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Big City Municipal Broadband: Repackaging Net Neutrality Arguments Won't Fly

by

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I. Introduction and Summary

Until recently, the main argument made by proponents of municipal broadband systems has been that certain generally smaller communities do not have enough private broadband providers. However, since the Federal Communications Commission (FCC) adopted the *Restoring Internet Freedom Order* overturning the Title II public utility-style regulations imposed in the *Title II Order*, larger cities throughout the United States, like Seattle, San Francisco, and Baltimore, are considering government-run broadband projects that they claim will abide by strict net neutrality principles. While municipal broadband advocates claim that private providers do not live up to the net neutrality principles they favor, the same advocates have shown they are willing, if not eager, to accept uncritically the idea that municipal providers somehow will do better. This trust is misplaced considering that, to date, municipal providers have questionable records regarding compliance with the very net neutrality criteria advanced by their proponents, along with their history of financial failure.

Arguments for “big city” municipal broadband are very different from the previous arguments that municipal broadband systems are needed because markets have too few providers and local governments can fill the void. Instead, municipal broadband proponents are now arguing that even in cities where multiple private providers are in the market, government-run broadband is

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needed because private broadband providers are the "wrong kind" of providers. Specifically, the advocates for big city municipal broadband are arguing that private providers might not operate according to "net neutrality" principles or might fail to protect speech and privacy rights of their users, and that government-run broadband can do better.

The new arguments for municipal broadband are actually the same arguments we heard from proponents of the 2015 *Title II Order* that imposed public utility-style regulation on Internet service providers (ISPs) in the name of "net neutrality." These new arguments for municipal broadband rely heavily on the Obama FCC's "gatekeeper" theory, which was one of the main economic arguments for the 2015 *Title II Order*, and also on arguments that the municipal broadband systems are needed to protect free speech and privacy rights.

The historical evidence of failure and financial instability of municipal networks is a very real threat that harms the economic progress of many municipalities. Municipal broadband systems have consistently failed to live up to expectations, and there is little reason to believe the results will be any different in larger markets that already have multiple providers. This should be the main concern of local governments when deciding if their community should build a municipal network.

Baltimore, San Francisco, and Seattle are among the cities considering new government-run broadband networks, despite the fact that an overwhelming majority of residents in all three cities are served by three or more fixed broadband providers offering download speeds of at least 25 Mbps. These cities are significantly larger in population and generally wealthier than the largest cities that currently deploy a municipal network.

Largest Cities with Municipal System	Population	Median Household Income	Percentage of Residents Served by 3+ Fixed Providers Offering 25+ Mbps
Chattanooga	177,582	\$41,226	40.1%
Lafayette	127,625	\$48,139	60.7%
Cities Proposing Municipal System	Population	Median Household Income	Percentage of Residents Served by 3+ Fixed Providers Offering 25+ Mbps
Baltimore	614,664	\$47,350	59.2%
San Francisco	870,887	\$103,801	91.9%
Seattle	704,358	\$83,476	73.2%

(Source: City Data, FCC National Broadband Map)

The big cities considering new municipal broadband projects already have budget problems, so they likely would struggle with the cash flows from even financially viable broadband projects. Baltimore schools are facing a serious budget crisis and major cuts for the next school year. San Francisco is struggling with huge projected budget deficits driven in large part by its public sector pension liabilities. And Seattle recently halted work on its streetcar system expansion due to large cost overruns in both its construction costs and projected future operating costs.

Moreover, when we examine the performance of current government-run broadband utilities, we find that they have poor track records in promoting the "net neutrality" values their proponents

claim to support. Their terms of service often threaten to block content and speech that government managers might find offensive, and their privacy protections are weak. For example, Concord Light, the municipal broadband provider in Concord, Massachusetts, includes in its terms of service a threat that the government-run utility will censor or block content “that Concord Light deems to be unlawful, harmful, or offensive or otherwise, in its reasonable discretion.” Based on this, there is no reason to believe that government-run utilities will be more “net neutral” than privately-run broadband providers, and there is good reason to expect them to perform worse than their private counterparts.

Local governments have better options available to them. They instead should try to promote more competition among broadband companies, so that their residents have more alternatives from which to choose and more ability to reject broadband providers that perform poorly or fail to protect their privacy or freedom to post and distribute whatever legal content they choose. Public policy at the federal, state, and local level should focus on promoting broadband investment across all technologies by reducing barriers that stand in the way and consider other ways they can encourage investment by private providers.

II. Big Cities Considering Municipal Broadband Networks

Since the FCC adopted the *Restoring Internet Freedom Order*¹ overturning the Title II public utility-style regulations imposed in the 2015 *Title II Order*,² cities throughout the United States have proposed or at least considered municipal broadband projects with the hope of offering a competitive alternative that will abide by network neutrality principles. These government-run broadband projects are being considered despite promises from many private broadband providers to keep the Internet free and open and that “the delivery of traffic will not be blocked or throttled.”³ While advocates in favor of municipal broadband and/or net neutrality rules may argue that these promises from private broadband providers are not persuasive, they have shown a great willingness to believe uncritically the idea that municipal providers somehow will do better on the net neutrality principles they claim to support. Considering that municipal providers to date have questionable records regarding the very net neutrality criteria advanced by their proponents, and also have a history of financial failure, this trust is misplaced.⁴

¹ Restoring Internet Freedom Order, WC Docket No. 17-108, (December 14, 2017), available at: https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-166A1.pdf.

² Federal Communications Commission, In the Matter of Protecting and Promoting the Open Internet, WC Docket No. 14-28, Report and Order on Remand, Declaratory Ruling, and Order (“*Title II Order*”).

³ See, e.g., “Reaffirming Our Commitment to an Open Internet,” NCTA – The Internet & Television Association, (May 17, 2017), available at: <https://www.ncta.com/whats-new/reaffirming-our-commitment-an-open-internet>.

⁴ See, e.g., *Restoring Internet Freedom Order*; Dissenting Statement of Commissioner Ajit Pai, *Title II Order*; Theodore R. Bolema and Michael J. Horney, “The Problem with Municipal Broadband and Solutions for Promoting Private Investment,” *Perspectives from FSF Scholars* Vol. 12, No. 21 (June 21, 2017), available at: http://www.freestatefoundation.org/images/The_Problem_with_Municipal_Broadband_and_Solutions_for_Promoting_Private_Investment_062017.pdf; Enrique Armijo, “A Case of Hypocrisy: Government Network Censors Support Net Neutrality for Private ISPs,” *Perspectives from FSF Scholars* Vol. 13, No. 1 (January 3, 2018), p. 2, available at: http://www.freestatefoundation.org/images/A_Case_of_Hypocrisy_-_Government_Network_Censors_Support_Net_Neutrality_for_Private_ISPs_010318.pdf; Christopher S. Yoo and Timothy Pfenninger, “Municipal Fiber in the United States: An Empirical Assessment of Financial Performance,” University of Pennsylvania Law School’s Center for Technology, Innovation and Competition (May 2017), available at: <https://www.law.upenn.edu/live/files/6611-report-municipal-fiber-in-the-united-states-an->

For the most part, government-run broadband networks have been built in small municipalities that had limited options for broadband access. However, now big metropolitan cities are considering municipal broadband projects even though their residents already have access to multiple broadband providers. Three major cities currently considering new municipal networks are Baltimore, San Francisco, and Seattle. Their proposals, and the context in which they are offered, will be considered below.

Baltimore

In March 2018, Baltimore City Council President Bernard Young introduced a bill to produce a formal feasibility study on developing a municipal fiber broadband network in Baltimore. Adopting a feasibility study for a municipal network is just one step towards actually building one, but it is a necessary step and indicates an interest in moving forward with the project. The bill specifically cites the repeal of the FCC's *Title II Order* as its motivation:



The current federal administration's repeal of Obama-era regulations ensuring that internet providers provide access to all content and applications regardless of the source may further reduce the incentive for private internet providers to build out their networks since they will now be able to financially benefit from internet congestion. In this environment, it is time for Baltimore to consider joining the roughly 150 or more municipalities nationwide who have deployed municipal-owned fiber-to-the-premises (FTTP) networks to ensure that their citizens have the ability to take advantage of all of the opportunities that the internet offers.⁵

Baltimore is not an underserved market. As of December 2016, 99% of Baltimore City residents had access to two or more fixed broadband providers offering 25 Mbps/3 Mbps or greater, and nearly 60% of Baltimore residents had access to three or more fixed broadband providers offering 25 Mbps/3 Mbps or greater.⁶

Baltimore sits on a 54-mile fiber ring so use of this existing infrastructure could lessen the costs of building a city-wide network. But the existing network has not been updated in nearly 40 years, which means expensive upgrading would be needed.⁷ As we discuss in Section VII of this paper, the increasing capabilities of wireless broadband technologies have allowed satellite, fixed wireless, and mobile wireless to become viable alternatives for residential wireline broadband connections. If Baltimore wants to proceed with a city-run Internet service, it could use its current fiber ring and much of its existing infrastructure to offer fixed wireless broadband in

⁵ "Municipal Broadband Feasibility Study," City of Baltimore, Council Bill 18-0075R, Introduced March 26, 2018, available at: <https://baltimore.legistar.com/LegislationDetail.aspx?ID=3461022&GUID=6086DBC6-C44D-4704-8E4B-E2DFB7829559&Options=ID|Text|&Search=broadband>.

