

GONs UPDATE

By Charles M. Davidson & Michael J. Santorelli, Directors

1. TENNESSEE V. FCC – KEY TAKEAWAYS

On August 10, the Sixth Circuit Court of Appeals issued an [opinion](#) in a case reviewing [FCC preemption](#) of laws in North Carolina and Tennessee that, for an array of reasons, limited the ability of existing municipal broadband providers to expand their networks into surrounding areas. The majority ruled that the Commission’s “preemption order must...be reversed” because Congress did not explicitly empower the agency to engage in this kind of activity.

As discussed at length in a previous [Briefing](#), the FCC attempted to justify its actions using [section 706](#) of the 1996 Telecommunications Act. As a result of earlier Commission action, the FCC sought to [unlock for itself](#) seemingly sweeping authority pursuant to section 706 to engage in regulatory actions that the agency asserted would help to facilitate the deployment of broadband. In the FCC’s view, its preemption of the state oversight laws at issue was in furtherance of the mandate included in section 706 because it was acting to “remove barriers” to broadband deployment.

North Carolina and Tennessee sued the Commission, arguing that it had overreached because Congress never explicitly authorized such dramatic intrusion into the internal affairs of the states by a federal agency.

The court agreed. In its ruling for the states, the majority applied the “clear statement rule,” a standard grounded in constitutionally enshrined notions of federalism that was applied by the Supreme Court in a similar context over a decade ago in [Nixon v. Missouri Municipal League](#). This rule states that Congress must be “very clear” (opinion at p. 17) when it empowers an agency like the FCC with the ability to engage in preemptive actions that have the effect of “interposing federal authority between a State and its municipal subdivisions” (quoting *Nixon*). As the opinion notes, “the political subdivisions of a state [*i.e.*, its municipalities] are nothing more than that state’s “convenient agencies,” and the state generally retains the power to make discretionary decisions for its subdivisions, just as a board of directors generally retains the power to make discretionary decisions for a

AT A GLANCE

This Policy Briefing evaluates a number of major GON-related developments since the ACLP’s [April 2016 update](#). The systems and issues discussed here include:

1. *Tennessee v. FCC*
2. *GONs Developments: Starts, Stops, and Failures*
 - Bristol, VA
 - CT Gig
 - *Sidebar: Pole Attachments*
 - Grand Junction, CO
 - Kentucky Wired
 - Laketown, MI
 - Pitcairn, PA
 - Madison, WI Feasibility Study
 - Tennessee EDC Broadband Report
 - *Sidebar: Gaga for the Gig?*
3. *Dueling Visions of Public-Private Partnerships*
 - *Sidebar: Federal infrastructure investment imperatives*
 - *Case Study: Westminster, MD*

company” (op. at p. 18). Because section 706 “does not contain a clear statement authorizing preemption [of state] statutes that govern the decisions of their municipal subdivisions,” the court ruled against the Commission (op. at p. 21).

The outcome of this case is notable for several reasons. *First*, it identifies at least one area where the FCC cannot use section 706 to further its broadband agenda. This represents the first real limit on section 706 authority. But the ruling is very narrow – it only applies in the specific context of municipal broadband laws. The majority stated that the “holding is a limited one” and does not address whether section 706 “provides the FCC any preemptive power at all” (op. at p. 22). This leaves open the possibility that the Commission could rely on section 706 in other preemption actions, *i.e.*, those not involving municipal broadband.

Second, the opinion highlights the many risks associated with continuing to marginalize the states in ongoing efforts to bolster broadband connectivity across the country. As noted in a previous [Update](#), the FCC and other federal entities have engaged in an unprecedented level of direct coordination with localities in furtherance of a decidedly pro-municipal broadband agenda. In the aftermath of the Sixth Circuit case, the FCC and other federal entities should be on notice regarding the importance of respecting the sanctity of state-local relations and should recalibrate their pro-GONs advocacy accordingly. Otherwise, further attempts to circumvent state prerogatives will only yield additional litigation.

Third, the court reiterates that the merits of municipal broadband, whether positive or negative, do not matter in its analysis (op. at p. 22). This echoes the Supreme Court’s approach in *Nixon*, wherein the court noted that the case there did not “turn on the merits” of municipal broadband.

In response, FCC Chairman Tom Wheeler [viewed the decision as a defeat](#) for broadband competition, but he remained defiant in his support of municipal broadband. Ardent pro-GONs advocates also [remained optimistic](#) about the future of these systems because the case

helped draw attention to the issue of community involvement in building broadband networks. The National Conference of State Legislatures, on the other hand, [hailed](#) the court’s ruling as a “great victory” for states’ rights. Other groups representing state-level policymakers [responded in kind](#).

