

STATES WITH RESTRICTIONS TO MUNICIPAL BROADBAND DEPLOYMENTS AND
THE EFFECTS OF THE RESTRICTION

by

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States with Restrictions to Municipal Broadband Deployments and the Effects of the Restriction

Thesis directed by Prof. Dr. David Reed

Municipal broadband implementations are restricted in some way by 19 states, with other states proposing restrictions. In analyzing the different state laws, there are three categories of restrictions: bans on providing services, administrative restrictions, and economic restrictions. The most common restriction is to require municipalities to create separate funds for communication services, there are 21 different economic restrictions implemented. Most states implement more than one type of restriction and do not fall into just one category. The effect of the restrictions varies depending on the market conditions and the status of the LEC (Local Exchange Carrier), and the number of municipal electric companies present within the state. The restrictions in most states passed after the first large scale municipal network was proposed. This made it difficult to measure the effect of the restrictions on either broadband adoption or fiber to the home (FTTH) rates.

Dedication

To my family, whose love and support has sustained me this far.

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Chapter 1

Introduction

1.0 Overview

Broadband has become a requirement for today's society. Broadband availability determines the economic viability, resilience and growth factors of a municipality, is needed for utilitarian uses like banking, education, medical needs and employment and is considered 'very important' or 'somewhat important' by 85% of broadband subscribers.¹

The Federal government considers broadband adoption so important and so tied to economic growth, that the American Recovery and Reinvestment Act of 2009 appropriated \$4.7 billion dollars solely for the Broadband Technologies Opportunity Program² in the midst of a global economic crisis.³

Individual states track broadband availability and adoption because they understand that every 1% increase in broadband adoption equates to an approximate

¹ John Horrigan, 'Home Broadband Adoption 2009', Pew Internet & American Life Project, 2009 <<http://broadband.masstech.org/sites/mbi/files/documents/publications-reports/pew-internet-home-broadband-adoption-2009.pdf>> [accessed 26 October 2013].

² Eighty-Fourth Congress, 'First Session', Public Law, 11 (1890) <http://ecommons.med.harvard.edu/ec_res/nt/A3B4A28D-987B-4271-B003-5A877B4F4E38/arrabookmarks.pdf> [accessed 26 October 2013].

³ 'The Recovery Act' <http://www.recovery.gov/About/Pages/The_Act.aspx> [accessed 26 October 2013].

0.2-0.3% increase in employment.⁴ The National Telecommunications and Information Administration (NTIA) launched a program in 2009 that incentivized individual states to gather data to track broadband availability with the State Broadband Data and Development Grant Program, which all fifty states have participated in and developed twice yearly measurement procedures for broadband availability, deployment, and adoption.⁵

In fact the New Hampshire legislature in the Findings and Purpose section of proposed 2013-HB-286 stated the following:

*"I. Universal, easy, and affordable access to high speed Internet service in New Hampshire is essential for economic development, job creation, small business growth, state, federal, and local service delivery, and educational opportunities."*⁶

1.1 Broadband Definition

What is broadband? One problem with measuring broadband is that it is not easily defined.

⁴ Robert W. Crandall, William Lehr and Robert Litan, 'The Effects of Broadband Deployment on Output and Employment: A Cross-Sectional Analysis of US Data', 2009 <<http://dspace.cigilibrary.org/jspui/handle/123456789/5741>> [accessed 26 October 2013].

⁵ 'State Broadband Initiative | BroadbandUSA - NTIA' <<http://www2.ntia.doc.gov/SBDD>> [accessed 29 October 2013].

⁶ 'Bill Text: NH HB286 | 2013 | Regular Session | Introduced | LegiScan' <<http://legiscan.com/NH/text/HB286/id/688931>> [accessed 26 October 2013].