⁶ FCC, National Broadband Map, Baltimore City, MD, December 2016.

⁷ Andrew Zaleski, "Baltimore City's 3 Big Goals for \$2M Buildout of City's 54 Mile Fiber Ring." *Technically Baltimore*, (October 8, 2013), available at: <https://technical.ly/baltimore/2013/10/08/chris-tonjes-baltimore-fiber-ring-overbuild-broadband-access/>.

underserved areas at a much lower cost than building out the city-wide FTTP network that is currently under consideration.⁸

San Francisco

San Francisco Mayor Mark Farrell is proposing a city-wide municipal broadband network and claims that the broadband service will adhere to the principles of net neutrality.⁹ Although the proposal was adopted before the FCC adopted the *Restoring Internet Freedom Order*, the narrative surrounding the proposal has shifted towards net neutrality.



Jess Montejano, Policy and Communications Director to then-Supervisor (now Mayor) Mark Farrell, said in December 2017 that the municipal broadband proposal was a response to the FCC’s *Restoring Internet Freedom* decision: “One of the clearest responses that any local government can do in response to this net neutrality decision is to make sure they own their own network,” because “we can protect the values that all San Franciscans deeply care about.”

Moreover, a 2018 report entitled “A Network for All of San Francisco: Net Neutrality, Digital Privacy & Local Control,” prepared by the San Francisco Blue Ribbon Panel on Municipal Fiber Subcommittee on Privacy & Governance, claims:

Net Neutrality is a principle that's faced many threats over the years, such as ISPs forging data to tamper with certain kinds of traffic or slowing down or even outright blocking protocols or applications. Net Neutrality can be protected by a few clear, important rules that should apply to ISPs operating over the City's fiber infrastructure. If the City adopts clear rules following the model provided by the FCC in 2015, it can help to ensure the Internet will continue to serve as a vibrant space open for all voices.¹⁰

According to the financial analysis of the municipal broadband proposal, the network could cost between \$1.5 and \$1.8 billion, and one estimate says that the network would cost over \$230 million in annual operation costs. The financial analysis provides three options for financing the municipal network. One is a public model, in which the city would construct, finance, and

⁸ See, e.g., Michael J. Horney, “Verizon Plans to Offer Fixed Wireless Residential Broadband,” *FSF Blog*, (December 4, 2017) available at: <http://freestatefoundation.blogspot.com/2017/12/verizon-plans-to-offer-fixed-wireless.html>; Michael J. Horney, “Fixed Wireless Broadband Could Help Reach More Rural Consumers,” *FSF Blog*, (November 24, 2017), available at: <http://freestatefoundation.blogspot.com/2017/11/fixed-wirelessbroadband-could-help.html>.

⁹ Potential Economic Benefits of the City Deploying a Ubiquitous Gigabit Speed Network, City and County of San Francisco Board of Supervisors, (May 9, 2018), available at: <https://sfbos.org/sites/default/files/BLA.FiberEconBenefits.050918.pdf>.

¹⁰ “A Network for All of San Francisco: Net Neutrality, Digital Privacy & Local Control,” San Francisco Blue Ribbon Panel on Municipal Fiber Subcommittee on Privacy & Governance (February 2018), p. 3, available at: <https://sfmunifiber.files.wordpress.com/2018/02/privacy-governance-report.pdf>. The specific rules this report is advocating are the three bright-line prohibitions from the 2015 *Title II Order* – no blocking, no throttling, and no paid prioritization.

operate the entire network. Another is a public-private partnership model, in which the city would construct the network but multiple private providers could offer service using the government network. And the last one is a private model, in which the city would relax “construction requirements and permitting requirements pertaining to network construction,” encouraging deployment for a private company to build and operate the municipal network.¹¹

Although a private model would be the optimal decision for reducing costs, unless the city is relaxing requirements for all providers operating in San Francisco, this action would amount to a provider-specific subsidy that likely will be based on favoritism and not necessarily on benefits for the residents of San Francisco. As of December 2016, 92% of San Francisco County residents were served by three or more fixed providers offering download speeds of 25 Mbps and upload speeds of 3 Mbps or greater. And nearly 99% of residents had access to two or more fixed providers offering at least the same speeds.¹²

Seattle

There has been a strong movement in support of a municipal broadband network in Seattle for several years, but the FCC’s recent decision has shifted the justification for such a network.¹³ An organization known as “Upgrade Seattle” calls itself “a campaign for equitable public Internet.” The Upgrade Seattle website claims the following about how a municipal network would protect net neutrality:



Seattle

Net Neutrality is the concept that all Internet traffic should be treated equally, and that your Internet provider shouldn't be able to charge companies like Netflix, Amazon or a future Seattle start-up, artist, or nonprofit extra money in order to offer you content.

With the recent repeal of Net Neutrality, the need for a publicly-run, not-for-profit internet provider is even more immediate. Seattle's new utility would have Net Neutrality enshrined in its governing documents, to ensure that all Seattle residents are able to browse the websites they choose, at the speeds they choose.¹⁴

Seattle Mayor Jenny Durkan stated in the past that she is reluctant to take on the financial burden associated with municipal broadband networks. While running for Mayor in June 2017, she said the following about adopting a municipal broadband project:

Broadband is emerging as the next basic life service, as electricity, water and sewer once was. As mayor, I would tap experts in the area of broadband deployment and continue to

¹¹ Financial Analysis of Options for a Municipal Fiber Optic Network for Citywide Internet Access, March 15, 2016, available at: <https://sfbos.org/sites/default/files/FileCenter/Documents/55357-FAC1.pdf>.

¹² FCC, National Broadband Map, San Francisco County, CA, December 2016.

¹³ Zaid Jilani, “Killing Net Neutrality Has Brought on a New Call for Public Broadband,” *The Intercept*, (December 15, 2017), available at: <https://theintercept.com/2017/12/15/fcc-net-neutrality-public-broadband-seattle/>.

¹⁴ Upgrade Seattle, Frequently Asked Questions, available at: <https://www.upgradeseattle.com/faqs/>.

find ways to partner with the private sector to ensure underserved neighborhoods, community centers, libraries and schools, have broadband facilities, the last mile connections and robust wireless services to serve all in City. And we must avoid the costly mistakes of past failed attempts. I am open to determining the best ways the City can use its resources (property, funds and franchise agreements) to leverage private investments and their rapidly changing technologies so we get the service without having to take on the financial burden or technological risks of the overall system.¹⁵

While there is no current proposal for a municipal network in Seattle, there has been in the past.¹⁶ Former Seattle Mayor Ed Murray was considering a municipal broadband network and in June 2015 the Columbia Telecommunications Corporation published a feasibility study for a Seattle fiber network, projecting the capital costs would be between \$480 million to \$665 million.¹⁷ The study also found that in order to pay for itself, the network would need to obtain 43% of market penetration with a monthly service charge of \$75. If proposed today, this would be a difficult task for a city in which over 70% of residents had access to three or more fixed providers offering 25 Mbps or greater as of December 2016.¹⁸

At the time this feasibility study was published, Ben Noble, Director of Seattle's City Budget Office, sent a memo to the Seattle Department of Information Technology suggesting that the projected benefits might be overestimated given the robust competition in Seattle's broadband market:

The report highlights that the City's entry into the broadband market will face stiff competition from well-funded incumbents, whose aggressive pricing strategies could thwart efforts to build a robust subscriber base for a municipal system. The financial analysis included in the report demonstrates that if a municipal network does not attract a sufficient subscriber base – an outcome which is more likely than apparent, as success would require take-rates rivaling or surpassing those enjoyed by incumbents after years of large investment – losses could mount quickly. With annual debt service costs of between \$40 and \$55 million, the capital investment needed to build a municipal network present a substantial operational risk to the General Fund.¹⁹

While it was a sound economic decision for former-Mayor Ed Murray to refrain from deploying a city-wide municipal broadband network,²⁰ Upgrade Seattle continues to support the cause. And

¹⁵ Jenny Durkan, "My responses to The Urbanist questionnaire," *Medium*, (June 13, 2017), available at: <https://medium.com/@JennyforSeattle/my-responses-to-the-urbanist-questionnaire-b64376499958>.

