectivity. Elon Musk and his company Starlink are putting lots of satellites into orbit much closer to the ground to try to solve that problem. While Starlink has the potential to solve some of the problems that traditional satellite broadband services have faced, it creates a bunch of new problems: satellites must move across the sky rather than stay in the same place; they can fall back to earth much more quickly; the satellites must maintain constant communication with each other; and they can still experience outages. The service, which is being beta-tested in some areas, is relatively expensive for the connectivity offered and likely to stay that way. Additionally, it is potentially unreliable in bad weather and is not guaranteed to reach a widespread rollout.

Google, Microsoft, Facebook and Amazon, as well as scientists with the cable and telecommunications industries, are also working on new technology. We think these people do lots of neat stuff and are excited to have them thinking outside the box. 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.

What about 5G service? There has been a lot of discussion lately, and there are already lots of cellular towers around our area.

First there was 3G, then 4G and now 5G. This is the next iteration of cellular technology being marketed by providers. Most areas with a lot of existing cellular towers still don't have enough for 5G.

5G, unlike previous improvements in cellular technology, can 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 has been rolling out to the state's urban cores recently, it likely won't reach anywhere not currently served by broadband service anytime soon, and even when it does your community will need a ton of fiber optic capacity to make a 5G network function.

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, lay the groundwork for things like 5G networks in the future.

What kind of infrastructure and technology will my community be deploying?

There are lots of different ways to move data around, but in today's technological landscape, the two technologies that make sense for most communities to support are *fiber optics and fixed wireless*. We encourage all projects to be based on either of these two options, as they will provide the best bang for the buck.

Isn't fiber much better than wireless? Shouldn't we just go all-in for fiber?

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. Wireless can reach a lot of customers at far lower cost, but with the service issues and speed reductions described earlier. For less dense regions, wireless may be the only sensible option from a cost standpoint. Most communities will need to consider a hybrid approach: some fiber to the denser areas and towers with fixed wireless extending the network to the less dense areas.

How do these connections work?

You won't believe how simple it is. The internet is nothing more than a global computer network for communication. Data is moved from one place to another, so that we can chat, browse and share. A broadband connection gives you access to the internet by using the transmission methods described earlier (fiber optics, coaxial cable, wireless, etc.)

All data is transmitted using a method called packet switching. What packet switching does is send your data in separate pieces—each tagged with your intended destination—in the quickest and most efficient method available. Once all of the pieces reach their target, they are reassembled into—voila!—your email. In contrast, if you maintained a permanent connection to the intended destination or if your email traveled as a whole instead of in pieces, an entire portion of the network would be blocked every time you sent a message. With packet switching, many people can use the internet at the same time.

Servers store information. There are millions upon millions of servers on the internet. There are file servers, mail servers and web servers. The internet is also made up of routers, which make connections between different systems. For instance, at work or school, where several computers are networked, you are connected to one router—a single point of entry for the internet.

Who maintains these connections?

Good question. Connectivity to the internet is maintained by private sector companies, broken out into three different tiers and with different types of delivery models throughout the entire global network.

To start, carriers can be known as Tier 1, Tier 2 or Tier 3 carriers. Tier 1 providers built the backbone of the internet. They operate and maintain infrastructure, including the transocean cables across the world! Tier 1 carriers basically own enough of the physical network lines to carry most of the traffic themselves, and they negotiate with other Tier 1 carriers for free access to their networks. Examples of Tier 1 carriers include AT&T, Lumen, Sprint and Verizon.

Tier 2 carriers work with other networks but must purchase access from Tier 1 carriers to gain full access to the internet. However, just because a provider is a Tier 2 carrier doesn't mean that their offerings are any less effective. While a Tier 1 carrier may focus on larger clients, this leaves Tier 2 carriers the ability to focus on regional consumer and commercial access. Examples of Tier 2 carriers include Comcast, Cox Communications and Virgin Media.

Tier 3 carriers must purchase access from Tier 1, or even Tier 2 carriers, for access to the internet. These carriers are usually last-mile providers, meaning that they connect consumers to the internet through other carriers' connections. A great example of Tier 3 carriers involves the cellular industry, where smaller companies like Cricket Wireless, Boost Mobile and TracFone must negotiate with larger cellular providers such as AT&T or Verizon for customer access to their networks.