These disparate reactions highlight the unproductive fault lines that have emerged in the ongoing dialogue about broadband in the United States. Long seen as a last resort option for bringing Internet access to unserved areas, GONs, thanks to the coordinated efforts of advocates and supportive federal officials, have been reframed as essential vehicles for addressing what some assert as lackluster levels of competition and speed in areas already served by multiple ISPs. Notwithstanding substantial data (i) regarding high levels of competition, (ii) about significant gains in service quality, speed and capacity, and (iii) detailing the very poor (and expensive) track record of GONs, a seemingly ever-changing narrative about the perceived viability of municipal broadband has succeeded in gaining some legitimacy – a fact evidenced by the FCC’s efforts and related federal initiatives.

Among other concerns, one negative outcome of these efforts is the attempted marginalization and increasing alienation of a key group of partners in bolstering broadband in this country: the states. Increasingly, state actors, legislators, regulators, and governors who do not acquiesce to the agenda of pro-GON advocates are [seen as offering nothing more](#) than “interference” with localities’ proclaimed “right of self-determination.” This is an unfortunate outcome that dismisses the many key roles that state entities are well positioned to play in bolstering broadband connectivity in meaningful, rational ways.

2. RECENT GON DEVELOPMENTS: STARTS, STOPS & FAILURES

The following (i) discusses recent GON-related happenings in cities and states across the country and (ii) provides updated information regarding several of the GON projects mentioned in our [previous Update](#) from April 2016.

Bristol, Virginia

The failed GON in Bristol, VA is still in the process of being sold off to a private entity. The process has proven to be much more arduous than anticipated by local officials. As noted in our previous [Update](#) (p. 3), the system is being sold off because it had become a financial drain on the city. The process of actually selling it, though, has been prolonged because of the many different entities that need to approve the sale. The approval process was [initially expected](#) to last between 120 and 150 days as a result of the network's complex and varied funding sources. However, this [deadline has been extended twice](#), now to December 31, 2016, to allow time for stakeholders to address unforeseen complications related to debt and priority. Recently, the utility-owner of the system [approved a loan](#) from the broadband division to cover a \$1.8 million shortfall in cable revenue. Such shortfalls and other financial issues have plagued this troubled system for many years. (A much more detailed analysis of this GON, which includes an overview of a recent audit that uncovered additional debt associated with this system, is available [here](#).)

CT Gig

Despite [numerous questions and financial concerns](#) (p. 4-6), the efforts by some in Connecticut to promote GONs as a means of bolstering broadband connectivity continue apace. In June, the state's Consumer Counsel, who has been leading the *CT Gig* initiative over the last few years, filed a petition with state regulators in furtherance of these efforts. In particular, the [petition](#) called on the state's regulatory commission to open a proceeding to "develop rules to promote the fair and efficient use of the space or "gain" reserved on utility poles and underground conduits...and to investigate contractual, procedural, and economic barriers to the use by municipalities of the Municipal Gain."

The "Gain" in question was created by statute. [Connecticut state law](#) requires that:

"Each town, city, borough, fire district or the Department of Transportation shall have the right to occupy and use for municipal and

state signal wires, without payment therefor, one gain upon each public utility pole or in each underground communications duct system installed by a public service company within the limits of any such town, city, borough or district. The location or relocation of any such gain shall be prescribed by the Department of Public Utility Control. Any such gain shall be reserved for use by the town, city, borough, fire district or the Department of Transportation."

The Consumer Counsel [rationalizes](#) the petition as necessary to "remove...barriers that limit" the use of these Gains by municipalities. The Counsel argues that greater use of the Gain by municipalities can facilitate broadband investment and deployment, including by encouraging cities to deploy their own networks via these conduits.

Sidebar: Pole Attachments

The *CT Gig* initiative underscores the importance of issues like *pole attachments* to broadband deployment. There are numerous opportunities for state and local officials to streamline the ways in which they grant applications for using poles in the construction of broadband networks. However, some have attempted to leverage the broad consensus in support of the need to improve the ways in which poles are built and accessed in their advocacy for GONs. The effort in Connecticut is one example of this emerging dynamic. Another arises in the context of efforts to promote so-called "one-touch make ready" policies in municipalities. GON advocates [view one-touch policies as key](#) to facilitating certain kinds of GONs models.

In addition to GONs, [some argue](#) that one-touch-like policies could attract new private ISPs to local markets. The example often cited is how these policies have helped [support Google Fiber](#), which uses poles to deploy its network infrastructure (unlike most ISPs, Google does not bury its own fiber, opting instead to use telephone poles and other above-ground structures *owned by others* to support its lines). The owners of the poles, though, highlight that one-touch policies

[make little practical sense](#). Concerns abound regarding the potential job-related impacts of these policies, including possible job losses of union workers employed by pole owners (typically local telephone and electric companies). Concerns also exist regarding the potential negative impacts on service resulting from unfettered third-party access to poles owned and maintained by others. Last but not least, concerns exist regarding the possible impacts on competition – *i.e.*, whether allowing a company to access and move the equipment of a competitor might lead to anticompetitive behavior.