¹⁶ In October 2017, Seattle Councilmember Rob Johnson proposed an amendment to the city's budget to dedicate future capital spending towards a municipal network but the amendment did not pass. Colin Wood, "Seattle May Take Another Stab at Municipal Broadband," *State Scoop*, (October 13, 2017), available at: <https://statescoop.com/seattle-may-take-another-stab-at-municipal-broadband>.

¹⁷ "City of Seattle Fiber-to-the-Premises Feasibility Study," *Columbia Telecommunications Corporation*, (June 2015), available at: <http://www.seattle.gov/Documents/Departments/Broadband/2016-6SeattleReport-Final.pdf>.

¹⁸ FCC, National Broadband Map, King County, WA, December 2016.

¹⁹ Ben Noble, City Budget Office, Memorandum, (June 8, 2015), available at:

<https://www.documentcloud.org/documents/2095456-2015-6-5-city-of-seattle-fiber-to-the-premises.html>.

²⁰ Colin Wood, "Seattle May Take Another Stab at Municipal Broadband," *State Scoop*, (October 13, 2017), available at: <https://statescoop.com/seattle-may-take-another-stab-at-municipal-broadband>.

even though Mayor Durkan does not support a municipal broadband network, the movement in favor of a municipal network in Seattle likely is not going away now that the debate around municipal broadband has shifted towards net neutrality.

III. These Big Cities Have Robust Broadband Competition

With these big cities considering implementing municipal broadband networks in the name of net neutrality, it is instructive to compare them to cities which already operate municipal networks. We believe that Chattanooga, TN, and Lafayette, LA, are currently the two largest cities with a municipal broadband network,²¹ yet these two cities are significantly smaller than cities that recently have considered such projects. In the table below we show data for Chattanooga and Lafayette along with the three big cities discussed above that are considering municipal networks. We compare the population, the median household income, and the percentage of residents covered by 3+ fixed broadband providers offering download speeds of 25+ Mbps.

Largest Cities with Municipal System	Population	Median Household Income	Percentage of Residents Served by 3+ Fixed Providers Offering 25+ Mbps
Chattanooga	177,582	\$41,226	40.1%
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(Source: City Data, FCC National Broadband Map)

It should be noted that Chattanooga and Lafayette already have municipal providers deployed in the community, and these providers are included in the table, while Baltimore, San Francisco, and Seattle only have private providers. Therefore, if we compared broadband penetration of only private providers across the two sets of cities, the percentage of residents with access to three or more private providers offering download speeds of 25 Mbps or greater would be significantly smaller in Chattanooga and Lafayette.

Not only are these new cities larger, but their residents on average are wealthier, particularly with respect to San Francisco and Seattle. The combination of relatively high incomes and large populations are factors that generally produce a strong demand for a broadband network. These large cities are well-positioned for robust broadband competition, with large populations of potential customers, which is why the majority of residents in Baltimore, San Francisco, and

²¹ Emily Badger, “Why Are There No Big Cities with Municipal Broadband Networks?,” *CityLab*, (March 4, 2013), available at: <https://www.citylab.com/solutions/2013/03/why-are-there-no-big-cities-municipal-broadband-networks/4857/>.

Seattle already have access to three or more fixed broadband providers offering download speeds of 25 Mbps or greater.

IV. New Arguments Being Advanced for Big City Municipal Broadband

The new arguments for municipal broadband in big cities are actually the same arguments we heard from proponents of the 2015 *Title II Order* that imposed Title II regulation on ISPs in the name of “net neutrality.”²² Specifically, the new arguments for municipal broadband rely heavily on the Obama FCC’s “gatekeeper” theory, which was one of the main economic arguments for the 2015 *Title II Order*. And the new arguments also claim that municipal broadband systems are needed to protect free speech and privacy rights.

For example, San Francisco’s “A Network for All of San Francisco: Net Neutrality, Digital Privacy & Local Control” report states: “With the federal government moving away from protections for Net Neutrality, it falls on state and local government to protect against unfair data discrimination that stifles speech, learning, and the economy.”²³ This report bases its call for a city-owned network explicitly on the gatekeeper theory:

Open access models work by lowering the switching costs for customers and reducing the investment costs for new providers to enter the market. Users can discourage abusive practices by switching to a provider that better suits them. Competition improves the incentive to provide high speed, reliable service at an affordable cost: as users will have choices between service providers, rather than being powerless to escape an ISP that is unreliable or provides low quality service.²⁴

The San Francisco report also raises the false claim that consumers’ data privacy is no longer protected due to recent actions by the FCC and U.S. Congress:

As intermediaries between their users and the rest of the Internet, ISPs have access to a vast amount of private data, detailing not only when and how their customers use the Internet, but also much of the content of their private communications. Customers have little choice but to transmit this information over their ISP’s facilities in order to access the Internet. This leaves their data open to potential exploitation by the ISP for purposes other than providing Internet service. For example, an ISP might want to sell data about its users’ private online habits, or use that sensitive information to serve targeted advertising. Indeed, absent strong privacy protections dictating otherwise, a provider might require a user gives consent to such privacy-invasive practices in exchange for accessing the Internet at all – or may charge an extra fee to users who refuse to consent.

Recognizing these risks to Internet users’ privacy, the FCC established new privacy rules in October 2016 that gave consumers greater control over their ISPs’ use and sharing of

²² Federal Communications Commission, “Protecting and Promoting the Open Internet Notice of Proposed Rulemaking,” GN Docket No. 14-28 (February 26, 2015), at ¶462, available at: https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.pdf.

²³ “A Network for All of San Francisco: Net Neutrality, Digital Privacy & Local Control,” at p. 3.

²⁴ “A Network for All of San Francisco: Net Neutrality, Digital Privacy & Local Control,” p. 3.

their personal information. Those rules were quickly rolled back in early 2017 by the new Congress and President (citations omitted).²⁵

The American Civil Liberties Union (ACLU) is making a similar call for cities to build and operate their own broadband networks in hopes of achieving certain “net neutrality” outcomes favored by the ACLU. A new report by the ACLU, entitled “The Public Internet Option: How Local Governments Can Provide Network Neutrality, Privacy, and Access for All,” claims:

The good news is that there is another, longer-term avenue open to communities that are serious about protecting privacy and network neutrality: investing in internet infrastructure that is owned by municipal and county governments rather than by private companies. Nothing the FCC has done prevents a city, county, or town from directing its own, municipally run service to honor strong network neutrality and privacy policies. If the commercial providers are determined to make money by violating the privacy and speech rights of their users, and if some policymakers in Washington are determined to clear the way for them to do that — then states, cities, towns, and counties should take matters into their own hands by creating publicly owned services that do honor those values and can help ensure an open internet.²⁶

Thus, the ACLU report claims government-run broadband networks will give more people access to the Internet and will promote the “net neutrality” policies the ACLU favors. But then the ACLU goes even further, suggesting that First Amendment rights may be violated unless municipal governments operate their own communications networks:

Fair access to high-quality Internet is a constitutional issue because such access is essential to our ability to access and share information, which in turn enables us to shape our political, civic, and social systems. As the internet becomes ever more central to our lives, individuals’ ability to exercise their First Amendment rights depends increasingly on access to online platforms. Unequal online access therefore means unequal power to exercise First Amendment rights.²⁷

The irony should not be lost. The ACLU, despite its long history of protecting First Amendment free speech rights against government infringement, is now advocating for government ownership and operation of communications networks as a means of protecting free speech, under the beguiling guise of net neutrality.²⁸ The ACLU report implicitly assumes that local governments can be trusted with this new power to be arbiters of what speech is permissible on the Internet. The San Francisco report makes a similar claim about greater government control

²⁵ “A Network for All of San Francisco: Net Neutrality, Digital Privacy & Local Control,” p. 6.

²⁶ Jay Stanley, “The Public Internet Option: How Local Governments Can Provide Network Neutrality, Privacy, and Access for All,” American Civil Liberties Union (March 29, 2018), p. 5, available at: https://www.aclu.org/sites/default/files/field_document/aclu_municipal_broadband_report.pdf.

²⁷ “The Public Internet Option,” p. 12.