Is broadband the method of delivery to the end-user (e.g., Fiber, coax, twisted-pair, or wireless)? When the FCC (Federal Communications Commission) first began issuing Broadband Progress reports in 1999,⁷ measuring fiber to the end-user or Fiber to the Home (FTTH) was not even a tracked measurement. It was not until the Third Broadband Progress Report in 2002⁸ that this measurement became tracked. Wireless is one method of delivery tracked by the progress reports and showing increasing availability and speed. The Eighth Broadband Progress Report indicates that as of January 2012, LTE networks (combined) now cover over 211 million people,⁹ and now includes results from ViaSat, a satellite services provider. ViaSat recently launched a new generation of satellites and their improved performance has increased as much as a 100 times.¹⁰

Is broadband a measurement of speed? In the First through the Third Broadband Progress Reports (1999- 2002), the term ‘Advanced Services’ described “services and facilities with an upstream (customer-to-provider) and downstream (provider-to-customer) transmission speed of more than 200 kbps in this Report.”¹¹ This was the

⁷ ‘First Broadband Progress Report | FCC.gov’ <<http://www.fcc.gov/reports/first-broadband-progress-report>> [accessed 29 October 2013].

⁸ ‘Third Broadband Progress Report | FCC.gov’ <<http://www.fcc.gov/reports/third-broadband-progress-report>> [accessed 27 October 2013].

⁹ ‘Eighth Broadband Progress Report | FCC.gov’ <<http://www.fcc.gov.edgekey.net/reports/eighth-broadband-progress-report>> [accessed 27 October 2013].

¹⁰ ‘Measuring Broadband America - February 2013 | FCC.gov’ <<http://www.fcc.gov/measuring-broadband-america/2013/February>> [accessed 27 October 2013].

¹¹ ‘Third Broadband Progress Report | FCC.gov’.

speed that was measured until the Fourth Report (2003) when the definition of Advanced Services was pulled from the Telecommunications Act of 1996 to mean “high speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics and video telecommunications using any technology.”¹² The FCC then began to measure multiple tiers of broadband services from providers, instead of defining one tier as ‘broadband,’ as the definition has led to endless debate and the inability of the Commission to determine one speed as ‘broadband’. That being said, the generally recognized standard from the National Broadband Plan is now 4 Mbps in the downstream direction and 1 Meg upstream.

1.2 Restrictions on Broadband

With the apparent collective agreement on the importance of broadband in today’s society, the fact that there are 19 states (Figure 1) that restrict the right of a municipality to provide telecommunications services may come as a surprise. Why make a determination of the importance of broadband, incentivize it, track the availability and adoption, and then restrict who may supply it to customers?