Rather than attempt to frame pole owners as opposed to possible competition by new entrants, which is what has unfortunately happened in several cities looking to acquiesce to Google Fiber's demands vis-à-vis building its network, *a better course forward would be for policymakers at the state and local levels to take a holistic approach to the issue of pole attachments*. This issue is long overdue for comprehensive reform.

Grand Junction, Colorado

In Grand Junction, CO ([population: 60,000](#)), local officials have spent much of the [last two years](#) evaluating the feasibility and need for a municipal broadband system. After [approving](#) a ballot measure to authorize this exploration in April 2015, city officials [engaged a consultant](#) in November of that year to “provide a road map to expand local broadband capabilities.” These efforts were to include a survey to gauge local broadband needs and a set of recommendations for possible paths forward. The initial scope of inquiry was [limited to](#) the downtown area, namely whether and to what extent new fiber-optic lines might be needed to serve municipal commercial customers. However, in December 2015 the city issued an [RFP](#) seeking “partners in an initiative to bring [gigabit] Internet infrastructure initially to its downtown core and eventually to the remaining areas of the City.”

The consultant's initial report, including a summary of its [survey results](#), was [presented](#) to the city in March 2016. The report was generally pessimistic about the possibility of forging a fruitful partnership with a private provider to

achieve the city's broadband goals of making gigabit connections universally available. Instead, the consultants outlined several GON-like paths forward for the city. In response, the City Council [tentatively agreed](#) “to a model of providing broadband that includes having the city build a dark fiber network to every home and business in the city, finance and own the network and contract with an operator to provide the electronics and resources to operate the network, providing internet services to customers.” Per the consultant's estimate, *the cost of the system was projected to be in the \$50 million-\$70 million range*.

Several months later, the Council began to rethink this approach. Concerns emerged about whether there was real demand for such a system in the city. Indeed, one Council member [suggested](#) that the survey conducted by the consultant was “biased.” Nevertheless, the city has [opted to move forward](#) with a “demand survey of the community [in an effort] to learn if Grand Junction should take further steps towards establishing a fiber optic network.”

Kentucky Wired Initiative

Kentucky Wired, the ambitious, costly, and complex statewide fiber initiative being explored in partnership with private equity firm Macquarie Capital, has moved forward in recent months. Cost concerns arose earlier in the year; more recently, several [delays have pushed back](#) the estimated completion date of the 3,000 mile middle-mile network to 2019. As a result of the delays and additional uncertainty about the overall cost of the system and related concerns, [Fitch recently](#) affirmed their rating of the bonds being used for this project but revised their outlook from stable to negative.

Although many of the logistical and financing details [appear to be in order](#), the outlook for revenue generation remains hazy. The network [will not generate significant revenue](#) at least over the first years of operation. The bulk of projected revenues over the longer term are expected to come from entities and institutions that will be charged when accessing the network. In the [words of the Governor](#): “We will build it, they will come,

their use of it will drive the revenue associated with what's needed to pay this debt back." This assumes, though, that the network will be able to attract a substantial amount of business. With other entities competing for the business sought by *Kentucky Wired*, it remains to be seen whether the network will be able to generate revenues sufficient to pay down its significant debts and to cover the costs associated with maintaining and operating this vast network. Indeed, in view of the history of GONs failures across the nation, this is a dubious proposition.

Laketown, Michigan

In May of this year, residents in Laketown, MI ([population: 5,500](#)) [voted against](#) pursuing a municipal broadband network for the time being. More specifically, local officials [asked](#) "residents to approve a bond issuance [of \$8.6 million] and new tax to pay for the creation of an underground fiber optic cable network throughout the township." The [initial push](#) for a GON in Laketown stemmed from concerns about the lack of broadband in small pockets of the town and a desire to introduce more competition into the local market. To those ends, a [vocal minority](#) in the area sought to convince residents that a FTTH system was needed for an array of economic development reasons. Those [opposed](#) to government intervention in the form of a GON focused on the risks involved in investing in a

system that many thought was unnecessary because the vast majority of the town already had ready access to several broadband options.

In the aftermath of the vote, uncertainty remains about the best path forward for the town. Some local officials [called for a revote](#), arguing that failure to move forward with the proposed GON will cause the town to "die." The town continues to work with a consultant to determine possible next steps, while it appears that others have [urged local officials](#) to work more closely with incumbent ISPs in an effort to figure out more cost effective means of improving broadband access.