²⁸ See Randolph J. May and Theodore R. Bolema, “Just a Shadow of the Old ACLU,” *Washington Times*, April 15, 2018, available at: <https://www.washingtontimes.com/news/2018/apr/15/the-american-civil-liberties-union-yields-to-the-s/>.

over communications networks being needed to protect online speech.²⁹ Free State Foundation scholars have documented elsewhere how municipal broadband providers have a troubling history of blocking or otherwise restricting online content and failing to respect privacy concerns of their users.³⁰

One example of a municipal broadband utility that proclaims its support for net neutrality while employing terms of service for its own government network that are inconsistent with net neutrality principles is in Concord, Massachusetts. Mark Howell, the chief information officer for Concord, Massachusetts, claims in a recent *Washington Post* op-ed that the Concord municipal broadband utility (Concord Light) is providing a roadmap for “saving net neutrality”:

If the Facebook privacy debacle has shown one thing, it’s that technology companies have become immensely powerful and seemingly accountable to no one. Recent federal rollbacks of net neutrality and online privacy protections have put Americans in an even weaker position when dealing with Internet service providers.

But there is a way for the public to push back: through Internet service provided by local governments, which are directly accountable to citizens.³¹

Of course, Facebook was never subjected to the *Title II Order’s* regulations because it is not an Internet service provider. And online privacy protections were not rolled back, as Mr. Howell as well as the San Francisco and ACLU reports claim. Rather privacy protection enforcement authority was transferred back to the Federal Trade Commission, which has greater expertise and experience than the FCC, making it the better choice as the government agency taking the lead role in protecting online privacy.³²

²⁹ “A Network for All of San Francisco: Net Neutrality, Digital Privacy & Local Control,” p. 3 (“[T]he Internet also creates dangerous new opportunities for ISPs or governments to control access to knowledge and opportunities to speak. For instance, an ISP has the technological capability to block access to websites of its choosing, to insert its own content in place of content you seek or transmit, or even filter out certain content, or enrich itself by charging your favorite video provider extra money just to reach you. San Francisco can protect its residents’ access to information and freedom of speech by ensuring it and the ISPs that operate over its network do not unduly interfere with information passing over the fiber network.”).

³⁰ See, e.g., Enrique Armijo, “Municipal Broadband Networks Present Serious First Amendment Problems,” *Perspectives from FSF Scholars* Vol. 10, No. 11 (February 23, 2015), p. 2, available at: http://www.freestatefoundation.org/images/Municipal_Broadband_Networks_Present_Serious_First_Amendment_Problems_022015.pdf; Enrique Armijo, “A Case of Hypocrisy: Government Network Censors Support Net Neutrality for Private ISPs,” *Perspectives from FSF Scholars* Vol. 13, No. 1 (January 3, 2018), p. 2, available at:

http://www.freestatefoundation.org/images/A_Case_of_Hypocrisy_-_Government_Network_Censors_Support_Net_Neutrality_for_Private_ISPs_010318.pdf; Theodore R. Bolema, “A Critique of the ACLU’s “Public Internet Option” Study,” *Perspectives from FSF Scholars* Vol. 13, No. 11 (April 9, 2018), available at http://www.freestatefoundation.org/images/A_Critique_of_the_ACLU_s_Public_Internet_Option_Study_040918.pdf.

³¹ Mark Howell, “Saving Net Neutrality, One House at a Time,” *The Washington Post*, April 22, 2018, available at: https://www.washingtonpost.com/opinions/saving-net-neutrality-one-house-at-a-time/2018/04/22/a4de8a7e-39af-11e8-8fd2-49fe3c675a89_story.html?noredirect=on&utm_term=.aa7213861cb0.

³² Theodore R. Bolema, “The FTC Has the Authority, Expertise, and Capability to Protect Broadband Consumers,” *Perspectives from FSF Scholars* Vol. 12, No. 35 (October 19, 2017), available at:

Putting aside these two important facts, there is considerable irony in the claim that private Internet service providers should be singled out for conduct that allegedly is inconsistent with net neutrality. Concord Light’s own terms of service threaten that the government-run utility will censor or block content that appears to violate both net neutrality principles and the First Amendment:

While Concord Light does not control or monitor the Content of online communications, Concord Light may remove or block access to any Content from its servers that does not comply with the Terms of Use or that Concord Light deems to be unlawful, harmful, or offensive or otherwise, in its reasonable discretion.³³

The town of Concord defines the speech it may prohibit very broadly in terms that on their face appear to violate the First Amendment:

Using the Services to transmit or post any material, including text, sounds or images, that may be defamatory, harassing, abusive, fraudulent, tortious, unlawful, threatening, intimidating, or invasive of an individual’s personal privacy is prohibited. Any use that degrades, threatens, or victimizes an individual, group or class of individuals or an entity, is prohibited.³⁴

The claims that municipal broadband systems somehow will do better than private ISPs in protecting the data privacy of their users is undermined by their own terms of service.³⁵ For example, Mr. Howell’s assurance that “[w]e also protect privacy by not sharing customer information with anyone”³⁶ is inconsistent with the key language in Concord Light’s terms of service:

Concord Light assumes no obligation to inform the User that User-specific information has been provided to any person or entity. Concord Light may disclose User information or information transmitted over Concord Light’s network where necessary to protect Concord Light and others from harm, or when such disclosure is necessary for the proper operation of the system, as determined by Concord Light in its sole discretion.³⁷

Enrique Armijo, Associate Professor of Law at Elon University School of Law and a member of the Free State Foundation’s Board of Academic Advisors, has written extensively regarding government networks’ net neutrality claims. As Professor Armijo warns:

http://www.freestatefoundation.org/images/The_FTC_Has_the_Authority,_Expertise,_and_Capability_to_Protect_Broadband_Consumers_101917.pdf.

³³ “Terms and Conditions,” The Town of Concord Massachusetts (visited May 17, 2018), paragraph 6, available at: http://www.concordnet.org/483/Terms-Conditions_..

³⁴ “Terms and Conditions,” The Town of Concord Massachusetts (visited May 17, 2018), paragraph 12(d).

³⁵ See, e.g., Enrique Armijo, “Municipal Broadband Networks Present Serious First Amendment Problems,” *Perspectives from FSF Scholars* Vol. 10, No. 11 (February 23, 2015), p. 2, available at:

http://www.freestatefoundation.org/images/Municipal_Broadband_Networks_Present_Serious_First_Amendment_Problems_022015.pdf

³⁶ “Saving Net Neutrality, One House at a Time.”

³⁷ “Terms and Conditions,” The Town of Concord Massachusetts, paragraph 8.

We should thus be wary of mayors arguing that what is good for Comcast or Verizon is no good for them. The fact that they proclaim, however loudly, that they favor net neutrality, including the restrictions on blocking and other practices contained in the FCC’s 2015 Order, while employing terms of service for their own government networks that are wholly inconsistent with those restrictions, ought to give one pause.³⁸

V. Justifications for the *Title II Order* and Municipal Broadband Negate Each Other

Any arguments that municipal broadband providers would be "net neutral," or at least more net neutral than privately-owned broadband providers, is highly questionable in light of the track record of actual municipal broadband utilities. But even setting aside the track record of actual municipal broadband providers in protecting net neutrality, free speech, and privacy, the “gatekeeper” arguments being advanced by proponents of big city municipal broadband do not support their case. More likely, they undermine it.

The “gatekeeper” argument from the *Title II Order* relies heavily on the idea that switching costs are too high for consumers. The *Title II Order* says: “[R]egardless of the competition in the local market for broadband Internet access, once a consumer chooses a broadband provider, that provider has a monopoly on access to the subscriber.”³⁹ The Order then states that because of this “monopoly,” broadband ISPs have “the incentive and ability” to block and throttle content.⁴⁰ Thus, the high switching costs give private broadband providers monopoly power even when multiple broadband ISPs offer access in a given area. Such costs are said to include the time or money spent to switch from one provider to another. According to the “gatekeeper” argument, some markets may be reasonably competitive at the time customers choose a provider (which may explain why ISPs offer promotional rates for the first year of service), but these markets cease to be competitive once customers are locked in with a broadband provider.

The *Title II Order* invoked the most extreme example of market power – that is, monopoly power – in rhetorical support of its “gatekeeper power” argument for imposing public utility-style regulation. Notably, the 2015 FCC majority made this argument without conducting any actual market analysis.⁴¹ The Order also failed to acknowledge that broadband ISPs fight for customers through various forms of marketing designed to induce switching.⁴² However, the

³⁸ Enrique Armijo, “A Case of Hypocrisy: Government Network Censors Support Net Neutrality for Private ISPs,” *Perspectives from FSF Scholars* Vol. 13, No. 1 (January 3, 2018), p. 6, available at: http://www.freestatefoundation.org/images/A_Case_of_Hypocrisy_-_Government_Network_Censors_Support_Net_Neutrality_for_Private_ISPs_010318.pdf.