Similar to how tiers of carriers are structured, you may also have heard of descriptors such as backbone, middle-mile and last-mile providers. Tier 1 providers often participate in internet backbone traffic through their agreements for connection and transmission of data between each other. Middle-mile often refers to the network connection between the last-mile of service and greater internet. In a rural area, the middle-mile would likely connect the town's network to a larger metropolitan area where it interconnects with

major carriers. The final leg of connection, or last-mile, is between the carrier and the customer. With traditional connection methods, this area can be where the most frequent bottlenecks occur and can be the most expensive to resolve.

Overall, there are many companies with a variety of business models and methods that can end up providing internet access to an end user. Most of the time, this ends up being an offering within a vertically integrated network offered by a large Tier 1 carrier such as AT&T or Verizon. However, your connection is only as fast as its slowest point, so it's important to ensure that your last-mile connection back to the large, fiber optic backbone is the best it can be.

I love reading definitions. Do you have any more that I can dive into?

Sure, we love that you are into that. For more resources, check out the following links:

Community Networks

Broadband USA

Why invest in broadband?

Like railways in the 19th century and electricity or the expansion of the interstate system in the 20th century, broadband access has become a critical piece of infrastructure, relied upon to ignite economic growth and competitiveness, contribute to improved outcomes in healthcare, enhance agricultural output and advance the educational experience of our children. In the 21st century, the need for broadband access is a given for many Louisianians, who rely on broadband in every aspect of daily life.

The coronavirus pandemic has forever changed the definition and location of "work." Unemployed Louisianians rely on broadband to search and apply for new opportunities. Our state's families and children have been forced to rely upon broadband for virtual education. The older and sicker among us are increasingly reliant on broadband to schedule telehealth visits and see medical specialists. Throughout fields of rice in Acadia Parish, corn in Richland Parish and sugarcane in Lafourche Parish, farmers around the state rely on broadband to take advantage of the latest innovations in agricultural technology to increase yields.

Broadband was already essential for everyday life before the pandemic. It's a fact that children in households with broadband access have better educational and career success—even considering all other factors. The advent of online education 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 children in your community deserve just as good of a shot at success as any other children around the state.

This infrastructure is essential to local economies. Businesses need high-speed access to the internet, and now that often means access at their employees' homes, as well as at the workplace. With many jobs remaining remote even after the pandemic, broadband connectivity offers the potential for attracting and retaining jobs and workers from elsewhere.

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 those who have good broadband connections. Your community deserves to have the same quality of life as connected communities.

Imagine a community, today, without access to electricity; the only residents would be hermits, cats (lots of them) and people who really love camping. In 25 years, communities without access to broadband will be the same.

Isn't the state going to handle this?

ConnectLA is here to help in every way we can. We can give advice, supply documents like this one as well as other tools and resources. Most importantly, the governor and the Legislature have allocated millions of dollars in broadband funding opportunities to help make broadband projects happen in your community.

What we can't do is get anything done without local partners. Successful projects require a combination of public and private-sector stakeholders. Simply put, local leadership is a key factor in getting your community online. Without that, broadband expansion may not happen.

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

First, your community probably has the ability to access more money than you think. Local funding from the American Rescue Plan Act can be spent on water, sewer and broadband. Within the broadband category, funding can be spent on infrastructure, affordability, digital literacy and technical assistance. More information on the coronavirus state and local fiscal recovery funds can be found at this link for the U.S. Department of the Treasury. If there doesn't seem to be an opportunity to fund infrastructure improvements through this program, you can look at highly impactful ways to make a difference locally by funding affordability or digital literacy programs for your residents.

Second, the Granting Unserved Municipalities Broadband Opportunities grant program has been set up to fund eligible projects, through a competitive grant application process, in economically distressed parishes throughout the state. In addition to state resources, there are numerous federal programs and funding mechanisms available for eligible projects that will be discussed later.

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

How do we apply for these grants?

Any local government in Louisiana can partner with a private provider and apply for GUMBO grants. Program guidelines, application materials, scoring criteria and other pertinent details will be available on our website. As soon as the website goes live, we'll be sure to let the entire state know!

What federal funding opportunities are there?

Federal programs tend to work differently from state programs in that the local government does not always need to be involved—or even consulted. In a majority of cases, ISPs work on projects by themselves. Several federal programs have been established through recent coronavirus relief packages to directly fund broadband expansion and affordability. There may be federal funding already invested and at work in your community for broadband.