Madison, Wisconsin

In August, the results of a [feasibility study](#) regarding a possible citywide FTTH GON was delivered to policymakers in Madison, WI ([population: 249,000](#)). City officials [commissioned the study](#) late last year in an effort to study how Madison might "be in a league with Chattanooga (Tenn.) and Kansas City." Among other things, the study estimated that it would cost between \$143 million and \$212 million to deploy a citywide network (p. 8). The study also offered several models for pursuing this network, including one where the city would deploy a dark fiber network and rely on private ISPs to "light" it and deliver service to end users, much like the

Sidebar: Gaga for the Gig?

GON advocates continue to promote gigabit fever across the country as they [attempt to convince](#) local officials, residents, and small businesses that they need such super-fast connectivity now. To that end, assertions about the relationship between gigabit speeds and economic gains abound even though *there is no evidence that such a relationship exists*. Arguments that the networks that can deliver such speeds – those built with fiber – are "future proof" also continue to be made despite the fact that no communications technology has ever proven to be immune to the demands of consumers and the creative destruction of ceaseless technological innovation. The following provides some additional perspective:

- According to [recent FCC data](#), broadband connections exceeding 25 Mbps are widely available, and many live in areas where 50-100 Mbps speeds are available, but most consumers choose to subscribe to plans that deliver speeds in the 10-25 Mbps range.
- [Google Fiber](#) has begun to [pull back](#) on its fiber deployments, a decision owing in large part to low take-rates for its Internet service, the centerpiece of which is a gig.
- In "gig city" [Opelika, AL](#), there is only one gigabit subscriber despite ubiquitous availability. Most consumers there prefer connections in the 25-50 Mbps range.
- In [Chattanooga, TN](#), another "gig city," only a very small percentage of those who subscribe to the FTTH GON there choose the gigabit package.

approach being used in Huntsville, AL.

Given the high-profile nature of this initiative – Madison, the state capital, second-largest city in the state and home to a [major research university](#) with over [43,000 enrolled students](#), is among the largest cities in the U.S. to take serious steps towards a citywide FTTH GON – the feasibility study merits analysis.

The following sets forth a number of key takeaways regarding the study:

Rationales for Pursuing a GON. The study offers a handful of rationales for building a municipal network: enhancing digital equity; assuring ubiquitous availability; bolstering competition among ISPs; increasing consumer choice; and providing the city with control over the broadband infrastructure (p. 4). The authors of the study – consultants hired by the city – based these rationales on conversations with local stakeholders and attempted to ground them in data gathered during a survey of local attitudes towards broadband.

The [equity](#) and [ubiquity](#) rationales revolve around a desire to close the digital divide in Madison by ensuring that every resident has access to broadband. Like every city and every state in the country, there is a gap between those who have adopted broadband in Madison and those who have not; very few areas of the city, though, remain unserved. The contours of Madison’s digital divide reflect those [evident across the country](#) – in general, broadband adoption correlates with age, income, and level of educational attainment (p. 52). Overall, though, only 11% of the population lacks a home Internet connection (p. 48), which means that the city’s population is already well connected. The resident survey conducted in conjunction with the study also makes clear that Internet connectivity rates are generally above-average in historically under-adopting groups (*e.g.*, senior citizens) (p. 52). The study suggests that the proposed GON would help to close the digital divide by finally bringing broadband to unserved parts of the city while also helping to lower costs by increasing [competition](#) among ISPs. The assumption is that the remaining non-adopters will subscribe to the city’s service

because it is cheap and fast. However, [data from the National Broadband Map](#), along with information included in the study, indicates that Madison is already incredibly well served by multiple wireline and wireless broadband providers, many of which offer speeds in excess of the FCC’s benchmark. In short, availability of a broadband connection does not appear to be an issue.

To the extent that the cost of a broadband subscription and/or access device might be a barrier to adoption for some (recent data from NTIA [suggests otherwise](#)), the city might be better served waiting on the results of a [pilot program](#) it recently launched. The program is aimed at making low-cost connections and computing devices available to low-income households. Coupled with private-sector efforts like low-income offerings by local incumbent ISPs [Charter](#) and [AT&T](#), as well as forthcoming federal broadband subsidies via Lifeline, there appear to be numerous avenues to address equity issues in more affordable and less risky ways than building a GON in a city where multiple broadband connections are already available to most residents.