³⁹ *Title II Order*, at ¶ 80.

⁴⁰ *Title II Order*, at ¶ 79.

⁴¹ See Theodore R. Bolema, “Allow Paid Prioritization on the Internet for More, Not Less, Capital Investment,” *Perspectives from FSF Scholars* Vol. 12, No. 16 (May 1, 2017), p. 5, available at: http://www.freestatefoundation.org/images/Allow_Paid_Prioritization_on_the_Internet_for_More,_Not_Less,_Capital_Investment_050117.pdf.

⁴² The *Title II Order* also asserts that “mobile broadband is not a full substitute for fixed broadband connections.” *Title II Order*, at ¶ 9. The Order’s dismissal of intermodal competition is contradicted by data showing that 29% of low-income consumers, 18% of middle-income consumers, and 15% of high-income consumers are mobile-only users of broadband Internet access services. Giulia McHenry, “Evolving Technologies Change the Nature of Internet

FCC's *Eighteenth, Nineteenth, and Twentieth Wireless Competition Reports* recognized the ongoing market trends that have reduced or eliminated switching costs.⁴³

Interestingly, municipal broadband advocates argue that private broadband providers will violate network neutrality principles, so consumers should *switch* to a municipal provider to protect themselves from such violations. These advocates are correct that consumers have the ability to switch relatively easily between broadband ISPs, especially consumers in big cities served by many providers. For that reason, competition minimizes the threat of anticompetitive harms, so Baltimore, San Francisco, and Seattle residents have a choice among providers and the ability to reject any broadband providers that perform poorly or abuse their trust. Therefore, this new argument offered by proponents of municipal broadband upends the "gatekeeper" argument as it was used in the *Title II Order* because it recognizes that additional competition combats the harm they claim would arise from net neutrality violations.

Moreover, to the extent that making broadband available to more people is the goal of public policy, some features of "net neutrality" (at least as it was defined in the *Title II Order*) work to do the opposite. In particular, the *Title II Order's* ban on paid prioritization would make broadband more expensive, and therefore pricing some people out of the market, due to the "waterbed effect." As former FCC Chief Economist Michelle Connelly and FSF Academic Advisor recently explained:

The concept of the waterbed effect was within the context of no paid prioritization. Essentially, this amounts to a subsidy that is paid to certain types of content providers who want the quality of service but don't want to pay for paid prioritization. And so if we think about a waterbed, if any of you in the 70s ever went on a waterbed, if you push down on one side, you're saying the price has to be lower here for something. Well, then it's going to go up somewhere else. And so the idea was that in terms of the digital divide, the *Title II Order* of 2015, by creating this inability to charge for something, was inherently pushing up the price of the average service to the average consumer. To the extent that we think that income is a large component of when people are not adopting, you're going to be exacerbating the digital divide when you have no paid prioritization.⁴⁴

Use," NTIA, (April 19, 2016), Figure 2, available at: <https://www.ntia.doc.gov/blog/2016/evolving-technologies-change-nature-internet-use>. Such data regarding mobile-only broadband usage demonstrates that many consumers consider mobile broadband a substitute for other broadband platforms, and that the *Title II Order* was wrong to cavalierly dismiss it. As we discuss below, the increasing capabilities of broadband technologies, like satellite, fixed wireless, and 5G mobile, show that the FCC's flawed gatekeeper theory does not account for ongoing market trends and innovations.

⁴³ Seth L. Cooper, "FCC Proposed Wireless Report Should Acknowledge the Market's Competitiveness," *FSF Blog*, (September 25, 2017), available at: <http://freestatefoundation.blogspot.com/2017/09/fcc-proposed-wireless-report-should.html>.

⁴⁴ Michelle Connelly, "Final Thoughts and Looking Ahead: Perspectives from Three of FSF's Academic All-Stars," panel discussion at the Free State Foundation's Tenth Annual Telecom Policy Conference (March 27, 2018), available at: http://www.freestatefoundation.org/images/March_27_2018_Tenth_Annual_Conf_Academic_Panel_Transcript_051718.pdf.

Rather than try to address any possible concerns, however conjectural, about consumer harm due to “net neutrality” violations with heavy-handed government intervention, public policy at the federal, state, and local level should instead focus on promoting competition among broadband companies, so that their residents have more choice among providers and more ability to switch if they believe broadband providers perform poorly. As Commissioner Michael O’Rielly pointed out in his dissent to the *Title II Order*, the regulatory approach adopted by the FCC as it attempted to impose net neutrality had the opposite effect:

And yet, literally nothing in this Order will promote competition among Internet service providers. To the contrary, reclassifying broadband, applying the bulk of Title II rules, and half-heartedly forbearing from the rest “for now” will drive smaller competitors out of business and leave the rest in regulatory vassalage. Monopoly rules designed for the monopoly era will inevitably move us in the direction of a monopoly.⁴⁵

VI. The Same Problems Will Plague Big City New Municipal Broadband Systems

The dubious recycled claims that, going forward, municipal broadband systems somehow will protect net neutrality, privacy, and free speech principles, despite a failure to do so in the past, fail to address the fundamental problems that have plagued municipal broadband systems in the United States.

Municipal Broadband Systems Suffer from Serious Financial Viability Problems

A 2017 study by Professor Christopher S. Yoo of the University of Pennsylvania, a member of FSF’s Board of Academic Advisors, and Timothy Pfenninger of the University of Pennsylvania provides an in-depth analysis of all of the municipal broadband projects that publicly report data during the time period of their study. They find that nearly all of these municipal fiber projects are facing significant financial distress:

Of the 20 municipal fiber projects that reported the results of their municipal fiber operations separately, eleven generated negative cash flow. Unless operations improve substantially, these projects cannot continue to operate over the long haul, let alone cover the capital costs needed to establish operations. Of the others, five are projected to take more than 100 years to recover their costs, and two others are projected to take over 60 years.⁴⁶

Other studies over different time periods contain similar findings.⁴⁷ For example, a July 2016 study by the Taxpayers Protection Alliance profiled twelve failed municipal broadband projects. These projects include the municipal fiber-optic network in Provo, Utah, which cost \$39.5

⁴⁵ Dissenting Statement of Commissioner Michael O’Rielly, Title II Order (footnotes omitted).

⁴⁶ Christopher S. Yoo and Timothy Pfenninger, “Municipal Fiber in the United States: An Empirical Assessment of Financial Performance,” University of Pennsylvania Law School’s Center for Technology, Innovation and Competition (May 2017), available at: <https://www.law.upenn.edu/live/files/6611-report-municipal-fiber-in-the-united-states-an>.

⁴⁷ Other such studies are surveyed in “The Problem with Municipal Broadband and Solutions for Promoting Private Investment,” pp. 9-10.

million to build, but failed to keep up with consumer demand and technological innovation and ultimately was sold to Google for \$1. This study also pointed out how the municipal network in Tacoma, Washington, was losing about \$9 million a year and was projected to run a deficit of \$37.4 million over the next five years. Another questionable project is KentuckyWired, a statewide fiber-optic cable network that was costing taxpayers \$350 million, even though more than 150 broadband providers were offering service throughout the state of Kentucky.⁴⁸

The Chattanooga municipal broadband system is often cited as the model for government-run broadband networks, and indeed is one of the best performing of the municipal systems studied by Yoo and Pfenninger.⁴⁹ Their study points out that the Chattanooga network cost \$323 million to build, but nearly half of those costs were covered by a \$50 million subsidy from the municipal electric power operations and an additional \$111 million in federal stimulus funds. The latter is a subsidy that seems unlikely to be available for future municipal broadband projects. But even after counting only the remaining \$173 million that was not covered by subsidies, Yoo and Pfenninger find that the Chattanooga network is just barely cash-flow positive, with a rate of return so small that it will take 412 years to break even.⁵⁰ And despite this weak performance of the Chattanooga broadband provider even after receiving subsidies, it is still performing better than most other municipal broadband projects.