Should we hire a consultant?

You can absolutely hire a consultant to help you with this. Funds received from the American Rescue Plan Act may be used for local administration of broadband projects, including costs of consultants to support effective management and oversight. However, it's important that you have a very clear idea of what you want your consultant to do. As with any large-scale project, due diligence is important. Some 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 from the state Office of Broadband Development and Connectivity?
3. What are my specific needs? Do we need legal, technical or financial advice?
4. Do the internet service providers 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 but haven't because of cost concerns.*
5. Does this consultant have administrative experience working in these areas? Has this consultant worked with other localities before? What type of references can they provide?
6. Does this consultant have the technical experience to assist with the application process? Do they have a strong understanding of technology diverse solutions and architecture surrounding broadband infrastructure?

Regardless of whether a consultant is needed, our team wants to help you get as much done as you can for as little expense as possible. Consultants can be very helpful in specific situations, but it is important to perform due diligence for any third parties.

How do we ensure that our area is not left out by potential providers?

To ensure your area isn't overlooked, start reaching out to local providers about potential partnerships. Being well-versed and easy to work with is only going to expand your options and make providers more willing to work with your municipality as best they can. Leaders should be proactive and engage in conversations with providers regarding possible partnerships that work for the area.

Shouldn't this be a part of a comprehensive planning process?

Absolutely, it should be. However, don't wait until your next scheduled plan to start working on this. By the end of this process, you'll have plenty of material to include in your future plans.

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, and it's not as hard as you may think!

What are our first steps?

You're taking them already! Use this guide to figure out how far along you are and take the next identified steps. If you run into trouble, contact our team for help. We're here to assist.

THE BENEFITS OF BROADBAND

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, work itself. Even if the business location has access to the internet, companies now need their employees to have access at home for teleworking purposes and a better quality of life. For rural communities that have seen residents leave and 20th century industries close, broadband is a necessity for economic stability and growth. With remote work becoming more common in general, it can even attract workers from elsewhere seeking that unique Louisiana lifestyle.

2. **Social Benefits**

   The benefits of broadband for a community are wide-reaching and comprehensive. C*ommunities are safer*: with increased connectivity, public safety officials have faster and more dependable communication networks, leading to faster response times.
   C*ommunities are healthier*: telemedicine, or healthcare delivered via videoconferencing, will bring primary and preventative care to remote and underserved patients, bringing down future costs and leading to better health outcomes.
   C*ommunities are wealthier*: the moment a home is connected to broadband, the value of the property is estimated to increase 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 Louisiana, educational and technology professionals have worked hard to ensure that students have access to high-speed internet, but we know that to succeed, students need access at home as well. Studies consistently show that children in households without broadband have worse post-secondary outcomes. Project research, applying for college and submitting schoolwork is done online now more than ever, and students who are forced to stay late at school or sit in a McDonald's parking lot for the free Wi-Fi are at a disadvantage. Many schools have provided devices to students to take home, but these devices become drink coasters without internet access. Bringing universal broadband to all of our students will improve educational performance and provide enhanced career opportunities.

CHALLENGES TO BRINGING BROADBAND TO LESS DENSE, RURAL AND UNSERVED REGIONS

1. **The Density Issue**

   The real reason there isn't already broadband everywhere is that it basically costs the same amount to either 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 only 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 U.S., broadband companies aren't structured that way. American private sector broadband companies use private capital to build infrastructure and take the risk of not being able to recover their costs.

   In rural areas, where there are only a handful of potential customers, 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 funding, state and federal grants and resources from your private sector partner ISPs 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**

   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.

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. Start by pulling together local leaders who want to help make broadband a reality. Once you've gotten things going, make sure you 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 Baton Rouge and into communities all over Louisiana, and we can back you up with expertise and examples when your folks ask questions.

4. **Securing Funding Support**

   We're not going to sugarcoat it: this is the hard part.

   There are lots of sources of funding for broadband—the American Rescue Plan Act, state guidance and deployment of the GUMBO grant program and numerous federal funding initiatives. And that's before you team up with a private sector partner, which will also be kicking in resources!

   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 municipality beyond any assets you maintain.

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 it owns.