Deployment Model. The study recommends that the city pursue an open access FTTH network that is initially deployed as dark fiber; private ISPs would partner with the city to “light” the fiber and provide last-mile services to residents. The hope is that these ISPs will help to bolster the local market by competing amongst themselves and with incumbent ISPs; the city would retain control over the core fiber assets (p. 23-31). The study rationalizes that this approach is best because it “mitigates risk” by leaving the city with ownership of the fiber infrastructure, the assumption being that Madison could sell off the network if it falters or fails (p. 15). The study acknowledges that this model is not without risk because of the significant up-front costs needed to actually build the network, but it attempts to assuage those concerns by offering very optimistic assumptions about how Madison might recoup these investments. The study also attempts to position the open access model as superior to traditional facilities-based competition over the long term because of the theoretical potential for robust competition in the

provision of last-mile services (p. 25-26). Critically, though, the study notes that these benefits could be – and often are – outweighed by the significant costs associated with deploying the network (p. 23). In addition, the overall success of the proposed model hinges on the ability of Madison to attract at least one viable ISP to “light” the dark fiber and deliver services to end users. Although many advocates, as well as the consultant that prepared the Madison study, point to perceived successes in places like Huntsville, where Google has indicated its willingness to be an anchor ISP for a forthcoming open access dark fiber network, there have been many instances where this model has failed to gain traction amongst potential ISPs and customers alike. Examples include failed networks in Burlington, VT, [Provo, UT](#) and the multicity [UTOPIA](#) project in Utah.

Estimated Costs & Potential Financing. The estimated cost put forward in the study to overbuild broadband infrastructure in the city is likely an optimistic under-estimate. The study notes several times that its estimates rely on a number of assumptions, a major one being that the GON will capture 35% of the local market for residential and small business broadband services (p. 8). In a market as well served as Madison, where multiple private providers already compete, this is a sizeable share of the market. The basis for this assumption is the resident survey, which found that many respondents said they would be willing to switch ISPs if they could pay less for faster speeds (p. 63-64). This enthusiasm was tempered a bit by those reporting less willingness to pay for installation fees above \$100. Many customers also expressed a high level of satisfaction with their current broadband service. Surveys meant to gauge consumer demand for a GON tend to be unreliable because the questions are asked in a vacuum. Similar surveys in places like [UTOPIA](#), [Groton, CT](#), and [Monticello, MN](#), reported favorable theoretical demand for a GON, but were quickly disproven when residents failed to change from their current provider to the municipal provider. As a result, the networks, which many assumed would thrive based on initial resident feedback, struggled from the start.

As a potential hedge against financial insecurity in the short-term, the study also proposes charging its private ISP partner a “minimum fee of \$15 per passing per month” (p. 14). In layman’s terms, this fee would apply to all “residential and business premises” in Madison (p. 14) whether or not they choose to subscribe to the service. The financial model included in the study assumes that this fee would be assessed for many years – almost in perpetuity – and that the city would increase the fee over time to cover “operational and maintenance costs” that will inevitably arise (p. 14). Although nominally assessed on the ISP, this fee will likely be passed through to subscribers in some form or another. Moreover, if the network struggles to gain the projected 35% market share, subscribers might be asked to foot much more than their \$15/month share. This would undermine the ability of the GON to compete on pricing with incumbent ISPs, rendering it an unattractive option for Internet service.

Ultimately, any financial difficulty will weigh heavily on the city because it will be shouldering all of the upfront costs associated with building the dark fiber network (p. 155). Even though the study tries to frame the GON as a long-term investment that will eventually yield positive returns, the assumption of significant debt in an effort to enter a competitive marketplace could prove perilous, especially if the Madison network struggles to attract an anchor ISP and/or build a subscriber base. Cities with struggling networks have had their credit ratings downgraded.

[Next steps](#) for the proposal include vetting by the city government’s Digital Technology Council, followed by a review by the full City Council.

Pitcairn, Pennsylvania

The GON in Pitcairn, PA ([population: 3,700](#)) recently joined the long list of municipal broadband networks in the U.S. that have failed. The municipal cable network, which was built and operated by the local electric utility, had been struggling for many years. [At its height](#) it had about 1,400 subscribers, but by 2013 fewer than 600 residents still subscribed. The primary reason why the system struggled was the emergence of

robust competition from private ISPs. The GON [could not match](#) the level of service or number of options made available by its private counterparts. By 2016, the network had become financially unsustainable. [Citing](#) “advances in technology and costs of maintenance as the culprits for ceasing operations,” local officials shut the system down on July 31. By “ridding itself of the responsibility of providing the service,” [local officials noted](#) that they will now “be able to focus their time on other tasks around the community.”

Tennessee GONs Efforts

Policymakers in Tennessee continue to evaluate ideas for bolstering broadband connectivity in the state. A renewed focus on GONs has emerged, with [some arguing](#) that state laws should be modified so that “local publicly owned electric utilities [can] expand their high-speed internet services outside of their immediate service areas.” (As noted above, the FCC’s attempt to preempt this law was overturned in federal court.) Those opposed, however, argue that allowing for such expansion would only [heighten the many risks](#) associated with municipal broadband, which tend to be borne, in one way or another, by taxpayers. Another concern is that promoting the expansion of networks owned and operated by utilities could result in [cross-subsidies](#), whereby captive electric rate-payers foot the bill for the broadband system. This is a valid concern because utilities leverage fiber networks for “smart grid” functions as well as residential Internet service, making it difficult to identify where utility functions end and Internet access begins.

