



The Broadband Group and City Utilities of Springfield, MO

How a city owned electric utility effectively 'changed the math' on traditional network build economics, future-proofing its grid operations while advancing connectivity options for residents and businesses throughout its service territory.

In 2016, Springfield MO's City Utilities, a city-owned electric utility, embarked on a project to modernize its community fiber network and enhance its future utility operations. City Utilities has unique technology requirements as it provides Electric, Natural Gas, Water, Transit and Fiber Operations across its service territory. While City Utilities had built fiber in select areas of the city, it was clear that to successfully maximize long-term utility technologies, it would require the deployment of a service territory-wide fiber-optic network. Yet, like many utilities, City Utilities found the cost of such an ambitious fiber deployment plan prohibitive. To secure control over its connectivity future and ensure its effectiveness as a utility for the city, it sought a solution for expanding its own fiber network.

When the math doesn't work, change the math.

"We refused to believe the network that we knew our community needed simply 'wasn't possible.'" said Springnet director Jeff Bertholdi. Bertholdi explained that they went in search of possible models. The discovery exercise lead City Utilities to visit the city-owned electric utility in Huntsville, Alabama where they heard the Utility was leasing part of its newly built fiber network to an Internet Service Provider (ISP) to help support build costs. The newfound opportunity to lease excess fiber, effectively transforming fiber operations into a larger revenue generating asset, "changed the math" on traditional fiber build economics, making a citywide fiber network suddenly viable for Springfield.

Identifying a Qualified Consultant and Advisor

City Utilities sought to build a comprehensive fiber network across the community to enhance gigabit accessibility and future proof visibility and control of their distribution system, including more advanced grid monitoring technologies. For long-term benefits, the goal was to ensure the fiber would pass every residence within their service territory, regardless of a region's income level.

City Utilities issued a Request for Proposal (RFP) to identify a partner who could guide them in their fiber network venture, "While we knew The Broadband Group oversaw Huntsville's network build, we wanted to ensure we understood every potential option," explains Bertholdi. "Upon evaluating various organizations, TBG emerged as the clear choice. We were seeking a company with extensive experience in every aspect of a network build that could leverage lessons learned and best-practices versus a traditional engineer/design firm. We required a partner with long-term perspective on the industry that could take us from initial strategy development to network design, to potential network tenant selection, all the way through construction. TBG's track record in creating industry shaping structures over the years was a distinguishing factor."

"TBG tailors network deployment options according to the specific desires of a city or utility, avoiding any preconceived assumptions. Our role is to educate our clients, offer a range of options, conduct assessments to mitigate risks, and ultimately discover pathways to achieve the utility's objectives. I think that appealed to City Utilities in the selection process," explains Andrew Hurry, The Broadband Group's Senior Financial Consultant.

Applying Learnings to Select a Path

Bertholdi explains that during the initial planning phase, The Broadband Group embedded itself within the Utility to conduct in-depth analysis to ensure better recommendations as well as a solid strategic plan. TBG developed a comprehensive report along with a preliminary network design that served as the basis for shaping potential build metrics. Also included were financial requirement insights along with a dynamic pro forma with a multitude of scenario analysis. “We were suddenly empowered to make informed decisions in a vertical that was outside the core area of expertise of the Utility.”



One of TBG’s suggested network deployment solutions was the “Utility Lease Model” that was recently successfully completed in Huntsville. In this approach, City Utilities would design and construct its citywide network with a primary objective of better serving its community through improved fiber accessibility and enhancing future utility operations. Additionally, the network would include excess fiber capacity that could be leased to an ISP, creating a new revenue stream. “The model was inspired by the thesis introduced by Blair Levin (Brookings Institution), in which he challenged the industry to identify deployment models that ‘change the math’ and allow for fiber networks to be deployed in locations where they financially would not, or could not, otherwise occur” explains Jeff Reiman, President of The Broadband Group.



From Plan to Execution

After careful examination of deployment options, weighing risks and rewards, City Utilities made the strategic choice to adopt the Utility Lease Model for its territory-wide fiber network deployment. The Utility Lease Model was seen as the optimal approach to provide the Utility with a communications platform that could support today’s technologies, including supervisory control and data acquisition (SCADA), and advanced meter reading (AMI), as well as future innovations.

The proposed fiber network would span almost 1,100 miles and pass approximately 115,000 Springfield homes. With the network design in place, it was now time to find an ISP anchor tenant that was operationally and financially qualified to sign on as a long-term network tenant. An RFP was circulated by TBG and dozens of responses from interested ISPs who saw the value in reaching 115,000 new potential subscribers without having to build their own network.

TBG financially assessed and reviewed each responding ISP for overall qualifications, provided a recommendation, and City Utilities selected Centurylink (now Lumen) from the handful of vetted possibilities. With a signed network lease in place, City Utilities was able to get Board approval for the 1,100-mile fiber build to commence.

