July 17, 2018

The Honorable Marsha Blackburn
Chairman, Subcommittee on Communications and Technology
House Energy and Commerce Committee
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Mike Doyle
Ranking Member, Subcommittee on Communications and Technology
House Energy and Commerce Committee
2322A Rayburn House Office Building
Washington, DC 20515

Re: Hearing on "Realizing the Benefits of Rural Broadband: Challenges and Solutions" – Statement on State & Local Roles in Bolstering Connectivity

Dear Chairman Blackburn and Ranking Member Doyle,

The Advanced Communications Law & Policy Institute (ACLP) at New York Law School respectfully submits the following comments regarding issues implicated by the Subcommittee's hearing on "Realizing the Benefits of Rural Broadband: Challenges and Solutions." We respectfully request that these comments be accepted into the record.

The Subcommittee is to be commended for its leadership in exploring the myriad issues impacting broadband connectivity in the United States. Under Chairman Blackburn's guidance, the Subcommittee has addressed a number of these issues, helping to bolster the availability and adoption of broadband across the country.

Should you have any questions, please do not hesitate to contact us.

Respectfully submitted,

/s/ Charles M. Davidson
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To: The Honorable Chairman Blackburn and the Honorable Ranking Member Doyle, Communications & Technology Subcommittee, U.S. House of Representatives

From: Charles M. Davidson & Michael J. Santorelli, ACLP at New York Law School

Re: Hearing on "Realizing the Benefits of Rural Broadband: Challenges and Solutions" – Statement on State & Local Roles in Bolstering Connectivity

Date: July 17, 2018

The House Communications & Technology Subcommittee is to be commended for its leadership in exploring the array of issues impacting the deployment and use of broadband technology in the United States. Today's hearing on "Realizing the Benefits of Rural Broadband: Challenges and Solutions" shines a light on a critical set of issues in the ongoing campaign to bring high-speed internet access to every corner of the country. **Section 1** below highlights the substantial progress made to date: as the FCC recently reported, 98.1% of the country has access to either fixed broadband service at 25 Mbps/3 Mbps or mobile service at 10 Mbps/3 Mbps.[1] However, in rural areas, that figure drops to 89.7%.[2]

There are myriad reasons why this urban-rural broadband gap exists. As Chairman Blackburn has rightly noted, numerous regulatory and policy barriers impede the ability of service providers to efficiently deploy broadband services to rural parts of the country, driving up the already high costs associated with building out infrastructure to less densely populated areas.[3] Indeed, the economics of rural broadband deployment are challenging,[4] necessitating an "all of the above" strategy that leverages targeted federal subsidies, well-designed state grant programs, and local leadership to streamline the build-out process.[5]

Municipal broadband is often among the menu of options discussed by policymakers for bolstering broadband connectivity. As discussed in **Section 2**, government-owned

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[1] *See Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2018 Broadband Deployment Report, at Table 3d, GN Docket No. 17-199 (Feb. 2, 2018), https://docs.fcc.gov/public/attachments/FCC-18-10A1.pdf ("*2018 Broadband Deployment Report*").

[2] *Id.*

[3] *See, e.g.,* Michael Collins, *Congress Prepares to Knock Down Barriers to Broadband Expansion in Rural America*, Jan. 11, 2018, USA Today, https://www.usatoday.com/story/news/politics/2018/01/11/congress-prepares-knock-down-barriers-broadband-expansion-rural-america/1020426001/.

[4] For a recent analysis, *see* Steve G. Parsons and James Stegeman, *Rural Broadband Economics: A Review of Rural Subsidies*, CostQuest Associates (July 2018), https://www.ustelecom.org/sites/default/files/documents/Rural%20Broadband%20Economics%20-%20A%20Review%20of%20Rural%20Subsidies.pdf.

[5] *See, e.g.,* Charles M. Davidson & Michael J. Santorelli, *Understanding the Debate over Government-Owned Broadband Networks: Context, Lessons Learned, and a Way Forward for Policy Makers*, at p. 109-138, ACLP at New York Law School (June 2014), http://www.nyls.edu/advanced-communications-law-and-policy-institute/wp-content/uploads/sites/169/2013/08/ACLP-Government-Owned-Broadband-Networks-FINAL-June-2014.pdf ("*Understanding the Debate*").

broadband networks (GONs) are incredibly expensive and risky endeavors that have yet to demonstrate a track-record of financial viability or competitive sustainability. Moreover, from the perspective of improving broadband availability, a GON is rarely a panacea. A number of previously touted networks have failed spectacularly, leaving taxpayers in states across the country with enormous debts to pay down. Other systems have struggled mightily to compete with nimbler private providers, forcing cities to prop up their networks by dipping into general tax revenues. In some instances, local efforts to deploy a GON can tilt the playing field in favor of the new, publicly financed system. Consumers are often left worse off, as the energy and resources expended in the pursuit of a GON could likely have been put to more productive uses both within the broadband context and elsewhere in the local economy.[6]

In recognition of these dynamics, and in an effort to protect taxpayers, some 20 states have implemented legislative frameworks to guide the decision-making of their municipal subdivisions vis-à-vis GONs. Chairman Blackburn has been a staunch defender of the rights of states to act in this manner.[7] As discussed in **Section 3**, it is critical that states continue to play an active role in overseeing responsible broadband policy within their borders. But such action by states in the broadband context need not be limited to GONs. As discussed in **Section 4**, there are numerous roles for states to play in improving broadband connectivity. Similarly, in lieu of a GON, there are many impactful ways in which local officials can influence the build-out of next-generation broadband networks.

As an overview, the discussion below is structured as follows:

1. Brief overview of U.S. broadband deployment dynamics (p. 3);

2. GON models, examples, and risks (p. 5);

3. States' interests in overseeing the responsible deployment of broadband within their borders (p. 14); and

4. Effective broadband planning and policymaking at the state and local levels (p. 16).

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[6] Such opportunity costs are especially relevant in the context of other infrastructure projects – repairing roads, building schools, etc. – that might benefit from funds used for a GON. *See Understanding the Debate.*

[7] *See, e.g.,* Press Release, *Blackburn, Tillis Introduce Bill to Stop FCC From Trampling on States' Rights,* Feb. 26, 2015, Office of Rep. Marsha Blackburn, https://blackburn.house.gov/news/documentsingle.aspx?DocumentID=397689.