5. Managing the Project

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. Additionally, if they don't act right, you've got friends in Baton Rouge 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. Public Expectations and Concerns

While important, access is not the only issue for us to resolve. We must ensure public affordability and digital literacy issues are taken into consideration. All residents who desire broadband connectivity should receive it and understand how it can benefit them. Keep your stakeholders engaged; be smart about your most valuable resources (people, time and money), and you'll be headed in the right direction.

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.

Phase 1 – Plan

Identify Project Leadership

- **Purpose**: It's critical to have local leadership support for broadband planning and investment relating to access, affordability and digital literacy. Collectively, our state needs to solve the digital divide by 2029. Leaders should understand how an investment in broadband infrastructure will positively impact the longevity of their community. The key to achieving universal broadband is identifying a local government leader who has the authority to make official requests of local government 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. To achieve universal coverage throughout a local area, it's imperative to ensure the presence of a champion within that local government.
- **Task 1**: Local leadership should identify and commit a local government official/employee to champion and oversee planning efforts and act as a Digital Navigator to the ConnectLA team. Make sure to talk with the team to think creatively about how this position fits into your existing structure and funding resources.
- **Task 2**: Local leadership should designate/allocate a certain percentage of time that the Digital Navigator should spend on broadband planning and coordination efforts. Enlisting the help of an external technical consultant is at the discretion of the local government.

Establish Broadband Team

- **Purpose**: The Digital Navigator 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 Digital Navigator 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 municipality's broadband plan to achieve functionally universal broadband coverage by 2029. The broadband management team will also work with local staff involved in broadband-related policies (internal policies, zoning ordinances and parish or municipal codes.)
    - Topics to consider during broadband policy review include, but are not limited to: streamline permitting (types, duration, fees and approval timeframe for permits); reducing or suspending fees for broadband providers (waiving tower space, municipality property access, easements and rights-of-way fees); and advance notifications for "Dig Once" opportunities.
- **Task 1**: Create the broadband management team. This team is headed by the Digital Navigator and should include representation from, but not limited to: local elected officials, local government administration (town, city and/or parish), local government GIS and economic development staff and staff from planning commissions, public safety, public schools and libraries. Ensure that proper subleaders are established for accessibility,

affordability and digital literacy needs. Additional *recommended* team participants include representatives from local healthcare institutions, chambers of commerce, American Indian tribes (where applicable), local industry sectors (farming, oil/gas, banking, electric utility, fishing, etc.) and real estate developers.

- **Task 2**: Establish a meeting schedule. A schedule for periodic meetings will maintain momentum and help keep the processes on track.

Determine Additional Resources

- **Purpose**: Every municipality needs to invest in broadband, whether it be in terms of time, money or other resources.
- **Task**: Local leadership should identify funds available to be used as match funds for grants and/or other broadband expansion needs. Most broadband grants require some level of matching funds and providers may require some contribution toward engineering designs. The GUMBO grant program does not require matching funds from the local government (parish, municipality or school board), but providing matching funds earns the application additional points in the scoring process and makes the application more competitive.

Determine Partnership Model

- **Purpose**: Establishing the nature of the sought-after partnership as well as identifying potential matching funds, 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.
- **Task**: Review the partnership models below and talk with the ConnectLA Team about which option may work best for the municipality. As a reminder, municipalities may be subject to the requirements of the Local Government Fair Competition Act. Remember, every community is unique!
    - **Option 1**: Municipality invests matching funds, and/or shares assets, and/or expedites permitting, etc. (*for a program like the GUMBO grant program*)
        - Municipality funds a portion of capital costs with matching funds
        - Municipality shares infrastructure (vertical assets, fiber, conduit, etc.)
        - Municipality commits to expediting permitting, licensing, etc.
    - **Option 2**: Municipality funds and owns a network
        - Municipality (broadband authority) covers all capital costs and portion of operating (capacity)
        - Private partner deploys, maintains and operates
        - Revenue sharing/payments
    - **Option 3**: Municipality funds, owns and operates its own network
        - Municipality (Broadband Authority) covers all capital and operating costs
        - Municipality staffs operation and maintenance.
    - **Option 4**: A mixture of the options above!

Develop a Communications Plan

- **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**: The Digital Navigator begins periodic communication to inform the public of the municipality's intentions to seek universal broadband. This can be done through public meeting initiatives at the discretion of the municipality or any other method your community regularly uses to share information.