As Yoo and Pfenninger point out:

A closer examination of specific projects reveals that the risks and consequences are quite real. Many cities managing these projects have faced defaults, reductions in bond ratings, and ongoing liability, not to mention the toll that troubled municipal broadband ventures can take on city leaders in terms of personal turmoil and distraction from other matters important to citizens. City leaders should carefully assess all of these costs and risks before permitting a municipal fiber program to go forward.⁵¹

For cities much larger than Chattanooga, the risk of building a municipal broadband network may be even greater. These big cities already have budget problems, so they likely would struggle with the cash flows from even financially viable broadband projects. Baltimore schools are facing a serious budget crisis and major cuts for the next school year.⁵² San Francisco is struggling with huge projected budget deficits driven in large part by its public sector pension

⁴⁸ “The Dirty Dozen: Examining the Failure of America’s Biggest & Most Infamous Taxpayer-Funded Broadband Networks,” Taxpayers Protection Alliance (July 2016), available at:

<https://www.protectingtaxpayers.org/assets/files/TPA-Dirty-Dozen-Report-July2016.pdf>.

⁴⁹ For example, President Obama praised the project in a January 2015 speech promoting community broadband. Remarks by the President on Promoting Community Broadband, Cedar Falls, Iowa (January 14, 2015), available at: <https://obamawhitehouse.archives.gov/the-press-office/2015/01/14/remarks-president-promoting-community-broadband>.

⁵⁰ “Municipal Fiber in the United States: An Empirical Assessment of Financial Performance,” pp. 19-20.

⁵¹ “Municipal Fiber in the United States: An Empirical Assessment of Financial Performance,” p. 23.

⁵² Mike Hellgren, “Baltimore City Public Schools Face Largest Budget Crisis Ever,” *CBS Baltimore*, (February 23, 2017), available at: <http://baltimore.cbslocal.com/2017/02/23/baltimore-city-public-schools-face-largest-budget-crisis-ever/>.

liabilities.⁵³ And Seattle recently halted work on its streetcar system expansion due to large cost overruns in both its construction costs and projected future operating costs.⁵⁴

Some states rightly are concerned about the risk of municipal broadband projects for local and state governments and are discouraging or preventing cities from building new municipal broadband networks. Local governments generally do not have enough cash on hand to finance the project without borrowing, often using long-term bonds.⁵⁵ Some states may offer guarantees for local bonds, which shifts the burden of failure from local taxpayers to state taxpayers who received no benefits from the local broadband service. More than 20 states have responded to these concerns with laws that either prohibit municipal governments from offering broadband or that impose requirements they must meet, sometimes including a requirement that they show a sufficient lack of private alternatives.⁵⁶

Professor Yoo recently noted another problem from his experience examining municipal broadband systems that often is not recognized by proponents of municipal broadband. He points out that most of the proposals for new municipal broadband systems tend to focus on the projected costs being manageable, while paying too little attention to the demand side. In other words, these systems tend to be built on the assumption that “if we build it, they will come.” But the demand side is the part that municipalities are the most ill-equipped to address, especially in cities that already have established private broadband providers. As Professor Yoo explains:

I'll tell you right now, the problem is not generally on the cost side. . . It's on the revenue side because as anyone who's been in this business knows, especially if you're in an overbuilt situation, you're marketing the heck out of these things. You got to come up with a new advertising campaign all the time to chisel someone off who's already got service. Guess what? Elected officials were not born to do that. They're not trained to do that. It's just not what's in their blood. But they think about operating a network. That's the easy part of being in this business, and they don't realize that. And they also assume that the incumbent won't drop its price. Well, guess what? If a monopolist faces duopoly competition, any economist will tell you prices are going to go down. They don't take that into account. A lot of models are oversold. Some of them are not even pro forma

⁵³ Heather Knight, “Budget Projections Show Deficits Rising in S.F.,” *San Francisco Chronicle*, (December 3, 2016), available at: <https://www.sfchronicle.com/bayarea/article/Budget-projections-show-deficits-rising-in-S-F-10688904.php>.

⁵⁴ Brandon Macz, “Mayor Halts Center City Connector Over Capital Deficit,” *Madison Park Times*, April 3, 2018, available at: <http://www.madisonparktimes.com/Content/News/Top-Stories/Article/Mayor-halts-Center-City-Connector-over-capital-deficit/26/284/31110>.

⁵⁵ For example, a current proposal to create a municipal broadband service in Traverse City, Michigan, assumes financing with 20-year bond and that the project will break even in the 11th year. Hannah Trostle, “A String of Municipal Network Ideas: Traverse City Mulls Options,” *Community Networks* (April 17, 2017), available at <https://muninetworks.org/content/string-municipal-network-ideas-traverse-city-mulls-options>.

⁵⁶ Randolph J. May and Seth L. Cooper, “Comments of the Free State Foundation, Petition Seeking Preemption of Certain State Restriction on Municipal Broadband Networks” (August 29, 2014), available at: http://www.freestatefoundation.org/images/Muni_Broadband_Comments_082814.pdf.

financials; they're pure marketing pitch. And they're put into the bond instruments, and simply put, some of them really have no chance of succeeding at all.⁵⁷

The Presence of Municipal Broadband Discourages Private Investment

Once a municipal broadband provider begins operations, the incentives for other providers to enter the market are reduced. If other providers were considering entering the market, in most cases they will be less likely to enter, or they may delay their entry in favor of investments in other markets where they do not have to compete with a government provider. Municipal providers also have an advantage over private providers because they can impose the burden of their inefficiencies onto taxpayers. In contrast, inefficient private providers cannot continuously operate at a loss and eventually will lose their customers to more efficient competitors.

As FSF scholars have discussed previously, local governments have often created an uneven regulatory playing field that gives government-run or government-assisted broadband networks significant advantages over private providers.⁵⁸ Once a municipal provider is established, the local government managers may have a vested interest in advantaging the local provider.⁵⁹ Even if the current local government has no intention of driving off private broadband providers, private firms have no way of assessing whether future local government officials will be so benevolent. This uncertainty can discourage private investment even if government managers are not currently running the municipal government in a way that deliberately disadvantages private firms.

Local regulatory policies often favor municipal broadband providers by granting them special privileges, such as favored rights-of-way treatment and excusing municipal broadband networks from running the bureaucratic gantlet of permitting and licensing processes through which private providers must pass. And municipal providers often are excused from paying the fees that

⁵⁷ Christopher S. Yoo, "Final Thoughts and Looking Ahead: Perspectives from Three of FSF's Academic All-Stars," panel discussion at the Free State Foundation's Tenth Annual Telecom Policy Conference (March 27, 2018), available at:

http://www.freestatefoundation.org/images/March_27_2018_Tenth_Annual_Conf_Academic_Panel_Transcript_051718.pdf.

⁵⁸ Michael J. Horney, "Local Governments Should Focus on 5G Smart Cities, Not Municipal Broadband," *FSF Blog*, (February 20, 2018), available at: <http://freestatefoundation.blogspot.com/2018/02/local-governments-should-promote-5g.html>; Theodore R. Bolema and Michael J. Horney, "The Problem with Municipal Broadband and Solutions for Promoting Private Investment," *Perspectives from FSF Scholars* Vol. 12, No. 21 (June 21, 2017), available at:

http://www.freestatefoundation.org/images/The_Problem_with_Municipal_Broadband_and_Solutions_for_Promoting_Private_Investment_062017.pdf; Theodore R. Bolema and Michael J. Horney, "A Critical Assessment of the 'Community-Owned Fiber Networks: Value Leaders in America' Study," *Perspectives from Free State Foundation Scholars* Vol. 13, No. 4 (January 30, 2018), available at: http://www.freestatefoundation.org/images/The_Problem_with_Municipal_Broadband_and_Solutions_for_Promoting_Private_Investment_062017.pdf.

⁵⁹ Jerry Ellig, "A Dynamic Perspective on Government Broadband Initiatives," Reason Foundation (November 2006), available at: <http://reason.org/files/cf0c4a2d38f923ab20a190e88b7e877e.pdf>.

typically accompany the permits and license.⁶⁰ Even in the absence of a municipal provider, local regulations may discourage private broadband deployment, leaving residents with fewer providers competing for their business. Indeed, the financial analysis for the San Francisco municipal broadband proposal recognizes that certain regulations currently depress additional broadband deployment in San Francisco.⁶¹

If, as is likely, a municipal provider displaces one or more private providers that otherwise would build in the market, the net effect will be the same number or fewer broadband providers in the market.⁶² Therefore, if the problem in the local market is a lack of private broadband investment, having a municipal broadband system can drive off future private investment, and often will lead to the market having fewer providers in the long run than if private firms were encouraged to enter by virtue of sound government policy.⁶³

Municipal Broadband Is a Solution That Does Not Fit Any Current Economic Problem

Most goods and services in the United States, including in the telecommunications sector, are provided by private businesses. In general, companies that are privately owned tend to perform more efficiently than government-run entities, because they usually are more responsive to price signals and changing market conditions. The two most common situations in which government-owned and operated entities potentially may offer greater economic benefits than private businesses are for “public goods” and for “natural monopolies.” Public goods are goods that are non-rivalrous in consumption and for which the operator cannot exclude anyone who does not pay for the service. A natural monopoly is a good or service for which the fixed costs are so high that having a monopoly provider may be more efficient than having competing firms that all must charge high enough rates to cover the fixed costs.