1. CONTEXT: U.S. BROADBAND DEPLOYMENT DYNAMICS

The broadband success story in the United States is due in large part to the careful development and effective implementation of a *bipartisan, minimalist, national regulatory framework,* an approach that has encouraged the investment of significant sums of risk capital in network infrastructure by private firms. At the core of this framework is Congress's simple mandate to keep the Internet "unfettered by Federal or State regulation."[8] For much of the past two decades, adherence to this ethos has facilitated an enormous among of investment – **in excess of $1.6 trillion** – in broadband network infrastructure.[9] These investments and the competition that has attended the development of the U.S. broadband market has yielded impressive results:

- Over 92% of the U.S. population has access to a fixed broadband connection of at least 25/3 Mbps, up from 81% in 2012.[10]

- Mobile broadband deployment continues to be robust, with 99% of the U.S. population, including 98% of those living in rural areas, able to access a mobile connection of at least 5/1 Mbps.[11] Those numbers drop to 87.3% and 70%, respectively, for mobile connections of at least 10/3 Mbps.[12]

- An urban-rural broadband gap remains, with only 69% of the rural populating having access to a fixed 25/3 Mbps connection.[13] But significant progress has been made in closing this gap: the number of available 25/3 Mbps connections in rural areas has grown by nearly 58% since 2012.[14]

- The market for broadband services is characterized by intense intermodal competition among a range of providers: cable, fiber, telco, fixed wireless, and satellite. The latter two categories of providers are particularly important in the context of rural areas. For example, satellite connections of at least 25/3 Mbps are available to 81% of rural residents.[15] Improvements in these offerings promise to help make available reliable and affordable broadband connections to millions of additional Americans in the near future.[16]

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[8] 47 U.S.C. § 230(b)(2).

[9] *See* USTelecom, Broadband Investment, https://www.ustelecom.org/broadband-industry/broadband-industry-stats/investment.

[10] *2018 Broadband Deployment Report* at Table 1.

[11] *Id.* at Table 2a.

[12] *Id.* at Table 2b.

[13] *Id.* at Table 1.

[14] *Id.*

[15] *Id.* at ¶ 51.

[16] *See, e.g., The BWA Industry Report: 2017,* WISPA (Sept. 2017), http://www.wispa.org/Portals/37/Docs/Press%20Releases/2017/TCG's_2017_BWA_FINAL_REPORT.pdf

Implicit in the above is that government action at any level can either help or harm the market for broadband services. The most impactful actions by government tend to be those that narrowly target specific issues left unaddressed by the market. For example, efforts to improve rural broadband availability by using subsidies to make unserved areas more "economic" to serve by private providers offer a good example of where carefully tailored government action can be impactful. These efforts have been greatly improved thanks to the unstinting efforts of Chairman Blackburn to highlight and help correct the kinds of waste, fraud, and abuse that long plagued federal subsidy programs.[17]

Unnecessary government interventions can harm the market. At the federal level, for example, the former FCC's reclassification of broadband as a "common carrier" service and the concomitant imposition of stifling net neutrality rules on ISPs dampened broadband investment by introducing significant regulatory uncertainty into a market that long thrived in its absence.[18] Chairman Blackburn's advocacy in support of a return to the historically bipartisan, minimalist, and successful regulatory framework that prevailed for decades helped build momentum around a rollback of these rules in 2017.[19]

As a general matter, the rote application of legacy rules and processes to new broadband network technologies can slow network deployment.[20] Federal and state-level efforts to remove outdated rules and otherwise streamline these processes are helping to hasten the construction of these critical next-generation systems.[21]

As discussed in the next section, the deployment of a GON by a municipality – on its own, via a government agency (*e.g.,* a municipal utility), or in "partnership" with a private entity – can have similarly harmful impacts on the competitive provision of broadband services. It

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(providing an overview of advancements in fixed wireless technology and observations regarding its importance in bringing broadband to rural areas).

[17] *See, e.g.,* Mike O'Rielly and Rep. Marsha Blackburn, *FCC's Lifeline Program Ripe for Fraud, Abuse,* July 12, 2015, Politico, https://www.politico.com/magazine/story/2015/07/fccs-lifeline-program-expansion-without-reform-120008.

[18] *See, e.g., In the Matter of Restoring Internet Freedom,* Declaratory Ruling, Report and Order, and Order, WC Docket No. 17-108, 33 FCC Rcd. 311, at ¶¶ 89-102, FCC (rel. Jan. 4, 2018), https://docs.fcc.gov/public/attachments/FCC-17-166A1.pdf.

[19] *See, e.g.,* Amir Nasr, *Blackburn Outlines Path to Net Neutrality Reversal, Comms Act Rewrite,* Dec. 7, 2017, Morning Consult, https://morningconsult.com/2016/12/07/blackburn-outlines-path-net-neutrality-reversal-comms-act-rewrite/.

[20] *See, e.g., Report of the Removing State and Local Barriers to Broadband Deployment Working Group*, FCC Broadband Deployment Advisory Committee (Jan. 10, 2018), https://www.fcc.gov/sites/default/files/bdac-regulatorybarriers-report-012018.pdf.

[21] *See, e.g.,* Hon. Greg Walden & Hon. Marsha Blackburn, *Building America's 21st Century Broadband Infrastructure: It's Time We All Got Connected.*, Jan. 16, 2018, Medium, https://medium.com/@HouseCommerce/building-americas-21st-century-broadband-infrastructure-it-s-time-we-all-got-connected-59a8934377ff ("The reality is, it's expensive, complicated, and time-consuming for broadband companies to reach the communities that need it. Our job in Congress is to expand access to high-speed broadband by making it easier, not harder, to get broadband connectivity to all Americans.").

is essential that policymakers at every level be mindful of these dangers as they develop strategies for responsible and sustainable broadband deployment.

2. EXAMINING THE RISKS INHERENT IN GOVERNMENT-OWNED BROADBAND NETWORKS

The history of GONs in the United States is characterized by dozens of notable failures and the continued existence of numerous struggling systems.[22] Notwithstanding this poor track record, those who push for widespread pursuit of GONs have been largely undeterred in their efforts to frame municipal broadband as a salve for any number of local issues. Indeed, advocacy in support of government intervention into local broadband markets is notable for its ability to constantly "rebrand" in the face of failed municipal systems.[23]

Many notable GON systems have struggled or failed after being cited as "models" that might be adapted in other cities. Some have achieved a measure of success but have done so under unique circumstances that cannot readily be replicated. Taken together, these examples make clear that, in the vast majority of instances, GONs are inherently risky endeavors that imperil resources, put taxpayers at risk, and do little to bolster the sustainable provision of competitive broadband services.

2.1 GONs Framed as "Model" Systems Rarely Thrive, and Those That Succeed are Unique Outliers

The following includes capsule summaries of GONs that have been cited at one point as a "model" that local officials might seek to adapt for use when developing their own municipal broadband strategy.[24] For the reasons cited below, none of these systems should be viewed as viable or replicable "models."

2.1.1 Chattanooga (TN) [status: unique outlier; not replicable]

The GON in Chattanooga, which is operated by the city's muni electric utility (EPB), is often promoted as a successful muni broadband project. While the system has been able to attract a significant number of customers, it is best viewed as a unique outlier rather than an easily replicable model.

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[22] For an extended discussion, *see Understanding the Debate* at p. 10-18.