In May, a bill to amend the law was [voted down in committee](#). Another round of debate and votes is expected in January 2017. Ahead of that effort, several studies about the viability of GON expansion have been announced.

One such study was released in July by the state’s Department of Economic & Community Development (ECD). This [report](#) is supportive of GON expansion (the Tennessee Advisory Commission on Intergovernmental Relations [is also studying the issue](#) and is expected to release a report at some point before the end of the year).

The following offers some takeaways regarding the ECD report:

Broadband Availability. According to the report, which draws on FCC data, 13% of residents in the state lack access to broadband connections meeting the FCC’s benchmark of 25 Mbps, which [matches data](#) for the entire United States (p. 4). Similarly, less than 4% of households report being completely unserved, which is also similar to data for the country as a whole (p. 5). Unsurprisingly, the vast majority of those without access to 25 Mbps connections or Internet access at any speed reside in rural areas that are likely to be served by ISPs as a result of federal USF subsidies (p. 4).

Broadband Adoption. The report notes that 83% of the state’s population has access to broadband connections of at least 100 Mbps (p. 12). However, most residents choose offerings in the 10-25 Mbps range. Many feel that those connections are “fast enough” (p. 21).

Estimated Cost to Bring FTTH to Unserved and Underserved Areas. In an effort to “define the scope of the problem,” the EDC report estimated that it would cost upwards of \$1.7 billion to bring FTTH to the 834,000 people in the state without access to broadband connections meeting the FCC’s speed benchmark (p. 23). Per the report, this works out to about \$2,500 to \$3,840 to bring fiber to each household (p. 22). Given the many geographic and economic challenges evident in these difficult-to-serve areas – *e.g.*, low population density; rugged terrain; pockets of extreme economic hardship – *the cost estimates included in the report are almost certainly overly optimistic*. To put this into context, the estimated per household cost to bring fiber to households in [Chattanooga](#) – an urban area with about 70,000 households and a network that cost about \$330 million to deploy – was approximately \$4,700.

Policy Recommendations. The top recommendation for addressing broadband issues in the state is to “create an open regulatory environment” (pp. 11-13). The primary aim of this recommendation is to provide a basis for allowing “any entity,” in particular municipal electric companies, to build and expand broadband networks without limitation. To justify this

recommendation, the report asserts that “In States where there are no restrictions, administrative burdens or regulatory limitations for any entity to build telecommunications infrastructure and offer services, there is more competition and more broadband investment, especially in rural parts of the state” (p. 12). This is a misleading statement because no such correlation exists. To the contrary, based on the [data](#) cited in the EDC report, many of the “most connected” states (*i.e.*, those with high percentages of the population with access to connections of at least 25 Mbps) and those with the highest average download speeds have laws on the books impacting municipal broadband. Notable examples include [Florida](#), [Nevada](#), and [Utah](#).

The report makes clear that, like in every other state in the country, well defined challenges remain to bolstering broadband connectivity in Tennessee. However, its focus on promoting GON expansion and supporting significant public investment in deploying FTTH in difficult-to-serve parts of the state overlook a range of opportunities for accomplishing widely held goals in more cost-effective and less risky ways.

3. DUELING VISIONS OF PUBLIC-PRIVATE PARTNERSHIPS (PPPs)

Many recent proposals for GONs in cities across the country have been framed by supporters as “public-private partnerships.” This represents a significant shift away from encouraging cities to own and operate a broadband network on their own. Indeed, a primary conceit of this new approach is to assuage local concerns about undertaking expensive and risky muni-led interventions into the broadband market. However, even though they are pitched as “partnerships” that can greatly reduce the financial burden on a city, the PPPs being proposed as potential GON models differ in important ways from how these partnerships have long been structured and understood. In short, the brand of PPPs being pitched by GONs advocates appear to be nothing more than an attempt to provide more palatable, though not less risky, vehicles for local government entrance into the broadband business.

The pro-GONs PPP models that are popping up more and more in feasibility studies and proposals for municipal systems – including in Madison (see above), [Connecticut](#), and [Grand Junction](#), among many other places – reflect analyses included in two [recent reports](#) on the subject. These models fit into three broad categories: (1) a municipality facilitates the entry of a new ISP by offering numerous concessions, much like what has happened in Google Fiber cities; (2) a city invests in and deploys a dark fiber network and contracts with a private ISP to “light” the last-mile; and (3) a municipality builds a GON but relies on an ISP partner to recoup, in all or in part, the cost of building the network by sharing in the revenues stemming from the services offered over the network. Each model is not without its downsides.