As we discuss in a previous *Perspectives*, broadband is not a public good, as the term has been used to justify other government-provided services, because both private and municipal broadband providers charge customers for the service and exclude those who do not pay.⁶⁴ Thus, broadband is very different from police protection, courts, public parks, and local roads, which

⁶⁰ Randolph J. May and Seth L. Cooper, “Comments of the Free State Foundation, Petition Seeking Preemption of Certain State Restriction on Municipal Broadband Networks” (August 29, 2014), pp. 1-3, available at: http://www.freestatefoundation.org/images/Muni_Broadband_Comments_082814.pdf.

⁶¹ Financial Analysis of Options for a Municipal Fiber Optic Network for Citywide Internet Access, March 15, 2016, available at: <https://sfbos.org/sites/default/files/FileCenter/Documents/55357-FAC1.pdf>.

⁶² For example, when Traverse City, Michigan, was considering a municipal broadband project in 2017, a private company serving other nearby markets complained that it was forced to abandon plans to enter the Traverse City market when the city added so many restrictions and requirements that the investment no longer made sense. Michael Van Beek and Jarrett Skorup, “Utility Pushes Risky Taxpayer-Funded Initiative,” *Traverse City Record-Eagle* (Jun 25, 2017), available at: http://www.record-eagle.com/opinion/op-ed-utility-pushes-risky-taxpayer-funded-initiative/article_87bdf088-5ff6-5a7a-abe6-c0c11bbdf518.html.

⁶³ “The Problem with Municipal Broadband and Solutions for Promoting Private Investment,” p. 6.

⁶⁴ “The Problem with Municipal Broadband and Solutions for Promoting Private Investment,” pp. 5-6; Theodore R. Bolema and Michael J. Horney, “A Critical Assessment of the ‘Community-Owned Fiber Networks: Value Leaders in America’ Study,” *Perspectives from Free State Foundation Scholars* Vol. 13, No. 4 (January 30, 2018), available at: http://www.freestatefoundation.org/images/The_Problem_with_Municipal_Broadband_and_Solutions_for_Promoting_Private_Investment_062017.pdf.

for many public policy reasons should not exclude those who do not pay. To get around the problem of no one having the incentive to pay for a public good because they will not be excluded for non-payment, governments typically fund the operation through various types of compulsory taxes that are not necessarily related to how much service residents use.

Based on the natural monopoly justification, many municipalities offer electricity, natural gas, water, or sewage utilities. Notably, in other markets these services are provided by private businesses, so status as a “natural monopoly” does not in all cases make a government utility the best way to provide the good or service. If a “natural monopoly” service is not provided by the municipality, it is often instead provided by a single firm regulated as a public utility because it possesses monopoly power.

Some municipal broadband proponents try to argue that broadband service is like these natural monopoly services provided by governments, and therefore also should be subjected to government ownership. The ACLU report, for example, avoids using the term “natural monopoly” but nonetheless claims that Internet access should be provided by governments because it is a “necessity” like water and electricity:

The internet has become a necessity, like traditional utilities such as water and power. Internet service is necessary for engaging meaningfully with society: to become educated, to participate in political and professional communities, and to seek help and companionship from those with similar interests or problems.⁶⁵

But treating a service like a “natural monopoly” normally is not a preferred policy option, because it prevents customers from enjoying the benefits of having multiple providers competing for customers. The goal for local officials in these and other cities should be to encourage even more competition from multiple broadband providers.

Another economic argument often made for municipal broadband is that too few private providers are making broadband available, which suppresses business opportunities for entrepreneurs and individuals who depend on reliable broadband access.⁶⁶ This is a positive externality argument.

The contention is that suppliers are producing less than is socially optimal because they are not considering the spillover effects their decisions have on other parties. In this case, the spillover is the economic benefits that may arise from businesses, entrepreneurs, schools, and other parties being able to use Internet access to grow their own businesses and hire more employees.

As we discuss in more detail in our other paper, economists normally recommend that if governments respond at all to positive externalities, they do so by encouraging private parties to increase their output rather than by encouraging governments to enter the market in competition

⁶⁵ Jay Stanley, “The Public Internet Option: How Local Governments Can Provide Network Neutrality, Privacy, and Access for All,” American Civil Liberties Union (March 29, 2018), p. 4, available at: https://www.aclu.org/sites/default/files/field_document/aclu_municipal_broadband_report.pdf.

⁶⁶ See, e.g., “Municipal Networks and Economic Development,” Community Networks (visited May 24, 2018), available at <https://muninetworks.org/content/municipal-networks-and-economic-development>.

with private businesses. For example, to attract the new employer that would create new jobs in the area, a municipality may offer property tax breaks, direct subsidies, or help with regulatory requirements, like favorable zoning changes. The municipality may also offer to improve roads or make other municipal improvements as part of a package to get the employer to commit to moving to the community.⁶⁷

However, in Baltimore, San Francisco, and Seattle, most residents have access to three or more broadband providers. As such, the positive externality argument, which is problematic for unserved markets, is even more problematic for big city markets.

VII. Promote Competition and Emerging Broadband Technologies Instead of Costly Municipal Networks

Dynamic and intermodal broadband competition, which is present in the big cities that are proposing municipal broadband networks, reduces any incentive of broadband providers to engage in violations of net neutrality principles or to infringe on free speech or privacy rights. However, the presence of a municipal broadband provider can harm local competition and actually could create a concentrated marketplace, increasing the possibility of anticompetitive conduct or consumer harm.⁶⁸

As acknowledged by big city municipal broadband proponents, the best way for local governments to ensure that residents are protected from network neutrality and privacy violations is to increase the number of broadband choices for consumers. When consumers have more choices for broadband providers and technologies, the ability to switch providers discourages anticompetitive behavior and increases the quality of service. Because municipal networks can cause financial instability and discourage local competition, the best way to create more broadband choices for consumers is to reduce regulatory barriers that stifle private investment and deployment. In order to combat potential actions of consumer harm, local governments should encourage the deployment of private broadband networks to create additional competition in local broadband markets so that residents have more choice and more ability to reject any broadband providers due to poor service or infringement on speech or privacy rights.

Technological innovation has increased the capabilities and deployment of wireless technologies, like satellite, fixed wireless, and 5G mobile wireless, and these emerging broadband services are providing viable residential alternatives for underserved consumers. These technologies can deliver next-generation broadband to underserved communities, and the speeds and number of services associated with these technologies will continue to increase. Whether in a small town, unserved by private broadband, or in a big city where additional competition would benefit consumers, local governments should encourage the deployment of low-cost wireless broadband technologies, like satellite, fixed wireless, or 5G mobile broadband.

⁶⁷“The Problem with Municipal Broadband and Solutions for Promoting Private Investment,” p. 5-6; *See also*, “A Critical Assessment of the ‘Community-Owned Fiber Networks: Value Leaders in America’ Study.”

⁶⁸“The Problem with Municipal Broadband and Solutions for Promoting Private Investment,” p. 7-8.

Satellite Broadband

In the past year, the FCC has approved multiple deployment requests from satellite broadband providers, including OneWeb, Space Norway, Telesat, and SpaceX.⁶⁹ And with the FCC's new rules facilitating deployment of next-generation satellite broadband systems,⁷⁰ OneWeb said that it is investing \$1.5 billion and will offer low-latency broadband with download speeds of 50 Mbps in Alaska by 2019.⁷¹ Viasat, an established satellite broadband provider, announced that it has started offering nationwide, unlimited access with download speeds up to 100 Mbps.⁷² Furthermore, SpaceX has announced that it plans to launch nearly 12,000 satellites by 2024, spurring even more competition in the satellite broadband market.⁷³ And the FCC still has pending Ligado's application to provide services primarily to enterprise customers using satellite capacity in combination with terrestrial networks.⁷⁴

As technological innovation continues, satellite broadband services should not be categorized as last-resort alternatives for underserved consumers. Instead, its capabilities as a next-generation broadband technology should be acknowledged. Underserved consumers are now in a position to enjoy satellite services for their relatively low costs and broad reach into areas not served by wireline broadband. This means that broadband ISPs have little incentive or ability to benefit economically from blocking, throttling, or otherwise unreasonably discriminating against content since, according to the Commission's own report data, 99% of U.S. consumers enjoy a choice among competing mobile and fixed broadband ISPs.⁷⁵

Although most residents of these big cities have plenty of broadband competition, local governments should continue to endorse the capabilities of satellite broadband as a viable alternative to the extent there are underserved consumers.