[23] An example of this dynamic can be seen in recent efforts to position GONs as a vehicle for cities to provide more stringent net neutrality and privacy protections for consumers. *See, e.g., The Public Internet Option*, ACLU (March 2018), https://www.aclu.org/sites/default/files/field_document/aclu_municipal_broadband_report.pdf. As noted above, the restrictive set of net neutrality rules that some cities seek to voluntarily adopt via a GON negatively impacted broadband investment, a fact that could eventually undermine the financial stability of a muni system. Similarly, choosing to abide by rules that restrict business model experimentation could artificially limit consumer choices and thereby make a muni offering less attractive to potential subscribers.

[24] For the sake of brevity, the examples in section 2 have been condensed from existing ACLP research. Additional information and analysis regarding each of the GONs discussed herein is available upon request.

- *Market Share.* As of early 2018, the GON's penetration rate was about 50%.[25] But of its 90,000+ customers, only about 1/10th subscribe to its signature gig offering.[26]

- *Financing.* The GON benefited from a one-time, non-replicable stimulus grant of $111M.[27] The funds, ostensibly earmarked for smart grid purposes, allowed the city to significantly expedite construction of the underlying fiber network, putting it on a quicker path to viability.[28]

- *Lingering Questions.* Although explicit cross-subsidies between EPB's Electric and Fiber divisions are illegal under Tennessee state law, the two divisions have a uniquely close relationship. Indeed, questions have been raised about whether and to what extent EPB might be attributing certain fiber-related costs to the smart grid rather than the broadband system, which would allow it to seek cost-recovery from among its captive rate-payers.[29]

- *Questionable Economic Impacts.* Many attribute the city's economic resurgence to the GON. Indeed, the GON's signature gig offering is central to the city's new identity as a tech hub. But little hard data exists in support of these claims. Indeed, the total number of jobs in the tech sector decreased after the GON launched. With regard to the city's high-tech sector generally, while start-ups are somewhat prevalent, overall job growth in the sectors where broadband is a critical input has been stagnant since the launch of the municipal network. The following table highlights these trends.

	Chattanooga	**Knoxville**	**Memphis**	**Nashville**	**Tennessee**
Unemployment Rate (Dec. 2017)	3.4%	2.9%	3.7%	2.4%	3.2%
Info Sector Job Growth (Jan. 2010-Dec. 2017)	-16%	-3.6%	-11%	17.1%	1.8%
New Business Growth (Q4 2014 – Q3 2017) (by county)	59.1%	67.2%	91%	75%	30%

Sources: Bureau of Labor Statistics; Tennessee Secretary of State

[25] *See 2017 Annual Report*, at p. 30, EPB, https://static.epb.com/annual-reports/2017//media/EPB_2017_Annual_Report.pdf.

[26] *Id.* at p. 6.

[27] *See* Charles M. Davison & Michael J. Santorelli, *Updated Case Study of Government-Owned Broadband Network in Chattanooga, TN,* ACLP at New York Law School (Oct. 2015), http://www.nyls.edu/advanced-communications-law-and-policy-institute/wp-content/uploads/sites/169/2013/08/ACLP-Chattanooga-Case-Study-updated-October-2015.pdf.

[28] *Id.*

[29] *Id.*

- *Replicability*. Several other cities in Tennessee are pursuing GONs using the Chattanooga muni utility GON framework as a model. For example, a similar system has been proposed in Johnson City,[30] and a muni utility-led fiber deployment is getting underway in Newport.[31] Neither project has benefitted from grant dollars, but both are seeking to leverage their fiber networks for smart grid purposes, raising the possibility of implicit cross-subsidies (it should be noted that, in Johnson City, the GON is seen as a means of helping the utility offset sagging electric sales).[32] Each system faces challenges: previous GON attempts in Johnson City have not panned out,[33] and the system in Newport has already suffered some delays.[34]

2.1.2 Bristol (TN) [status: failed]

This failed GON is notable because it was held out by both the Obama White House and FCC as a model system that other cities might emulate.[35] The muni network ultimately failed due to profound financial struggles and corruption at the parent utility.[36]

- *Overview.* This FTTH system, which evolved from a fiber network initially deployed by the local utility, was eventually deployed across Bristol and into surrounding

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[30] *See* Nathan Baker, *BrightRidge Aiming for High Speeds in Low-Density Areas,* March 22, 2018, Johnson City Press, https://www.johnsoncitypress.com/Business/2018/03/22/BrighRidge-aiming-for-high-speeds-in-low-density-places.

[31] *See* Cliff Hightower, *Newport Utilities to Invest $24.7 million in Fiber Project,* Sept. 5, 2017, Citizen Tribune, https://www.citizentribune.com/news/local/newport-utilities-to-invest-million-in-fiber-project/article_fc6ad720-9252-11e7-9787-1bbc013f664c.html.

[32] *See BrightRidge Board Votes to Seek Regulatory Approval for High Speed Broadband Project,* Jan. 24, 2018, The Business Journal, http://bjournal.com/brightridge-board-votes-to-seek-regulatory-approval-for-high-speed-broadband-project/.

[33] In 2011, for example, the city engaged a consultant to conduct a formal GON feasibility study of a citywide FTTH network. The consultant endorsed a partnership model (*i.e.,* the city would build the network but rely on a third-party to operate it and offer service) but "the cost analysis [did not] yield the numbers the system targeted." *See* Nathan Baker, *Power Board Exploring Wireless Internet Technology,* May 3, 2015, Johnson City Press, http://www.johnsoncitypress.com/Local/2015/05/03/Power-Board-exploring-wireless-Internet-technology.html?ci=content&lp=4&p=1.

[34] *See* Seth Butler, *NU Connect Rollout Continues,* March 30, 2018, The Newport Plain Talk, http://www.newportplaintalk.com/news/article_041b44fd-c357-5ace-82ca-3afbdcb50855.html.

[35] See *Connecting America: The National Broadband Plan*, at p. 153, FCC (2010), http://download.broadband.gov/plan/nationalbroadband-plan.pd; See *Community-Based Broadband Solutions: The Benefits of Competition and Choice for Community Development High-Speed Internet Access*, at p. 30, Executive Office of the President (Jan. 2015), https://obamawhitehouse.archives.gov/sites/default/files/docs/community-based_broadband_report_by_executive_office_of_the_president.pdf.

[36] *See* Charles M. Davidson & Michael J. Santorelli, *Updated Case Study of Government-Owned Broadband Network in Bristol, VA,* ACLP at New York Law School (Dec. 2016), http://www.nyls.edu/advanced-communications-law-and-policy-institute/wp-content/uploads/sites/169/2013/08/ACLP-Bristol-Case-Study-Update-December-2016.pdf.

areas at a total cost of over $130 million, a substantial portion of which came via state and federal grants.[37]

- *Outcome*. After several years of seeming financial viability, the network began to struggle financially. Compounded by corruption at the parent utility, the network eventually failed and was sold off at an $80+ million loss to a private company.[38] Unwinding the GON and parsing through its many debts and debtors proved to be a significant challenge, delaying the sale by many months.