¹² 47 U.S.C. § 157 *nt*

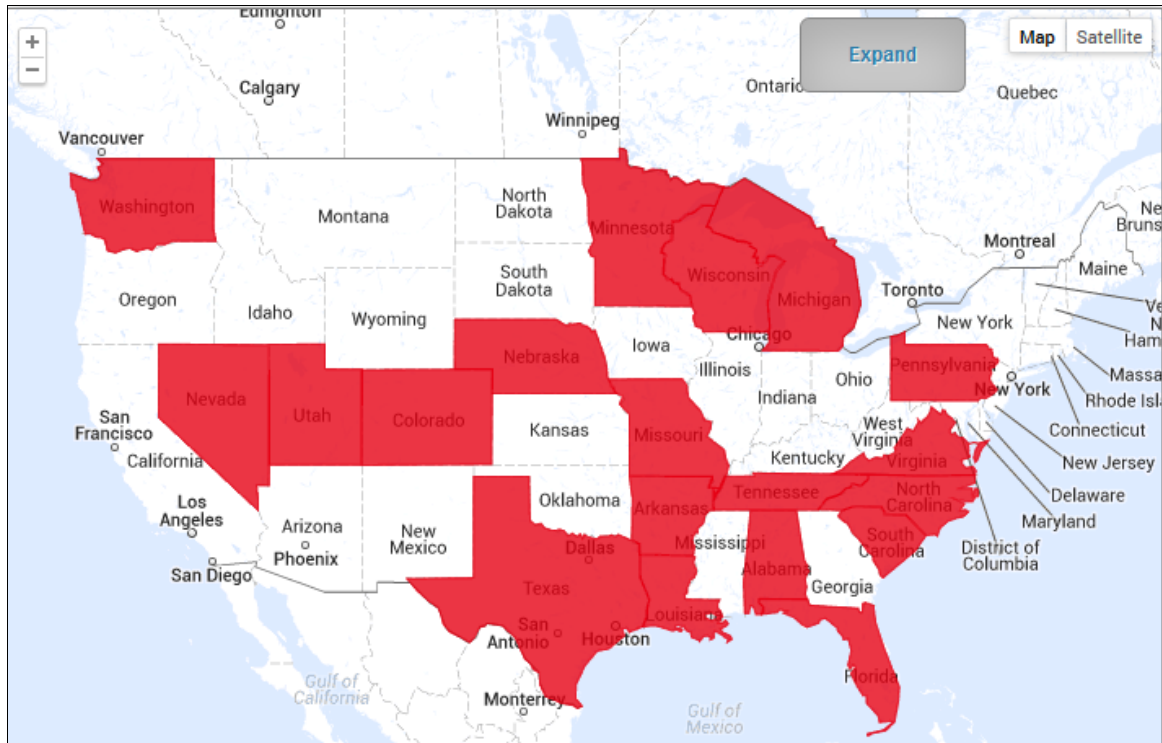


Figure 1: States with Restrictions on Municipal Broadband¹³

There are 19 states that have passed laws restricting municipalities from owning and operating telecommunications/broadband networks. These laws have varying requirements and restrictions. Most impose economic restrictions that are so burdensome that the municipality cannot even consider undertaking the deployment of a new municipal utility. The breadth in variation of the restrictions complicate further the ability of a community to measure, understand the current status of broadband, the needs of the community and the solutions to those needs. These restrictions appeared

¹³ 'Community Network Map | Community Broadband Networks'
<<http://www.muninetworks.org/communitymap>> [accessed 26 October 2013].

initially in 1991 with Minnesota (See Table 1), began again 1997 and still continue today with activity in 2013 by the state of Georgia.¹⁴

Table 1: Initial Year of laws Restricting Municipal Broadband Deployments

1991	1997	1999	2000	2001	2002	2003	2004	2005	2011
Minnesota	Missouri	Tennessee	Alabama	Utah	South Carolina	Virginia	Louisiana	Colorado	Arkansas
	Nevada					Wisconsin	Pennsylvania	Florida	North Carolina
	Texas						Washington	Michigan	
								Nebraska	

1.3 Problem Statement

What states have restrictions on municipal broadband, what are the restrictions, and what has been the effect on the states broadband availability?

1.4 Research Methodology

This thesis offers a qualitative analysis, organizing details of legislative restrictions to municipal broadband implementations; attempts to categorize the restrictions implemented in these 19 states; interpret the differences between the states; identify patterns in the data; and attempt to measure the effect on the telecommunications industry in the state. The laws will be analyzed, the types and categories of restrictions defined and the effect of the laws on the broadband deployment, adoption and competition in those states. In analyzing the legislation from all 19 states, three

¹⁴ 'SB 313 2011-2012 Regular Session' <<http://www.legis.ga.gov/legislation/en-US/Display/20112012/SB/313>> [accessed 29 October 2013].

categories have emerged: bans on providing services; administrative restrictions, and economic restriction.

A restriction is categorized as a ban if the legislation specifically stated that providing the service was prohibited or if another restriction was so limiting as to make it impossible to provide service. Some examples of the language used are: “A government entity may not provide, directly or indirectly, basic local exchange service.”; “A municipality or municipal electric system may not offer for sale to the public...” and “An agency or political subdivision of the state that is not a public power supplier shall not provide on a retail or wholesale basis any broadband services.” Virginia does not prohibit explicitly the sale of video programming service, but does require that any entity offering it be profitable in one year. This is an economic restriction, but is also listed as a ban because it is impossible for any municipality to meet that requirement.

A restriction was categorized as an administrative restriction if it required action, duties or administration by municipal officials but was not specifically related to budgets, taxes, expenditures, fees, etc. Referendums require administrative action to carry out even though there may be an associated economic cost associated to them, yet they were still categorized as an administrative restriction.

An economic restriction was any restriction that was directly relating to a monetary control of funds, budgets, taxes, fees, subscriber rates, transfers and

appropriations. Some language used in economic restrictions are; “a municipality shall allocate to the costs of providing any of the services...”; “A municipal electric system shall establish a separate division to deliver any of the services authorized by this part...”; “A municipal electric system providing any of the services authorized by this part shall establish and charge rates...”; etc.

