

# Broadband Master Planning: A Holistic Approach to Meeting Broadband Goals

By defining goals, gathering data and asking the right questions, communities can develop broadband master plans that lay the groundwork for high-speed networks.

By Ken Demlow / *HR Green*

**S**olutions to having good, ubiquitous broadband are very different for each community. Some communities do not have enough broadband providers; others have plenty of providers but pockets of areas that are underserved; still others have so many providers that they are concerned about running out of rights of way, particularly as fiber for 5G and small cells densifies.

This article discusses a process that can help address all these circumstances: broadband master planning. Some ideas might not seem new, but pulling them together into one process might be a solution to the fiber and broadband challenges communities face.

## BEGIN WITH COMMUNITY GOALS

The broadband master planning process revolves around what a community wants to accomplish regarding broadband. The first step is to identify local leadership (often referred to as the “champion”) that has broad enough support to make meaningful gains toward fiber goals. If there isn’t powerful local leadership and support, an outside entity can’t make a broadband master plan come to fruition. Local leadership can come from several sources, including cities, counties, volunteer committees, municipal utilities, or some combination. Which group emerges as a leader is based on local relationships and the group’s knowledge

and function within the community. It’s important that local leaders belong to entities that will be involved in implementation of a broadband master plan or have strong support from those who will. I have seen champions unable to accomplish action steps because the people tasked with implementation either don’t know how to do what needs to be done or don’t have the capacity to do it.

Next, champions must ask questions to develop community broadband goals. Questions may include the following:

- Does the community have inadequate broadband because of a lack of providers?
- Does the community need more providers to have better competition?
- Does the community have a connectivity imbalance (some well-served areas and others that are underserved)?
- Is telecommunications infrastructure construction (or moving) causing problems in other infrastructure projects?
- Is getting broadband to new developments, residents or businesses difficult?
- Is the community running out of rights of way in any road segments?
- Does the community have a good relationship with telecommunications providers, or are there difficult relationships with some or all in that industry?

- If a new network is needed, what role does the community want to have in building it (P3, build as dark, build as open access, build and operate, etc.)?

If champions don't know answers to these questions or are not clear on the depth of community concerns, there are ways to gather data. Commonly used options include hosting stakeholder meetings, issuing surveys, and soliciting input from city departments. To formulate goals and to reach a consensus on those goals and the steps to address them, it is important to have good data and a collaborative process.

As HR Green has worked with communities across the country, some goals we have seen include the following:

In a small community:

- 1 Attract a provider.
- 2 Make broadband reliable and affordable.
- 3 Explore P3 options.
- 4 Find sources of funding for specific parts of a network (education, medicine, job creation).

In a mid-sized community:

- 1 Develop ubiquity.
- 2 Conserve certain areas of rights of way (especially with small-cell applications starting).
- 3 Solve timing issues.
- 4 Work with providers.
- 5 Promote economic development.

In a large community:

- 1 Preserve downtown and neighborhood feel.
- 2 Fill in broadband deserts.
- 3 Preserve rights of way.
- 4 Maintain public safety (including line of sight).
- 5 Establish a tech area.

Again, it is important that these goals have broad community support. If not, it will most likely be very difficult to take the steps to implement them. It also can be important for these goals to be communicated and widely known throughout the community, across departments and

## WEST DES MOINES, IOWA, SETS EXAMPLE

The city of West Des Moines, Iowa, recently announced it is constructing a citywide open-access conduit network that will allow high-speed internet providers to enter the market by leasing space in the conduit network. This will help increase competition and advance the goal to provide all city residents and businesses access to world-class internet. Google Fiber will be the first tenant to lease space in the network and to provide high-speed internet citywide.

### HOW IT WORKS

Google Fiber will cover a portion of the construction cost to build conduit – available throughout West Des Moines and to other tenants – through its monthly lease payments. Property taxes will not be increased to fund the project. The city will fund its share of the project cost by issuing taxable general obligation bonds. West Des Moines has earned the top credit rating, so city officials will be able to finance the project at greatly reduced interest rates.

Once the city installs conduit in the public right of way, broadband providers – starting with Google Fiber – will pay a license fee to install their fiber in the city's conduit. Google Fiber plans to offer service throughout the entire network, ensuring broad coverage of gigabit speed internet service throughout the city. Every home and business in West Des Moines is eligible for a free connection point to the municipal fiber conduit. The city will install the connections and will contact every business and resident to ensure everyone has the

opportunity to participate. Construction of the citywide conduit network will begin in fall 2020 and is estimated to take about 2.5 years to complete.