2.1.3 Burlington (VT) [status: failed]

The muni fiber system deployed in Burlington was cited as a successful model GON soon after its launch in 2005.[39] But the GON struggled to gain its financial footing and was eventually sold to a private entity.

- *Overview.* Despite seemingly positive attributes (*e.g.*, a healthy number of subscribers), the system was unable to cover its debts.[40] City officials were left to prop up the system; at one point, the mayor illegally dipped into general revenues for this purpose.[41] The system was such a burden on the city that its credit rating was downgraded.[42]

- *Outcome.* After settling a contentious lawsuit with a major creditor, the city began exploring a sale of the GON in 2016.[43] After more than a year, the city voted to sell the system to a private entity in November 2017.[44] At its nadir, the GON in

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[37] *Id.*

[38] *Id.*

[39] *See, e.g.,* Christopher Mitchell, *Burlington Telecom Profits from Fiber*, Broadband Properties (Oct. 2007), http://www.broadbandproperties.com/2007issues/october07/Burlington.pdf; Christopher Mitchell, *Burlington Telecom Case Study*, Institute for Local Self-Reliance (Aug. 2007), http://www.ilsr.org/wp-content/uploads/files/bt.pdf.

[40] *Understanding the Debate* at p. 18.

[41] *Id.*

[42] *Id.*

[43] *See* Press Release, *Weinberger Announces Completion of Settlement Agreement in Burlington Telecom Lawsuit,* Jan. 3, 2015, Vermont Biz, https://vermontbiz.com/news/january/weinberger-announces-completion-settlement-agreement-burlington-telecom-lawsuit.

[44] *See* Jess Aloe, *Burlington City Council Chooses Last Minute Bid from Schurz Communications to Buy BT,* Nov. 27, 2017, Burlington Free Press, https://www.burlingtonfreepress.com/story/news/2017/11/27/could-end-tonight-city-councilors-plan-vote-final-bt-buyer/858853001/ ("*Burlington City Council Chooses*).

Burlington was over $50 million in debt;[45] the sale price of the system was a little more than $30 million, representing a steep loss to the city.[46]

2.1.4 UTOPIA (UT) [status: failed]

In the early 2000s, 16 cities in Utah joined together to build a multi-city open access fiber GON. From the start, it was a financial disaster, spurred forward by unrealistic hopes and overly optimistic revenue projections. Despite these troubles, the system was cited as a successful example of a viable open-access approach to municipal broadband.[47]

- *Overview.* Throughout its long and tortured history, this ambitious project consistently under-performed. By 2016, the GON had a negative net value of $100+ million and owed about $500 million in interest payments through 2040.[48] It has yet to turn a profit.

- *Outcome.* Efforts by private entities to intervene and save the network failed because the costs were too great and demand remained tepid.[49] Recently, the remaining member cities have begun experimenting with new deployment models as they attempt to keep the system afloat. Even so, the GON has failed to realize its original vision for becoming a leading model of a financially self-sustaining open access fiber system capable of connecting multiple, mostly rural cities.

2.1.5 Westminster (MD) [status: unproven]

The municipal network being deployed in Westminster is an example of a "partnership" model that is increasingly being touted by GON consultants as less risky for cities.[50] A closer look at the details of this partnership, though, reveals that many risks remain for cities and their taxpayers.

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[45] See Christopher Mitchell, *Learning from Burlington Telecom*, at p. 4, Institute for Local Self-Reliance (Aug. 2011), available at http://www.muninetworks.org/sites/www.muninetworks.org/files/bt-lessons-learned.pdf.

[46] *Burlington City Council Chooses.*

[47] *See, e.g.,* Kane Loader, *UTOPIA Will Continue to Help Utah Lead in Broadband*, March 19, 2011, Salt Lake Tribune, http://archive.sltrib.com/article.php?id=51349618&itype=CMSID.

[48] *Understanding the Debate* at p. 75-79.

[49] *Id.*

[50] *See, e.g.,* Joanne Hovis et al., *The Emerging World of Broadband Public-Private Partnerships: A Business Strategy and Legal Guide,* at p. 23-25, Benton Foundation (May 2017), https://www.benton.org/sites/default/files/partnerships.pdf; Patrick Lucey and Christopher Mitchell, *Successful Strategies for Broadband Public-Private Partnerships*, at p. 11-18, Institute for Local Self-Reliance (July 2016), https://ilsr.org/wp-content/uploads/downloads/2016/08/PPP-Report-2016-1.pdf ("*Successful Strategies*").

- *Overview.* Westminster has invested in excess of $20 million to deploy its GON. It has partnered with a private ISP, Ting, to operate the network and offer service to customers. Ting remits two payments to the city each month: a lease payment ($6/month per home that the network passes; this fee is mandatory regardless of whether the home subscribes) and a customer fee ($11/month per subscriber).[51] In theory, these payments will help the city pay down its GON debts.

- *Outcomes.* To date, deployment has been delayed several times and take-rates have been low.[52] The system operated at a loss in 2016[53] and missed its revenue target in 2017.[54] Given the low take-rate and the fact the Ting must compete with established ISPs like Comcast and Verizon, it is unlikely that the GON in Westminster will be self-sufficient for many years. Its struggles thus suggest that this "model" has yet to be validated.

2.2 Additional Examples of Failed & Struggling GONs

The following includes capsule summaries of GONs that have failed or that have struggled mightily since their launch. These are best seen as cautionary tales for local officials contemplating a GON and for state officials weighing whether and to what extent legislative safeguards might be appropriate to protect their subdivisions and taxpayers from the many risks associated with a municipal broadband foray.

2.2.1 Dunnellon (FL) [status: failed]

- *Overview.* In 2011, Dunnellon made a "big bet on the Internet worthy of a riverboat gambler."[55] It took out loans totaling $7.35 million to build its own broadband network in an effort to jumpstart economic development, provide services to some unserved residents, and otherwise attempt to make the city more attractive to businesses and residents.[56] By 2012, the city had deployed over "100 miles of fiber" and began offering Internet access, telephone, and video service to residents.[57] A

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[51] *Successful Strategies* at p. 15.

[52] *See, e.g.,* Press Release, *Westminster Fiber Network Advancing,* May 8, 2017, City of Westminster, http://www.westminstermd.gov/DocumentCenter/View/2002/Fiber-Network-Advancing-05-09-17pdf (noting take-rates).

[53] *See Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016,* at p. 38, City of Westminster, https://www.westminstermd.gov/DocumentCenter/View/1551/FY2016-Comprehensive-Annual-Financial-Report-CAFR#page=44.