The first alternative PPP model – the initial Google Fiber approach – holds the most theoretical promise because it does not contemplate having a local government build or own broadband infrastructure. Instead, this model encourages cities to leverage their ability to influence private network deployment by reforming policies impacting critical network inputs like rights-of-way access, permitting, and similar administrative processes. Done right, streamlining reviews and approvals for various elements of network construction can assist all ISPs in bolstering their services. However, there have been instances where local officials have acted in a manner that provided distinct advantages to only one ISP, thereby disadvantaging other service providers and undermining sustainable local competition. This happened, for example, in some of the cities where Google Fiber first deployed its gig network (for additional discussion, see p. 121-124 of the [ACLP’s 2014 GONs study](#)). (The recent [pullback by Google Fiber](#) in [many](#) of its planned markets demonstrates that [even when certain advantages are provided](#), it is still exceedingly difficult, expensive, and risky to enter the broadband market and compete with established ISPs.)

A better approach for cities would be to reform regulations impacting broadband deployment in a manner that preserves a level playing field for *all* service providers and encourages additional

private investment in broadband infrastructure. One example of this approach is the [Next Generation Network initiative](#) in North Carolina. Policymakers there worked to [streamline network deployment](#) processes for all current and future participating ISPs. The result was new investments and deployments by AT&T and Google.

The second PPP model – the dark fiber approach – is an increasingly popular “partnership” approach that is being explored in a number of cities across the country. But as noted above in the analysis of the recent proposal in Madison, WI, this model does little to ease or shift the financial risk off of the municipality. This model is often pitched as preferable because the city pays for and retains ownership of the core dark fiber network – if the project falters, then the city has an asset that it can sell in an attempt to recoup some of its investment. Also noted above, this model has proven difficult to operationalize because of the difficulty associated with finding anchor ISPs that can successfully light up the network and attract an adequate share of subscribers. In addition, as the experience in Bristol, VA demonstrates (see above), unwinding a failed GON is an extremely difficult, time-consuming, and costly process.

The third model – the “shared risk” or “balanced” approach – is similar to the dark fiber model, but how financial risk is shared between the city and ISPs differs. Under the “shared risk” model, the city still builds and owns the network infrastructure, but partner ISPs typically agree to pay fees based on the number of homes passed by the network, as well as a percentage of revenues stemming from their subscribers. In short, both the city and the ISP have a stake in the success – or failure – of the network.

The [example typically cited](#) in support of this model is the effort in **Westminster, MD**, where the city’s agreement with ISP Ting is structured such that it is “financially obligated to the city from day one, even if it has no customers. This structure gives the city confidence that Ting will not be a passive partner, because Ting is highly incented to sell services to cover its costs” (p. 18) (for additional details of this GON effort, please

Sidebar: Federal Infrastructure Investment Imperatives

A rare point of [bipartisan consensus](#) emerged during this election season: the need for investing significant sums in repairing and modernizing the nation’s public infrastructure. Proposal details differ, but the single point of agreement is that the country’s roads, bridges, waterways, electric grid, and other critical public infrastructure require an immediate infusion of funding – [nearly \\$4 trillion in new investment is needed](#) by 2020 according to the [ASCE](#).

There is also emerging consensus about the need for harnessing more private sector expertise, investment, and leadership when addressing these problems. Public funding will only go so far, which is why groups like the [Bipartisan Policy Center](#) have highlighted a range of opportunities for forging “strategic partnerships” that use limited public funding to incentivize private sector involvement in infrastructure projects. To date, these kinds of PPPs have generated significant benefits – for consumers, in the form of more reliable and more affordable services, and for government, in the form of cost-savings.

Broadband is typically not included in these analyses because it is not a public good and is not a natural monopoly service. Moreover, ISPs throughout the U.S. have a [robust record of continuously investing](#) in their networks, a trend that is simply not evident in the public sector (hence the D+ grade assigned to the nation’s public infrastructure by the ASCE).

see the case study at the end of the Update). Although technically less risky than the dark fiber model, this approach is not without its risks. In particular, this model does little to improve the odds of the GON persevering in competitive local markets. There is [considerable evidence](#) demonstrating that many GONs struggle to attract subscribers and otherwise generate revenues sufficient to cover costs (operating expenses and debt payments being the most prominent). A system that struggles to gain market share will still strain local finances because the ISP will struggle to meet its financial obligations with the city.

Beyond attempting to assuage concerns about financial risk, an integral part of arguments offered in support of these particular PPP models is that cities should view a GON as long term investment that need not be paid off right away. Instead, advocates urge officials to look at benefits “[beyond the balance sheet](#)” (p. 8) and view an investment in a GON as something that will eventually pay for itself. This is a dangerous mindset to have when entering a competitive marketplace. The vast majority of GONs are deployed in markets where there are several existing broadband ISPs. These entities will compete fiercely to retain their customers. Indeed, there are [many examples of GONs](#) that have failed because they were unable to attract subscribers in their first few years of operation. If a city elects to stick with a failing municipal broadband system over the long term, then it will likely have to resort to alternative funding mechanisms to sustain it – e.g., levying new taxes or tax-like payments on all residents regardless of whether they subscribe to the system (an approach previously considered in

[UTOPIA](#)) or dipping into general tax revenues to prop it up (which is what officials in [Provo](#) and [Monticello](#), among others, had to do).