### BROADBAND MASTER PLANNING HELPED

The new network represents the realization of a key element of the city's 20-year strategic plan, which calls for all residents – regardless of means – to benefit from high-quality and high-speed connectivity. To achieve this objective, the city took a proactive approach to fiber and broadband master planning by

- Communicating with the provider community several times, asking for feedback at each step
- Designing duct bank options to fit different congestion and traffic scenarios
- Developing policy to encourage rights of way, conservation and preferred paths.

As a result of master planning, the city managed congested rights of way, worked with providers and attracted investment. It's important to note that although the Google Fiber project wasn't a direct result of the broadband master planning project, it helped pave the way.

"Now more than ever, reliable high-speed internet is critical," said West Des Moines mayor Steve Gaer. "It's amazing that in just four years, West Des Moines is well on its way to achieving the ... goal of finding an innovative way to provide access to broadband for all our residents and businesses."

## Fiber should be the focus of broadband master planning for the best connections and future options.

at all levels of leadership. If members of a community move toward these goals together, they stand a much better chance of being implemented.

### CLARIFY GOALS AND PREPARE DATA

A community can take specific steps to address the goals it identifies. Although a lot could be written about each one, for brevity, here are some possibilities that can apply to most circumstances:

- Know what you have. It may be conduit, fiber, RF, etc. Knowing what you have can help you explore options to fill gaps, make improvements and negotiate with providers (if that is an option you choose).
- Make this information available in a usable and updatable format (such as GIS).
- Use this information to understand helpful details about what it will take to meet goals. For example, if your community is small and you want to attract providers, think of the power of being able to approach potential providers with these types of information: A map that shows conduit available, a list of potential customers (and how much they want better broadband) and preferred, pre-approved paths.
- Identify possible sources of funding. Approach banks, grant sources, stakeholders whose industry might have funding sources (schools, medical institutions, libraries, utilities, etc.), and businesses that might underwrite part of the costs. There likely will be more funding for broadband in the next few years than has been seen before. How much, how it will be distributed, and who will be eligible are still being worked out. Thinking creatively and developing the relationships to pursue those grants are all steps that can be worked on now.
- Make sure your policies follow your goals for defense (protect what needs managing and incentivize your goals) and offense (accomplish the goals that your community develops for connectivity). Policy can also help your community put in more conduit (for example, adopt a “dig once” policy) or clarify where there are preferred paths and limitations because of congested rights of way.
- Keep your rights of way in mind. Your community has only so many rights of way, so keeping them orderly and available or using them to incentivize your connectivity goals is important.
- Watch and plan for future trends. This also could depend on whether you have enough broadband, but technologies such as 5G are coming and will impact your rights of way, aesthetics, public safety, etc. There are steps you can take,

and working on those now is a good idea.

- Go toward providers, not away from them. In most circumstances, providers want to work with communities. If you have clear, reasonable goals, providers will often consider how to work with you to achieve mutually beneficial results. There likely will be some give and take, but it is in your community’s best interest to lead the discussion as opposed to reacting.

### CREATE A BROADBAND MASTER PLAN

So far, I have introduced community-supported goals and the steps and questions that can help round out goals and focus efforts. Now it’s time to turn all of this into a broadband master plan. (Note: Fiber should be the focus of the plan for the best connections and future options.) HR Green encourages clients to develop defined plans and processes that include

- 1 Fiber and broadband goals
- 2 Policy to support those goals
- 3 Documents that show the way to achieve the goals:
  - GIS of what is applicable to your goals, such as existing assets and connectivity gaps and possible solutions to meet those gaps
  - Survey results (if applicable)
  - Design and construction specifications
- 4 Sources of possible funding with timetables
- 5 Plan for provider outreach and collaboration
- 6 A process that systematizes next steps, completion of unfinished tasks, meetings to coordinate, updating, and other operational matters.

To ensure that a broadband master plan evolves with community needs, it should be reviewed at least annually. It’s important to think through on a regular basis whether changes are necessary, including whether policies or processes need to be amended or improved because something isn’t working, documents or maps need updating, or opportunities emerge for new projects that could be pursued and integrated into the plan. I recommend that appropriate champions and stakeholders form an action team that reviews a checklist every month to consider potential changes and to maximize all opportunities (dig once opportunities, capital improvement projects and zoning updates, development needs and opportunities, duct bank options and more).

If your community reacts to fiber and broadband conditions, you likely will be subject to some other entity’s plans and goals (or lack thereof). My experience shows that if you develop a broadband master plan that defines and provides the path to meet your community’s fiber and broadband goals, you stand a much better chance of reaching them or at least moving toward them. ❖

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