Develop a Local or Regional Broadband Plan

- **Purpose**: Each municipality should establish a broadband plan that will get you from wherever you are to universal coverage. These plans can either be localized, where they are more tailor-made for the municipality or established at a regional level, where regional planning districts can create a plan that can leverage economies of scale. Collaborating regionally can be better, as larger projects save money, connect more folks and typically score better in grant program applications.
- **Task**: Identify if your municipality has completed a broadband plan in the past. If so, this can be the starting point for creating an updated plan geared toward universal coverage. Review the plan to determine if it is outdated or unusable. Determine If your municipality plans to work with other local governments to form a regional broadband plan. Reach out to the Louisiana Association of Planning and Development Districts to determine if a plan has been started that your municipality can participate in.

Identify Local Internet Service Providers

- **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.
- **Task 1**: For a list of providers in Louisiana, visit the Louisiana Public Service Commission website here. If you are unsure of who may be in your municipality, reach out to the ConnectLA team, and we can help you identify who's where.
- **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. The team should consider each provider and proposal received to maximize the benefits for residents. Contact the ConnectLA team for help in this process or if you'd like a member of our team to participate in this meeting. At the meeting:
    - Explain the plan for universal coverage and willingness to work with ISPs to get there.
    - Seek information about their plans for expansion and any perceived local barriers stopping expansion. Gauge whether they would be willing to partner to seek a broadband grant (like GUMBO), and if so, what would the project look like.
    - Ask what they can share with you about where they provide service. Some providers are comfortable sharing some information, some providers will require a signed nondisclosure 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, 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 unserved areas, so it's in their best interests to be as forthcoming as possible.

Identify Service Gaps

- **Purpose**: One of the most important parts of the process is understanding and prioritizing the municipality's areas of need. 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 any grant preparation process. It's important to note that you won't 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.
- **Task 1**: Review the FCC coverage maps to gain knowledge of unserved areas. While these maps are a great starting point in identifying unserved areas, inaccuracies persist throughout some of the data points listed. The FCC is creating more accurate maps for use in 2022 and beyond.
- **Task 2**: Use crowdsourced speed test documentation to determine service gaps. Data gathering by the Delta Regional Authority allows users to find out their network connection speeds. Stakeholders should visit their website to run a test, regardless of current internet speeds available. People residing in unserved areas should visit their local libraries and provide their physical addresses as locations without internet access.

Contact Electric Utilities

- **Purpose**: Whether your municipality receives electricity from investor-owned utilities (such as Entergy or CLECO), an electric cooperative or a municipal provider, they have a role to play in broadband. Electric providers can and often do participate in the delivery of both middle-mile and last-mile broadband projects. Since they already have a connection to most premises in your municipality, they are key partners in planning for new broadband service.
- **Task**: Contact electric providers to discuss how they can assist in achieving universal coverage. If you don't have a contact for your utility, reach out to the ConnectLA Team and we will get you linked.

Identify Federal Broadband Funding in Your Municipality

- **Purpose**: There are several federal broadband deployment programs that have been funded to the tune of billions of dollars throughout the United States. A fair amount of this funding is present in Louisiana and already awarded to ISPs. These programs have different names, different rules, different speeds and different deployment timelines.
- **Task 1**: Investigate existing broadband programs and resources to understand more details about the programs and see what funding may already have been awarded in your community.
    - Rural Digital Opportunity Fund
    - Connect America Fund Deployments
    - Connect America Fund II Deployments
    - USDA ReConnect
    - Emergency Broadband Benefit
    - FCC Form 477 Broadband Data Availability
    - National Telecommunications and Information Administration Mapping Tool
    - Broadband USA Federal Funding Matrix
- **Task 2**: The Rural Digital Opportunity Fund was established by the FCC to combat and bridge the digital divide by bringing high-speed, fixed broadband service to rural homes and small businesses. The Phase I Auction (Auction 904) ended on Nov. 25, 2020, and awarded more than $9 billion to 180 providers to serve more than five million locations. In Louisiana, more than $342 million was awarded to 13 providers to service more than

175,000 locations. These locations are ineligible for the GUMBO grant program under the rules. **GUMBO grant program applicants should take care to make themselves aware of RDOF awarded locations (link provided above) and give due diligence and consideration of these potentially ineligible areas when applying for the GUMBO grant program.** Locations not covered by an RDOF recipient, with internet access service speeds of less than 25:3 Mbps (with wireline or fixed wireless), would be eligible locations for the GUMBO grant program.