[54] *See Fiscal Year 2018 Budget,* at p. 57, City of Westminster, https://www.westminstermd.gov/DocumentCenter/View/2214/City-of-Westminster-FY2018-Budget#page=57.

[55] *See* Bill Thompson, *Dunnellon Dreams of a Connected Future*, Oct. 15, 2011, Ocala Star Banner, http://www.ocala.com/article/20111015/ARTICLES/111019789?p=all&tc=pgall.

[56] *Id.*

[57] *See* Lisa Gonzalez, *Dunnellon, Florida's Fiber Dreams Now a Reality,* Aug. 8, 2012, MuniNetworks.org, http://www.muninetworks.org/content/dunnellon-floridas-fiber-dreams-now-reality.

year later, though, the system had proven to be a failure: it "only attracted 500 customers," nowhere near what was needed for profitability.[58]

- *Outcome.* By 2013, the system had become financially unsustainable due to low take-rates. In October of that year, "the City Council voted to sell [the system] for $1 million" to a private company, leaving the city to pay back "$7 million in debt, a monumental task for a city of 1,700 people with an annual municipal operating budget this year of $3.1 million."[59]

2.2.2 Groton (CT) [status: failed]

- *Overview.* The local utility launched a cable network in an effort to offset sagging electric sales.[60] It justified the network in part by relying on a demand survey that found local residents appeared willing to take service from the GON.[61]

- *Outcome.* The network struggled from the start. It lost $2 million a year; eventually the city's credit rating was downgraded.[62] Groton eventually sold the failing network for $550,000, leaving taxpayers to pay off $28 million in debt.[63]

2.2.3 Monticello (MN) [status: struggling]

- *Overview.* After over-estimating subscriber demand and, once deployed, struggling to gain market share, the local government dipped into several tax funds to prop up its failing FTTH system.[64]

- *Outcome.* Eventually, the system defaulted on its debt obligations; the city settled with creditors for less than $0.50 on the dollar.[65] By the end of 2015, after posting an operating loss in excess of $300,000, it became apparent that the city needed to explore options for the GON.[66] Eventually, the city outsourced management of the

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[58] *See Editorial: Dunnellon's Disastrous Deal*, Oct. 29, 2013, Ocala Star Banner, http://www.ocala.com/article/20131031029665.

[59] *Id.*

[60] *Understanding the Debate* at p. 80-83.

[61] *Id.*

[62] *Id.*

[63] *Id.*

[64] *Id.* at p. 64-67.

[65] *Id.*

[66] *See* Tim Hennagir, *Monticello's Broadband Utility Shows More Than $322,000 Operating Loss in 2015,* Feb. 19, 2016, Monticello Times, https://www.hometownsource.com/monticello_times/news/local/broadband-alliance-discussion-sets-stage-for-monticello-city-council-fireworks/article_c664deea-65a9-5c35-aac8-e804290d2bf8.html.

struggling GON to a private provider; since then, the system's financial have improved somewhat.[67]

2.2.4 Pitcairn (PA) [status: failed]

- *Overview.* A muni cable system was deployed and run by Pitcairn's municipal electric utility. At its height it had about 1,400 subscribers, but by 2013 fewer than 600 residents still subscribed.[68] The primary reason why the system struggled was the emergence of robust competition from private ISPs: the GON simply could not match the level of service or number of options made available by its private counterparts.[69]

- *Outcome.* 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, 2016.[70] 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."[71]

2.2.5 Provo (UT) [status: failed]

- *Overview.* This open access FTTH system was deployed by Provo at a cost of over $60 million, most of which was financed with debt.[72] However, tepid demand resulted in slow revenue growth, which negatively impacted the ability of the system to cover its debts.[73]

- *Outcome.* On several occasions, the city used millions of dollars of taxpayer money to prop up the struggling system.[74] The city eventually sold off the system to Google for $1, leaving it and its residents to pay off about $40 million in debt.[75]

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[67] *See FiberNet on Pace to Hit Net Income Target, Stay Under Budget,* Nov. 10. 2017, Monticello Times, https://www.hometownsource.com/monticello_times/news/local/fibernet-on-pace-to-hit-net-income-target-stay-under/article_08967350-c58a-11e7-bd44-8778cfe116c7.html.

[68] *See* Jacqueline Dell and Kyle Lawson, *Pitcairn Officials Talk with Comcast to Take Over Cable Service,* Oct. 3, 2013, Trib Live, https://triblive.com/neighborhoods/yourmonroeville/yourmonroevillemore/4297925-74/cable-pitcairn-service.

[69] *See* Samson X. Horne, *Pitcairn's Cable, Internet Services' Last Day is July 31,* July 19, 2016, Trib Live, https://triblive.com/news/neighborhoods/monroeville/10781733-74/borough-cable-internet.

[70] *Id.*

[71] *Id.*

[72] *Understanding the Debate* at p. 83-87.

[73] *Id.*

[74] *Id.*

[75] *Id.*

2.2.6 Quincy (FL) [status: failed]

- *Overview.* In 2003, Quincy issued $3.3 million in bonds to build a fiber-optic network known as NetQuincy.[76] The goal was for the city to use the network to "tak[e] charge of its [own] future."[77]

- *Outcome.* By 2005, the system had failed to generate revenues to become financially viable. The system soon went out of business, leaving the city and its taxpayers with millions in outstanding debt obligations.[78]

2.2.7 Salisbury (NC) [status: struggling]

- *Overview*. Salisbury deployed an ambitious FTTH gig system in 2010 in an effort to jumpstart economic development.[79] It admitted from the start that it would be difficult to compete with other ISPs in the local market, but it moved ahead confident that it could secure 30% of the market within three years.[80] After 8 years, the GON had failed to achieve its desired market share. As a result, it has struggled mightily, forcing the city to prop up the system to the tune of over $20 million in subsidies drawn from general funds.[81] The city's credit rating has been downgraded.[82]

- *Outcome.* The city was recently granted permission to lease the underlying fiber network to a private company in an effort to offload some financial risk and help pay down its substantial debt.[83] However, numerous financial risks remain for the city and its taxpayers.[84]

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[76] *See City of Quincy, Florida*, *Utility System Improvement and Refunding Revenue Bonds, Series 2003*, at p. 45, Electronic Municipal Market Access, Municipal Securities Rulemaking Board (Oct 1. 2003), http://emma.msrb.org/MS216479-MS191787-MD372435.pdf.

[77] *See The Case for Municipal Broadband in Florida*, at p. 2, Florida Municipal Electric Association (2005), http://www.baller.com/wp-content/uploads/fmea_white_paper.pdf.

[78] *See, e.g.,* Richard Swier, *Failing Government-Owned Networks Examined*, Dec. 3, 2013, Watchdog Wire, http://watchdogwire.com/florida/2012/12/03/florida-failing-government-owned-networks-examined/.