Fixed Wireless

Another technology that should receive more attention in underserved areas is fixed wireless broadband. Fixed wireless providers deliver broadband access to consumers at fixed locations

⁶⁹ Ajit Pai, "Statement on SpaceX Satellite Broadband Application," (February 14, 2018), available at: https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0214/DOC-349224A1.pdf.

⁷⁰ Michael J. Horney, "FCC Paves the Way for More Satellite Broadband Deployment." *FSF Blog*, (September 27, 2017), available at: <http://freestatefoundation.blogspot.com/2017/09/fcc-paves-way-for-more-satellite.html>.

⁷¹ Andy Pasztor and Mayuni Negishi, "Softbank to Invest Around \$500 Million More in OneWeb Satellite-Internet Venture," *The Wall Street Journal*, (December 11, 2017), available at: <https://www.wsj.com/articles/softbank-to-invest-around-500-million-more-in-oneweb-satellite-internet-venture-1512990003>.

⁷² Michael J. Horney, "Viasat Is offering Satellite Broadband Speeds of 100 Mbps," *FSF Blog*, (March 5, 2018), available at: <http://freestatefoundation.blogspot.com/2018/03/viasat-is-offering-satellitebroadband.html>.

⁷³ Statement of Patricia Cooper, Vice President, Satellite Government Affairs, SpaceX, Before the Committee on Commerce, Science & Technology, United States Senate, (May 3, 2017).

⁷⁴ Seth L. Cooper, "Satellite Broadband Services Will Enhance Competition and Reach New Consumers," *FSF Blog*, (March 14, 2018), available at: <http://freestatefoundation.blogspot.com/2018/03/satellitebroadband-services-will.html>.

⁷⁵ FCC, Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, WT Docket No. 16-137, Twentieth Report ("Twentieth Wireless Competition Report") (September 27, 2017), at 80, Table III.D.i.

through wireless transmitters on towers interconnected by unlicensed or licensed spectrum. Like mobile wireless, these towers are connected to fiber backhaul networks. Consumers generally receive access at their locations through a Wi-Fi router, creating a fixed connection with download speeds up to 100 Mbps.⁷⁶ Fixed wireless subscriptions are now projected to double from 2016 to 2021.

The implementation of 5G wireless technology, with at least ten times the speed of 4G, will advance the capabilities of fixed wireless networks. Verizon announced its plans to use 5G wireless technology to offer fixed wireless service in a select group of cities throughout the U.S. by the end of 2018.⁷⁷ Similar to 5G mobile wireless (discussed in the section below), if local governments adopt small cell legislation and advance the deployment of 5G technology, fixed wireless providers will be able to offer high-speed networks, increasing broadband access for underserved consumers.

As Professor Yoo recently noted from his study of localities considering municipal broadband systems, there are often alternatives. Fixed wireless in particular provides a much more cost-effective solution for municipalities that want to “do something”:

And in fact, there are a lot of areas of the U.S. that are underserved, and we're not just talking about Indian reservations, but counties. And we're studying western Massachusetts, counties in Arkansas. There are a lot of places that have real challenges. The two things that struck me about it is how the deployments that are working in a lot of these places that have some problems are very unorthodox. They looked very different than the ones before. Many of them are fixed wireless deployments, sometimes WISPs [wireless Internet services providers] where they're using unlicensed spectrum.⁷⁸

5G Mobile Wireless

The capabilities and deployment of mobile broadband also have increased significantly. According to the *Twentieth Wireless Competition Report*, in 2016 4G mobile broadband was available to 99.8% of Americans and 96.6% of Americans had access to three or more 4G providers. And the average national download speed was 23.5 Mbps, just shy of the FCC's upwardly-revised definition of broadband of 25 Mbps/3 Mbps. With 5G technology just around the corner, the increasing capabilities and speeds of mobile broadband may well serve as a sufficient residential connection for many underserved Americans.⁷⁹

⁷⁶ Michael J. Horney, “Fixed Wireless Broadband Could Help Reach More Rural Consumers,” *FSF Blog*, (November 24, 2017), available at: <http://freestatefoundation.blogspot.com/2017/11/fixed-wirelessbroadband-could-help.html>.

⁷⁷ Michael J. Horney, “Verizon Plans to Offer Fixed Wireless Residential Broadband,” *FSF Blog*, (December 4, 2017) available at: <http://freestatefoundation.blogspot.com/2017/12/verizon-plans-to-offerfixed-wireless.html>.

⁷⁸ Christopher S. Yoo, “Final Thoughts and Looking Ahead: Perspectives from Three of FSF's Academic All-Stars,” panel discussion at the Free State Foundation's Tenth Annual Telecom Policy Conference (March 27, 2018), available at: http://www.freestatefoundation.org/images/March_27_2018_Tenth_Annual_Conf_Academic_Panel_Transcript_051_718.pdf.

⁷⁹ *Twentieth Wireless Competition Report*, at 85.

When 5G wireless technology is deployed, “smart cities” will be able to enjoy more efficient and effective use of local government services such as energy, utilities, transportation, and public safety, saving the cities millions of dollars.⁸⁰ 5G wireless technology is projected to create \$275 billion in investment, 3 million jobs, and \$500 billion in gross domestic product throughout the United States, which should be much more attractive to local governments than the financial instability often created by municipal broadband projects. These projected net economic benefits of 5G-enabled “smart cities” outweigh the net economic costs of many municipal broadband networks.

Instead of imposing long-term debt on residents by promoting municipal broadband projects, local governments should promote 5G small cell deployment. By reducing pole attachment fees, allowing the use of public rights-of-ways, and accelerating approval processes, states and municipalities can streamline the deployment of 5G technology in local areas. Not only will this relieve residents from the tax burden imposed by a municipal network, but it will facilitate a next-generation network which will provide at least the same consumer benefits as municipal broadband with less financial risk to local governments.⁸¹

Conclusion

Recently, and particularly since the Federal Communications Commission adopted its *Restoring Internet Freedom Order* in December 2017, big cities and other municipalities that have plenty of established private broadband options have begun to consider building government-run networks to compete against private broadband providers. Significantly, arguments for big city municipal broadband are very different from the previous arguments that municipal broadband is needed because markets are unserved or underserved and local governments can fill the void with government-run broadband. Instead, proponents have been arguing that even where multiple private providers are in the market, government-run broadband is needed because private broadband providers are the “wrong kind” of providers in that they might not operate according to “net neutrality” principles or might fail to protect speech and privacy rights of their users.

Local governments have better options available to them. They instead should try to promote more competition among broadband companies so that their residents have even more choice among providers and more ability to switch if they believe broadband providers perform poorly. Public policy at the federal, state, and local level should focus on promoting broadband investment across all technologies by reducing barriers that stand in the way and consider other ways they can encourage investment by private providers.

Moreover, as wireless and satellite broadband networks continue to emerge as practical alternatives to wireline broadband, local governments will struggle even more with the debt burden created if they build and operate a government-run broadband utility. Given that the big cities considering new municipal broadband projects already have budget problems, they likely

⁸⁰ Michael J. Horney, “Local Governments Should Focus on 5G Smart Cities, Not Municipal Broadband,” *FSF Blog*, (February 20, 2018), available at: <http://freestatefoundation.blogspot.com/2018/02/localgovernments-should-promote-5g.html>.

⁸¹ “Local Governments Should Focus on 5G Smart Cities, Not Municipal Broadband.”

would struggle with the cash flows from even financially viable broadband projects. Even if only some significant proportion of municipal broadband subscribers switch to satellite or wireless broadband networks to meet their needs cost-effectively, this could threaten the already unstable financial viability of municipal broadband agencies, leaving their local or state governments on the hook for future losses.

Municipal broadband networks consistently have failed to live up to expectations. There is little reason to believe the results will be any different in larger markets that already have multiple providers. The poor financial performances by actual government-run broadband systems have left many local governments facing defaults, reductions in bond ratings, and ongoing liabilities. Moreover, as shown by their terms of service that threaten to block subscriber content that the government managers find offensive, along with weak protections of users' privacy, government-run broadband utilities have poor track records in promoting the "net neutrality" values their proponents claim to support. Based on this track record, there is no reason to believe that government-run utilities will be more "net neutral" than privately-run broadband providers, and good reason to expect them to perform worse than their private counterparts.

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Further Readings

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