Identify Funding Opportunities

- **Purpose**: There are many resources available to assist and support your municipality in establishing or participating in planning broadband expansion. Funding provided by the American Rescue Plan Act can be used for broadband purposes. However, most organizing efforts and local planning may not need funding to be successful. The Digital Navigator can organize efforts locally, with guidance from the ConnectLA team to assist as needed.
- **Task**: Determine if significant planning is needed, and contact the ConnectLA team about which planning support resource is the best fit.

Identify Vertical Assets

- **Purpose**: Vertical assets can be important pieces of infrastructure to a broadband expansion plan. Fixed wireless, cellular and wireline providers may have a need for local vertical assets.
- **Task**: Identify the location of known vertical assets and 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 Barriers to Completion

- **Purpose**: Local governments have to play a role in overseeing broadband deployment through zoning, permitting and other regulations. It is critical that governmental entities protect the public interest but also embrace policies and processes that reduce barriers to broadband deployment. Anything the municipality can offer a potential partner 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. Optionally, local assets can serve as an in-kind match for state grant programs (like GUMBO). Below is a list of assets that could be considered.
    - Space on vertical assets, such as existing towers, silos, water tanks, buildings, etc.
        - Waive, reduce or suspend leases on municipality-owned towers for a potential provider.
    - Share space for towers, network equipment or poles.
        - Sharing space at fire stations/rescue buildings for small towers or poles.
        - Space on, or in, municipality-owned property for tower construction, location of points of presence, networking equipment, etc.
    - Municipality-owned land that could be used for tower construction or other facilities.

- Municipality-owned telecommunication 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 partners.
- 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 partners. It would be wise to delegate this task to the existing Digital Navigator.
  - Leverage ongoing or pending capital projects, such as water, road construction, Main Street revitalization, new subdivisions, 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 a potential private partner.
- Offer municipality-owned anchor institutions for any private partner who partners with the municipality. These can offset the costs of deploying broadband to sparsely populated, unserved areas. The municipality needs to specify eligible potential anchor institutions. Sites might include schools, libraries, public safety facilities, healthcare facilities, local government facilities and property, etc.

Describe Areas of Need

- **Purpose**: Most broadband expansion efforts will be completed in phases. This information can be conveyed to potential broadband providers through a variety of 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 have 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 with the most unserved residents.

Phase 2 – Execute

Determine if Universal Coverage Can Be Achieved

- **Purpose**: You've met with your local ISPs and determined if they are willing to partner to expand broadband service to unserved areas. If they are and have projects in mind, great!
- **Task**: If a partner is willing to move forward, sign a memorandum of agreement or understanding to formalize the relationship and shared goals. Determine the projects and funding gaps for each phase, and start the process of seeking funding and developing grant applications, if applicable.

Work with Partners to Generate Detailed Plans

- **Purpose**: A successful build-out doesn't happen on its own. The municipality and partners must work together to figure out what more information is needed 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.

- **Task**: Using municipality-centric information (assets, incentives, matching funds, etc.) and your partner's commitments, 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 Partners to Apply for Funding

- **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.
- **Task**: Work with partners to identify the best funding opportunities for your expansion project. A combination of federal and state programs should provide adequate funding to help your community.

Monitor Grant Application Processes and Approvals

- **Purpose**: GUMBO grant program opportunities, as well as many federal grants, require specific documentation to determine eligibility for funding. All grant applications will be scored based on established scoring criteria and funded based on the highest point values of applications submitted. There is no limit to the number of applications that can be submitted or the number of providers that a municipality can work with.
- **Task 1**: Work closely with your partners to ensure proper application processes are followed. Review the application before submitting.
- **Task 2**: Work with partners to monitor for formal protests to the pending application. Specific to the GUMBO grant program, the protesting party bears the burden of proof, but a protest may require action by the municipality and its partner before final approval of applications.

Phase 3 – Construct

Monitor and Track Progress of Build-Out

- **Purpose**: The public and municipality leadership need to know how the expansion project is progressing and when they can expect broadband service.
- **Task 1**: The Digital Navigator monitors build-out for compliance and adherence to the timeline and keeps the public informed through all stages of the expansion work. Update local leadership during public meetings about the progress. Doing this with partners, in person, is strongly encouraged. The Digital Navigator should facilitate discussion with grant program compliance officers to ensure disbursement of funding at the appropriate thresholds.
- **Task 2**: Keep in constant contact with partners about progress. Ensure local permitting, land use and rights of way are running smoothly. This is a big part of the Digital Navigator's job at this stage and they should be addressing any problems that arise.