[79] *See Hard Lessons from Salisbury's Failing Foray into Muni Broadband,* Feb. 2, 2017, Broadband Expanded, http://www.broadbandexpanded.com/2017/02/02/hard-lessons-from-salisburys-failing-foray-into-muni-broadband/ ("*Hard Lessons from Salisbury's Failing Foray*").

[80] *See, e.g.,* Christopher Mitchell, *More Details Emerging About Fibrant in Salisbury,* Sept. 24, 2010, Community Networks, https://muninetworks.org/content/more-details-emerging-about-fibrant-salisbury.

[81] *Hard Lessons from Salisbury's Failing Foray.*

[82] *Id.*

[83] *See* City of Salisbury, Fibrant Vote, http://salisburync.gov/Government/Administration/Fibrant-Vote.

[84] *See, e.g.,* Dan Way, *State Lets Salisbury Refinance Debt For Muni Broadband System* July 12, 2018, Carolina Journal, https://www.carolinajournal.com/news-article/state-lets-salisbury-refinance-debt-for-muni-broadband-system/.

3. STATES HAVE A COMPELLING INTEREST IN THE RESPONSIBLE DEPLOYMENT OF BROADBAND WITHIN THEIR BORDERS

GONs are exceedingly expensive and risky undertakings, costing anywhere from a few million dollars, as in the case of Groton (CT), to several hundreds of millions of dollars, as in Chattanooga (TN), to nearly half a billion dollars in UTOPIA (UT). In some cases where a network has faltered (*e.g.*, Monticello (MN), Salisbury (NC)), local government has stepped in with funding support to help steady the municipal system. Other failed and failing systems (*e.g.*, Burlington) have negatively impacted local credit ratings, which increase borrowing costs and strain local finances even more. As networks become more complex and ambitious, the costs associated with building and maintaining them rise inexorably. This, in turn, raises the risk of costly defaults by local government. Accordingly, states, which maintain ultimate responsibility for the financial health of cities and towns in their borders, have compelling interests in overseeing broadband policy in the state, including the parameters and processes by which GONs proposals are vetted and approved.[85]

3.1 States' Legal Authority to Adopt GON-Related Protections

Well-established legal precedent supports such a close relationship between municipalities and their states. In 1907, the U.S. Supreme Court succinctly summarized this relationship when it ruled that municipalities are "political subdivisions of the state, created as convenient agencies for exercising such of the governmental powers of the state as may be intrusted [sic] to them…The number, nature, and duration of the powers conferred upon these corporations and the territory over which they shall be exercised rests in the absolute discretion of the state."[86] Over the last century, the contours of these relationships have been sharpened in some instances by the adoption of "home rule" statutes and other rules that, among other things, provide municipalities with a degree of autonomy to act on certain matters.[87] But even in "home rule" states, municipal action is continuously subjected to judicial scrutiny.[88]

In the GONs context, state legislatures have broad authority to adopt legislation pertaining to the extent to which a municipality can or cannot offer communications services.[89] The

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[85] *See, e.g.,* Grant Gross, *States Threaten Lawsuit Against Obama's Municipal Broadband Plan*, Jan. 26, 2015, Network World, https://www.networkworld.com/article/2875674/states-threaten-lawsuit-against-obamas-municipal-broadband-plan.html.

[86] *Hunter v. City of Pittsburgh*, 207 U.S. 161, 178 (1907).

[87] For an historical overview of how these statutes evolved in the first half of the 20th century, *see* Kenneth E. Vanlandingham, *Municipal Home Rule in the United States,* 10 Wm. & Mary L. Rev. 269 (1968). For a more recent discussion, *see* National League of Cities, Cities 101 – Delegations of Power, https://www.nlc.org/resource/cities-101-delegation-of-power.

[88] *See, e.g., City Rights in an Era of Preemption: A State-by-State Analysis,* at p. 5, National League of Cities (2018), https://www.nlc.org/sites/default/files/2017-03/NLC-SML%20Preemption%20Report%202017-pages.pdf.

[89] 47 U.S.C. § 253.

U.S. Supreme Court confirmed this power in 2004 when it upheld a Missouri law that prohibited municipalities from offering telecommunications services.[90] In 2016, a federal appeals court rebuked an extraordinary attempt by the Obama FCC to preempt laws in North Carolina and Tennessee that governed the ability of their political subdivisions to expand existing GON systems.[91]

To date, some 20 states have adopted laws impacting the ability of municipalities to deploy a GON. Only a few states (*e.g.*, Nebraska) have imposed outright bans. In most other instances, state legislatures have created a road map for municipalities to follow when evaluating a GONs proposal.[92] Many of these involve public participation of some sort – public hearings, referenda, or other activities meant to fully apprise citizens of their local government's intention to invest public resources in a GON. Numerous others require substantial economic and financial analyses to ensure that a particular municipal project does not become a burden on local residents or the state, or both. Some states, including Tennessee, require the approval of certain GON plans by a state agency.[93]

3.2 Ideas for Additional State & Local Level GON Protections

Despite their uneven record, their inherent complexity, and the significant financial risks that attend municipal broadband projects, GONs continue to be pursued in communities of every size.[94] Indeed, over the last few years, GON-related activities – *e.g.,* feasibility studies, resident surveys, citizen referenda, city council votes – have been evident in localities as diverse as San Francisco (CA),[95] Grand Junction (CO),[96] and Laketown (MI).[97] In studying these and other efforts in municipalities across the country, the ACLP developed a Check List (see attached) to help structure and inform decision-making processes by state and local policymakers vis-à-vis GONs. The issues covered in the Check List echo core concerns articulated in many of the state GONs laws noted above.

Given increased interest in GONs at the municipal level, state policymakers might consider updating their laws to reflect new complexities, models, risks, and other considerations

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[90] *Nixon v. Mo. Mun. League*, 541 U.S. 125 (2004).

[91] *State of Tennessee v. FCC,* 832 F.3d 597 (6th Cir. 2016).

[92] *See, e.g., Understanding the Debate* at p. 106-108 (profiling Florida's legislative approach).

[93] In Tennessee, these requirements apply to municipal electric systems seeking to enter the broadband business. *See* Tenn. Code Ann. § 7-52-602.

[94] *See, e.g.,* Masha Zager, *A Record Increase in Municipal Fiber Broadband,* Broadband Communities (Oct. 2017), http://www.bbcmag.com/2017mags/Oct/BBC_Oct17_RecordIncrease.pdf.

[95] *See, e.g.,* Joshua Sabatini, *Funding Slashed for Farrell's Municipal Citywide Internet Initiative*, June 25, 2018, S.F. Examiner, http://www.sfexaminer.com/funding-slashed-farrells-municipal-citywide-internet-initiative/.

[96] *See* Carly Moore, *City Council Rejects Broadband Issue,* March 2, 2017, NBC 11, http://www.nbc11news.com/content/news/City-council-debates-broadband-issue--415177053.html.