Time to Build

With Board approval secured, TBG worked alongside City Utilities to identify material and construction vendors for network implementation. Recognizing the potential for unforeseen challenges in a project of this magnitude, City Utilities required a structured plan grounded in realistic risk assessments.

Patrick Thibeault, The Broadband Group's SVP & Chief Technology Officer explains that the key to completing the network build in only three years was TBG's "just-in-time engineering," allowing us to be flexible, focus on budget and stay on-time. When we discovered areas that could be tweaked or improved, we could implement them in one of our future phases, of which we had seven. This allows us to be nimble and achieve what was previously thought to be an impossibly short construction timeline."

One major challenge that could never have been anticipated was the groundbreaking occurring only months before the pandemic. Beyond health concerns, the project and its vendors would face previously unimaginable challenges.

Bertholdi recalls that, "In spite of pre-orders and efforts of our vendors, some material orders went unfulfilled on-time due to pandemic supply chain demands. But when our primary suppliers ran out of the materials, TBG's network allowed them to find solutions by locating materials and equipment we needed. Somehow, TBG was able to maneuver the industry challenges and came through for us." Despite the seriousness of the pandemic and some inevitable delays, the project ultimately was successfully completed months ahead of schedule.

High-Performance Internet Connectivity: The Utility Lease Model's Side Benefit

Today, Bertholdi explains that the project has been an overwhelming success. City Utilities can implement any utility connectivity while Brightspeed (the anchor tenant after purchasing the region from Lumen) provides another choice for Internet services for Springfield's residents and businesses.

Springnet director Jeff Bertholdi explains that "local internet was not only frustrating, it was unacceptable. The number of calls we were getting from residences complaining that their ISP was not meeting their needs was remarkable."

Since Brightspeed started offering Gigabit internet service, Bertholdi says, "We continue to hear positive feedback from local households receiving the fiber-enabled Internet services, which is excellent. We now have a motivated provider delivering high-performance service to our community, introducing a level of competition never before seen in this market."

"The transformation of Springfield, even in these early days of the project being complete, has been incredible to witness. When we first visited Springfield in 2016, the home video rental business was still in existence," recalls TBG's president, Jeff Reiman. "Legacy internet infrastructure was so poor that Netflix was still not widely adopted to the point video rental stores were still in demand. The new fiber network has been transformational for the city, highlighted by the Wall Street Journal naming Springfield as the 'Top City for Remote Workers' in the country. A high-profile recognition that could not have even been a consideration absent the fiber network."



Better Operations. Improved Services. The Utility Lease Model's Many Benefit

The fiber network has already improved reliability of the electric systems operations. "The process of building the fiber network, which included pole upgrades, has introduced material financial benefits. Make-ready was a significant effort, which ultimately improves reliability of system since every pole touched is essentially brought up to spec." explains Bertholdi.

"Additionally, since Brightspeed started offering local internet service, we continue to hear positive reviews from area households now receiving Gigabit fiber internet, which is great for the city."

Why The Broadband Group?

"My advice for other utilities considering a similar path is to prioritize consultants and advisors who have completed projects in their portfolio." says Bertholdi. "Many utilities recognize the need for infrastructure upgrades, however struggle with the financial aspects involved in a large-scale fiber build. Working with The Broadband Group and the Utility Lease Model unlocks the roadblocks and empowers your community to become a leading-edge digital city."

The Broadband Group's Top 5 Benefits for utilities to partner with an ISP in a Utility Lease Model arrangement.

1

Minimize Market Risk – By constructing a fiber network that suits a utility's requirements and leasing excess capacity to a tenant ISP, the utility can focus on its core competencies without the numerous challenges in becoming an ISP. Further, the tenant(s) ISP pays a fixed lease rate, regardless of its take rate. While improved residential and business internet service and increased competition are desirable outcomes, they are more of a byproduct than a primary goal for the utility.

2

Remove Drop Risk – Customer drop installation is often the most challenging aspect of fiber network construction. Under the Utility Lease Model, the tenant ISP assumes this responsibility and the investment in drops only occur when there is immediate revenue from a new subscriber.

3

Network ROI – The lease contract outlines the tenants' fixed monthly payments throughout the term of the agreement. The anchor tenant commits to paying a set amount for each household passed, effectively transforming a previous cost center into a revenue generating asset.

4

Better Balance Sheet – The Utility Lease Model was carefully crafted to respect the metrics of the broadband industry. This attracts reputable ISPs with the financial capacity and operational wherewithal to be sustainable over the term of the agreement.

5

Mitigating Political and Legal Risks – By not becoming the primary ISP, The Utility Lease Model avoids the push back communities have seen for a public entity competing with private business. In this case the utility is not competing against private businesses. A utility builds the network it needs for its internal operational priorities and simply enables ISPs to provide fiber enabled broadband services to residents and businesses.