It is unusual for a state to just fall into one of the restrictive categories.

Chapter 3 will define and break down these categories further.

1.5 Overview and Outline of the Thesis

The first chapter will present the background of broadband. This will include the definition of broadband as defined by the FCC (Federal Communications Commission), deployment, availability, and subscription factors.

The second chapter will present the development of municipal broadband and some of the implementations of deployed successful networks and services.

The third chapter will focus on the states that have passed laws restricting the adoption of municipal broadband. The development of these laws, the administrative and economic barriers that have been erected to prevent local communities from investing in 21st century communications networks for their residents.

The fourth chapter will present the status of broadband in states that have these restrictive laws.

The fifth chapter concludes the thesis with major findings and recommendations for further analysis, research and review.

Chapter 2

History of Municipal Broadband and Current Implementations

2.1 History of Municipal Broadband

The development of municipal broadband likens to the development of rural municipal electrical systems. Electricity grew from an innovation to a commodity with smaller rural areas unable to attract a private investor and the need to provide the service themselves the only option available.¹⁵ Rural municipal electric companies were especially common in areas with populations of 5,000 or less; at the height of public power in 1923 there were over 3,000 public power providers.¹⁶ Today that number is smaller with more than 2,000 public power providers serving 47 million people and providing electricity to about 14% of the nation's electrical customers.¹⁷

Municipal broadband developed in a similar manner. Rural telecommunications providers have been unable or unwilling to upgrade current infrastructure to support broadband speeds and connectivity.¹⁸ The capital intensive nature of the infrastructure

¹⁵ Steven C. Carlson, 'Historical, Economic, and Legal Analysis of Municipal Ownership of the Information Highway, A', Rutgers Computer & Tech. LJ, 25 (1999), 1.

¹⁶ Carlson.

¹⁷ 'American Public Power Association - About'

<<http://www.publicpower.org/about/index.cfm?navItemNumber=37583>> [accessed 3 November 2013].

¹⁸ Eric Null, 'Municipal Broadband: History's Guide', 2012

<http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1978220> [accessed 3 November 2013].

required, combined with the smaller population and lack of concentration of rural areas created the same dilemma for broadband as electricity; 'Provide it yourself or go without'.

Providing broadband in rural locations where there are no willing providers is one scenario. A municipality deciding to provide services when one or more local providers already exist is another situation. Municipal electric providers began when they could not find a private investor and the electric utility systems developed as monopolies. Some municipal implementations are entering into a commercial, highly competitive market with multiple providers and competition is for a governmental organization.¹⁹ Instead of the 100% market share that came with a municipal electric system, a typical market penetration rate would be ~30%.²⁰

¹⁹ M. J. Santorelli, 'Rationalizing the Municipal Broadband Debate', ISJLP, 3 (2007), 43.

²⁰ Stockton, Dave and Neil Shaw. "Broadband Feasibility Study for Longmont Power and Light." Longmont City Council Meeting, Longmont, CO. 14 May 2013.

Communities that have a municipal electric utility are also in a unique position to be able to take advantage of a municipal broadband service. Some of the same infrastructures needed for an electric utility are also necessary for a broadband utility:

- 1) Internal customer service and billing functions
- 2) Outside plant equipment
- 3) Rights-of-way access
- 4) Infrastructure provisioning and knowledge.

These infrastructure requirements are so similar; some states that restrict municipal broadband have provided an exception for municipalities that provide electricity.

Within the electricity industry the advent of 'smart grid' technologies is in fact requiring broadband capability. Smart Grid technologies are improvements to generation, transmission, and distribution facilities of the electrical system to improve performance, ensure reliability, take advantage of renewable energies, reduce carbon footprints, and introduce efficiencies.²¹ Telecommunications facilities are part of this and many municipalities that have municipal electrics are deploying these new smart grid technologies using FTTP (fiber-to-the-premise) or WiMax technologies.²² It is a logical step to providing user services when the infrastructure already exists with the electric utility.