[97] *See* Caleb Whitmer, *Laketown Township Voters Reject Township-Owned Internet Network,* May 3, 2016, Holland Sentinel, http://www.hollandsentinel.com/news/20160503/laketown-township-voters-reject-township-owned-internet-network.

implicated in recent municipal broadband inquiries. To that end, the following components might be of particular interest to state (and local) policymakers and decision-makers focused on assuring the responsible deployment of broadband within their borders:

- Codifying a rigorous evaluative process along the lines of the ACLP's Policymaker Checklist.

- Requirements to assure that evaluative consultants do not have a direct or indirect business interests in the outcome of a GON inquiry.

- Requiring that any business plan, pro forma, and related financial projections be subject to independent review by a disinterested firm, preferably a firm with significant accounting and financial modeling expertise.

- Requiring indemnification from key stakeholders involved in a GON project (*e.g.*, consultants, engineers) to enhance accountability and to mitigate against financial losses that might stem from a third-party's misrepresentation, failure to perform, etc. vis-à-vis a municipal broadband system.

4. EFFECTIVE BROADBAND PLANNING & POLICYMAKING AT THE STATE & LOCAL LEVELS

Motivations for public action in the broadband space are clear: high-speed Internet connectivity is transforming every aspect of modern life and commerce. Attempting to harness this transformative technology for economic and social gain is thus a rational response by stewards of the public good, who increasingly understand that broadband connectivity is a vital ingredient to short-term economic revival and long-term prosperity. As such, state and local policymakers have critical roles to play in bolstering broadband connectivity across the United States.

The following offers (1) high-level principles to guide state and local processes around broadband planning and (2) ideas for using those principles to inform specific policymaking actions at the state and local levels.

4.1 Guiding Principles

The following guiding principles are offered to state and local policymakers as they consider the best route to improving broadband connectivity.

4.1.1 Data is Essential

Any inquiry into local broadband connectivity needs should be informed by accurate data regarding existing broadband assets and current take-rates for available services.

- Gathering data should be done in partnership with service providers and other stakeholders. Ideally, to assuage concerns about sharing proprietary data, a neutral third-party should be engaged for these purposes.

- Failure to gather and leverage data in this manner will yield incomplete "conclusions" about the true state of broadband availability and adoption. Such could foreclose viable options for addressing these issues in a cost-effective and timely manner.

4.1.2 Technology Neutrality & Regulatory Parity are Critical

The goal of any meaningful broadband planning effort should be to support continued competition amongst providers.

- *Technology neutrality* means that policies and practices do not explicitly or implicitly favor one type of broadband platform over another. Preserving technology neutrality in the planning process recognizes the dynamic nature of consumer demand.

- *Regulatory parity* ensures that all firms have the same opportunity to benefit from concessions or other privileges that a locality might grant to a provider. For example, revisions to service obligations or access to expedited review/approval processes should be accessible to all providers in order to assure a level playing field.

4.1.3 Assure Independent Vetting

Localities often hire outside consultants to assist in broadband planning. It is important that the work of these entities is specifically delineated and aligned with the goals of the city. In addition to potentially codifying additional protections at the state level (as detailed in section 3), municipalities should consider implementing procedures to protect their and taxpayers' interests during broadband-related inquiries.

- Third-parties should be thoroughly vetted to ensure that they have a sufficiently robust, successful track-record vis-à-vis providing municipalities with sound, data-driven, and impactful advice.

- Evaluative consultants involved in inquiries implicating a possible municipal broadband network should not have any direct or indirect financial interest in the outcome of that work.

- Any inquiry conducted on behalf of a city (*e.g.,* a broadband survey or formal business plan) should be properly designed to assure maximum accuracy and vetted by an independent expert to verify methodologies, findings, and recommendations.

4.2 Operationalizing the Principles

The following details a range of actions that state and local policymakers might engage in as they push forward in their pursuit of more robust broadband connectivity. The processes surrounding these actions should be informed by the principles noted above.

- Using accurate, up-to-date data, *correctly identify the problem* to be addressed by state/local policy and carefully tailor responses to it.

- *Focus supply-side interventions on truly unserved areas*. Otherwise, scarce public resources (*e.g.,* subsidies) might be squandered if used to support unnecessary overbuild (in both the middle-mile and last-mile).

- Explore the feasibility of structuring *broadband grant programs* that leverage general tax revenues to support the expansion of existing broadband networks into unserved areas. Several states, including New York, have developed successful programs along these lines.

- *Let actual consumer demand rather than subjective speed benchmarks guide broadband planning*. Calls for achieving a subjective speed benchmark – like universal gigabit fiber connectivity – should be carefully evaluated in the context of actual consumer demand. Among the vast majority of households and businesses across the U.S., there is little actual demand for super-fast broadband connectivity. Indeed, most consumers don't think of broadband in terms of speed; rather, they think about it in terms of whether a connection allows them to do what they want to do online. The needs of anchor institutions (*e.g.*, schools, hospitals, libraries) and businesses are significantly different from those of households. Understanding these differences will assist in tailoring effective policies impacting broadband deployment and adoption.

- Engage in *holistic policy reforms* aimed at updating regulatory frameworks at the state and local levels so that they better reflect the contours of modern broadband systems. States and localities across the country are engaging in these actions daily as they work to facilitate the deployment of next-generation networks. To date, some 19 states have acted to streamline the review and approval processes necessary to support the timely construction of 5G networks.[98] A growing number of cities are collaborating with private providers to forge similarly forward-looking frameworks. Such efforts should also focus on wired networks, perhaps with an eye toward modernizing franchising rules to hasten more robust broadband deployment.

[98] *See* NCSL, Mobile 5G and Small Cell Legislation (as of May 7, 2018), http://www.ncsl.org/research/telecommunications-and-information-technology/mobile-5g-and-small-cell-legislation.aspx.

- *Focus on the demand-side*. Effective broadband planning is incomplete unless it focuses on ensuring that residents and businesses are adopting and productively using available internet connections. State and local policymakers should work to ensure that any discussion about broadband deployment is balanced by an equally robust inquiry into the nature of local demand. Doing so will ensure that a more diverse group of stakeholders, especially those with expertise in providing digital literacy training and other such services, have ample opportunities play impactful roles.

Policymaker Check List

The following check list of questions is offered to state and local policymakers as a resource for evaluating proposals for government-owned broadband networks (GONs). Because these networks typically require long-term commitments of limited public resources and entail the assumption of substantial risk, decision-making processes should be as informed and comprehensive as possible.

Questions to Ask When Deciding Whether to Undertake a Government-Owned Broadband Network

When considering a GON, understanding the contours and mechanics of local broadband markets is essential. The following checklist of questions identifies key issues to examine on both the supply side and demand side.