Promote Digital Literacy

- **Purpose**: It is estimated that as many as 761,000 Louisianians may lack the digital literacy skills necessary to take full advantage of broadband services, representing a little more than 16% of our state's population! Within the general working age population of 18 – 64, that number exceeds 462,000. Local governments can use American Rescue Plan Act funding to promote digital literacy and affordability. It is important to keep in mind that only providing affordable broadband access may not achieve the desired outcome if the residents do not have tools to become digitally literate.
- **Task 1**: The digital literacy leader should help organize free, public courses in the newly served areas of the municipality. Libraries can be great partners in putting these together. Recently, cities throughout the country have implemented digital literacy programs. Officials hold classes in several locations and offer other resources for citizens who may have internet issues or affordability concerns. The ConnectLA team can provide additional guidance regarding digital literacy statistics for your area and additional ideas to assist your residents. Additionally, the Louisiana Board of Regents adopted Northstar, a best practice digital literacy program. Check out their website here, and challenge your broadband team to increase the number of digitally literate residents in your area.
- **Task 2**: Work with your internet service providers to ensure promotion of digital literacy efforts are exhausted at all avenues available. As you have come to learn, local leaders have a vested interest in their constituencies, and all residents of the community deserve the chance to thrive with the technology available to them. Lean heavily on existing outreach efforts and engagement techniques for implementation in your own local communities.

POTENTIAL ISSUES

1. **Cherry-Picking Your Population**

   Chery-picking in broadband is not sweet, unlike the name. Expanding broadband to only certain portions of unserved areas within your municipality will make the economics of reaching the remaining areas much more difficult. For instance, if half of your municipality is unserved and your project only connects half of those, the remaining population will be even harder to connect later on—because now there are far fewer potential customers. Projects should take the long view, with universal broadband coverage as the goal. Localities should ensure that all unserved areas, including any potentially unserved low-income and historically underserved minority communities, are included and prioritized in build-out plans.

2. **Navigating Consultants and Planning**

   What we hear time and time again from ISPs 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 its own network, depending on its own footprint, equipment and specifications.

   Our guidance asks the ISPs to do the engineering themselves, saving everyone time and money. Plus, the ConnectLA team's expertise is free, so we hope you'll start there. If you decide to hire a consultant, he or she can assist in inventorying local government assets, demonstrating demand to the private sector and putting you on even footing when negotiating with the private sector providers.

   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, 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 Louisianians are jumping up and down saying, "I need internet!" Once you find an ISP to partner with, its engineered plan will give you the most reliable map of broadband availability in your area, from which you will work. You don't need a perfect map to achieve universal coverage.

4. **Zeroing In on One Solution**

   Fiber, fixed wireless, cable, satellites. So many potential solutions! We urge localities to embrace the hybrid approach to achieving universal broadband coverage and not require only one technology to serve each community. Remember, every community is different and solutions will vary. What works in Acadia Parish may be different from what works in Plaquemines Parish, and what works in one part of town may be different from what works on the other side of the hill. Depending on geography, density and cost structure, different solutions may be needed. Obviously, 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-municipality project that would save time and money. Neither broadband nor residents' settlement patterns stop at municipality boundaries, so you should be looking at unserved areas regionally.

6. Not Receiving Interest from ISPs

While we hope this is a rare occurrence, there may be instances where there are no interested partners. Most likely, there is an underlying reason behind the lack of interest, so please contact the ConnectLA team so we can help get to the bottom of it.

7. Long Drops

Some unserved areas may have long driveways that make connecting them extra expensive. These are called long drops. Even with grant programs like GUMBO, 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 driveways, if provisions otherwise aren't made during project design. These additional costs can reach into 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 municipality, 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 ConnectLA Team

Going alone on expanding broadband is a bad idea. You're going to be less effective for your municipality. Consider us your pro bono broadband advisers, 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. You're 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. Just being dedicated enough to read this document, look past the silly jokes and get the ball rolling in your community is incredible. You are starting a project that will be as important as those that provided water, electricity and telephone service to your fellow Louisianians, and we want to help. Let's work together to make history while improving the lives of your friends, family and neighbors!