More traditionally structured PPPs have proven effective in the broadband space. These partnerships leverage a small amount of public funding to incentivize a private ISP to bolster network deployment in a given area. In many instances, like the [broadband grant program in New York](#), conditions are attached to the grants – e.g., minimum speeds that must be offered; build-out requirements; etc. – but then the granting agency leaves the ISP alone to build, own, and operate the network. This approach, which reflects the basic contours of the federal universal service program, has helped to bring broadband to many unserved parts of the country. For municipalities that do not want to assume any of the significant financial risk associated with building a GON, a more traditional PPP might be the better path forward.

Case Study: Westminster, MD

This widely-touted example of a “successful” shared-risk PPP is still being deployed in Westminster, MD (pop: 18,000+). The following provides an overview of the city’s efforts to date. The primary takeaway is that many questions remain unanswered about the long-term sustainability and financial viability of this endeavor.

This small rural town is [still in the process](#) of deploying its network (initial discussions [began](#) in 2013). After working with a consultant, the city [launched a pilot](#) in late 2014; the target area was a business park and a retirement community. The [projected cost](#) for this initial deployment of 60 miles of fiber was \$6.3 million, to be financed with bonds ([initial](#) cost estimates for the pilot were \$650,000). In January 2015, the city [selected](#) Ting to manage the network and deliver service to pilot customers. Ting will be the exclusive ISP for at least a decade; thereafter it could manage the network on an open access basis. The city, however, will retain ownership of the network. More specifically, [Ting “will lease](#) Westminster’s fiber-optic infrastructure at a monthly rate based on how many households the network can reach. The baseline fee is \$6 per month for each premise passed.” More importantly, [“Ting must pay](#) the fee regardless of whether the premise actually subscribes to services or not.” As [described](#) in one analysis of this model, “the partners [Westminster and Ting] depend on each other for mutual success through a series of milestones related to construction and signing up subscribers. [Per the City Council President] “We don’t make money unless [Ting] make[s] money.””

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Case Study: Westminster, MD (continued)

This model has been hailed as an innovative approach to sharing risk between public and private partners. Indeed, many advocates of GONs have tried to validate this model and position it as the new best way of structuring a municipal network. To that end, the model was [recognized by NATOA](#) as the most innovative community partnership of 2015, and it has been profiled numerous times in reports issued by the [Benton Foundation](#) and the [Institute for Local Self-Reliance](#), among other. The model has also been referenced in feasibility studies for cities contemplating a municipal network (e.g., in [Madison, WI](#) and [Connecticut](#)).

Ultimately, the Westminster model is just another version of the dark fiber model that is being pursued in cities across the country (see above for further discussion). Cities are being told – and assured – that this model is the most sensible because (1) they will own the asset, which they can sell off in case the network fails, and (2) their risk exposure is mitigated by engaging a private partner to “light” the network and offer services to end-users. In many instances, including in Westminster, partner ISPs pay fees to the city for the privilege of running or being connected to the network. This is another strategy for attempting to alleviate concerns about the financial risks associated with muni broadband ownership. (Another potential benefit of engaging a private partner in this manner is that the private entity is able to be less transparent about its ability to sign up customers. In Westminster, for example, [Ting has refused](#) to divulge how many customers it has signed up to date.) All the positive rhetoric aside, though, there is evidence from the brief history of the Westminster project that the costs of deploying the citywide GON have ballooned.

Initial estimates for completing the entire project was \$15 million ([reported](#) in October 2014, shortly after the city began deploying the pilot network). A year later, in October 2015, the city [issued \\$21 million in general obligation bonds](#) to expand the network, suggesting that this was in addition to the several millions of dollars spent on the pilot deployment. Increasing costs are likely the result of a longer-than-expected deployment. [City officials in May 2014](#) estimated that the entire network would be built by 2016 and able to break even financially shortly thereafter. By October 2015, however, city officials revised their estimates for project completion, [suggesting](#) it could “be done in three to four years, but it could easily go five to six.” By July 2016, the city was [still in the process](#) of completing the first two stages of the deployment, which when done would bring the service to only 2,700 of the town’s 7,000 premises. Completion of those stages is expected in 2017. Whether these delays impact the ability of Ting to build a sustainable subscriber base and generate revenues sufficient to cover its costs (both to rent and operate the network) remains to be seen. In short, there are many more questions than answers at this point about the viability of the Westminster model.