Assessing the Local Broadband Market	Questions To be Asked
Have local officials comprehensively examined the local broadband market? Such examinations should encompass both the supply side and the demand side.	☐
On the supply side: • What is the nature of local broadband competition? How many total broadband options—wireline, wireless, satellite, etc.—do consumers have access to? • Are there barriers to further deployment by incumbent Internet Service Providers (ISPs)? New entrants? • Has the municipality analyzed how it could leverage its resources to facilitate additional network deployment by private ISPs? Examples include reevaluating existing rights-of-way administration, tower siting approvals, antiquated zoning laws, and franchising processes. • Has the municipality engaged ISPs in dialogues around meeting clear goals on the supply side? • Has the municipality clearly articulated its supply side goals for broadband via RFPs/RFIs and/or other such means of public communication? • Are there opportunities to use public-private partnerships (PPPs) to address supply side challenges? Pilot programs? Other experimental approaches?	☐
On the demand side: • Are there data available on the nature of local broadband demand and use? Are there data regarding adoption rates across the municipality? Are there cost-effective ways of gathering such data (e.g., via existing survey tools, anchor institutions, etc.)? • Has the municipality engaged experts in the private and nonprofit sectors to identify barriers to more robust adoption and utilization? Has the municipality begun work to remove those barriers? • Has the municipality inventoried and examined existing resources on the demand side—e.g., training programs, anchor institutions, digital literacy initiatives? • Has the municipality attempted to work with and through local social infrastructures to address real demand side needs? • Has the municipality attempted to forge PPPs with partners in the private and nonprofit sectors? Have these partners attempted to leverage existing funding opportunities at the state and/or federal levels to support these efforts? • In unserved and underserved areas, have partners in the public, private, and nonprofit sectors engaged in sufficient demand aggregation activities to create favorable environments for new network deployment?	☐

Evaluating Related Municipal Factors	
Has the municipality evaluated basic infrastructure needs and weighed them against perceived and real broadband needs? These include developing plans to maintain roads, bridges, dams, electric grid components, water system elements, ports, and other basic public infrastructure for which state and local governments are responsible.	☐
Has the municipality identified the full range of economic, social, and infrastructural opportunity costs associated with building a GON? Are there opportunities to achieve core public goals for broadband and new technologies generally without endeavoring to build a municipal network or otherwise interfere with organic market forces?	☐
Does the municipality have a balanced budget? A surplus? A deficit? Is it financially solvent? Are there competing priorities for funding? Is the municipality assuming additional debt (e.g., under-funded pensions)?	☐

Questions to Ask When Reviewing a GONs Proposal

When evaluating whether to invest in or approve a proposal for a GON, an array of variables should guide decision-making. Numerous non-GONs options may be available to address broadband issues on both the supply and demand sides. As such, state and local policymakers should carefully consider the myriad costs, risks, and complexities associated with owning and operating a commercial broadband network. The following questions are offered as a guide for policymakers to use during these intricate undertakings.

Initial Review of GONs Proposals	
Have policymakers exhausted other options for bolstering broadband from both the supply side and demand side? (Discussed at length in **section 6**.)	☐
What is driving consideration of a GON in a particular municipality? Are there actual problems or issues that policymakers are seeking to address with a municipal network? Are policymakers looking to generate income? Spur the local economy? Make the local broadband market more competitive? Are they responding to unsolicited proposals?	☐
Have policymakers and planners consulted and involved constituents in the process? Have policymakers created opportunities and a process for informative dialogue amongst citizens and stakeholders during review and planning stages?	☐
With regard to reviewing specific GONs proposals: • Does the network plan consider and address the range of possible negative outcomes—e.g., low consumer demand, reaction by private ISPs, legal challenges, state preemption, etc.? • Are performance and outcome expectations—among policymakers, the public, etc.—for the network grounded in solid data and analysis? Are assumptions and predictions about costs, take rates, and competitive impacts supported? • Have policymakers and planners addressed the challenges associated with network construction and maintenance? Factors include population density, geographic considerations, and recurring network costs. • Does the network plan have one or more "end games" or exit strategies? • Does the plan adequately consider (and contain strategies regarding) the market strengths and possible responses of private sector providers? • Does the plan create competitive or regulatory advantages for the proposed municipal provider compared to non-municipal providers?	☐

Cost, Financing & Business Model Review	
With regard to costs: • What is the estimated cost of the GON? Does this estimate encompass all aspects of maintenance, operation, and technology upgrades? • What is the expected cost of hiring experienced management and expert staff—necessary inputs for operating a network in a competitive market? • What is the expected cost for marketing and consumer outreach? Have these and other related costs been factored into cost projections? • Have policymakers contemplated the costs associated with unwinding the network in the event of failure? • Have policymakers considered the risk and additional costs of a negative credit action (e.g., a credit downgrade) against the locality or parent utility as a result of a GON's financial or operational difficulties?	☐
With regard to financing: • How will the network be financed? Will this entail the assumption of debt by the municipality or by a quasi-public entity (e.g., a public utility)? • How much debt will planning, construction, operation, maintenance, and technology upgrades require upfront? Over the long term? How long will it take to repay these debts in the best case scenario? How long in the worst case scenario? Have policymakers quantified these scenarios? • Who bears the financial risk of network failure? Bond default? Are taxpayers shielded from these obligations? • Does the business model use alternative funding mechanisms that would limit taxpayer exposure to the costs of failure? • To what extent does the financing plan revolve around government grants or other public assistance? Are these funds guaranteed? Provided in lump-sum upfront or an installment basis? Is this aid conditional (e.g., tied to certain performance metrics)? • Has the municipality explored the feasibility of indemnification of public outlays if a network fails? This might be appropriate in instances where GONs proposals are offered unsolicited to municipalities.	☐
With regard to proposed business models: • Is the proposed business plan reasonable when measured against actual consumer demand for broadband services and when measured in light of competitive conditions in local markets? • To what extent does the business model hinge on cross-subsidies (e.g., by a parent electric utility)? Are these cross-subsidies legal? Sustainable? Do they provide the municipal network with a competitive advantage over providers? • Does the proposed business plan include contingency planning to address under-adoption, pricing adjustments by competitors, and/or outright failure? • Does the business model allocate any potential profits to the local government (e.g., payments in lieu of taxes)? • Does the business model factor in debt servicing generally? In the event that subscriber forecasts are off? • To what extent does the business plan include supplemental borrowing or allocation of additional funds/resources by local government?	☐
Legal, Regulatory & Public Policy Considerations	
Are there state and/or local statutes to guide the GON review process?	☐
Are there related utility laws that might impact core aspects of the proposal (e.g., prohibitions or limitations on utility cross-subsidies)?	☐
Are there limitations on the extent to which municipalities can leverage public resources (e.g., rights-of-way) to provide a commercial service in direct competition with private providers?	☐
Is the municipality empowered under state law to engage in activities that amount to industrial planning?	☐
In the absence of formal state or local rules regarding GONs, has the municipality considered a public referendum or other means of public engagement?	☐