²¹ *'The Smart Grid: An Introduction | Department of Energy'*

<<http://energy.gov/oe/downloads/smart-grid-introduction-0>> [accessed 3 November 2013].

²² *Andrew K. Wright, Paul Kalv and Rodrick Sibery, 'Interoperability and Security for Converged Smart Grid Networks', in Grid-Interop Forum, 2010*

<http://www.smartgridnews.com/artman/uploads/1/wright_gi10.pdf> [accessed 3 November 2013].

2.2 Developed Models

There are three main levels to the business models that have developed. The access, services and content level provides the video programming service, internet, or telephony service. The network active equipment controls the speed, connectivity, and backbone of a network. The network passive equipment is the fiber itself and the ducts/poles that the fiber passes through, it can also include wireless equipment, including antennas and microwave dishes. All these levels can be provided by the public provider.

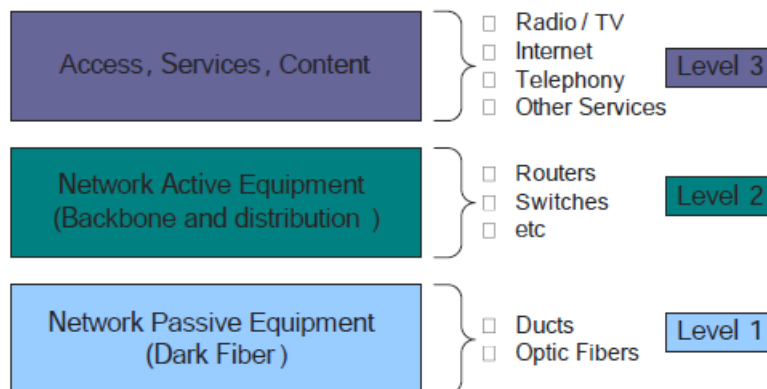


Figure 2: Layers of Service for Municipal Business Models²³

There are four main business models that have developed for municipalities: dark fiber, open access, public-private partnerships, and services provider.²⁴

²³ C. Bouras and others, 'Business Models for Municipal Broadband Networks', Encyclopedia of Information Science and Technology, 2008, 457–465.

²⁴ Bouras and others.

2.2.1 Dark Fiber

Most municipalities have their own technological needs, they may already have fiber routes throughout their own city and any excess capacity may easily be leased. Some of the states restricting municipal broadband allow an exemption for leasing of excess capacity. Dark fiber is providing only the fiber optic lines, but no equipment or services with the fiber. This is the level of service requiring the least amount of commercial and technical expertise, but also provides the least amount of benefit to a municipality. Dark fiber leases are usually only economical for large businesses, so municipalities do not expand current fiber infrastructure, only provide leases with existing infrastructure. While this can be a source of additional revenue, it does not expand residential broadband availability and adoption.

2.2.2 Open Access

The open access model is the municipality providing only the infrastructure on a wholesale-only basis to allow multiple service providers' access to end users.²⁵ This model is typically chosen only when policy restrictions force municipalities to choose

²⁵ William Lehr, Marvin Sirbu and Sharon Gillett, 'Broadband Open Access: Lessons from Municipal Network Case Studies', in Proceeding of the TPRC conference, 2004
<http://people.csail.mit.edu/wlehr/Lehr-Papers_files/Lehr%20Sirbu%20Gillett%20Broadband%20Open%20Access.pdf> [accessed 3 November 2013].

this option, as this model is the hardest to sustain economically as it does not include subscriber revenue.²⁶

2.2.3 Public – Private Partnerships (PPP)

This business model incorporates the municipality entering into an exclusive agreement with one ‘partner’ company. A PPP may incorporate any combination of services, maintenance of the network and equipment. PPPs are beneficial because of the simplicity of working with one partner, but municipal authorities may be required to maintain a telecommunications network that is not within their expertise if the agreement leaves the broadband network equipment as part of the municipality’s responsibilities.²⁷

2.2.4 Services Provider

Becoming a full services provider is the most ambitious model for a municipality to consider and involves full public control of all levels of the network. The municipality competes directly with private organizations that may currently be providing services to businesses and residents. This model is the most challenging as the municipal entity may lack the expertise to provide the services, may require substantial infrastructure investments, and may struggle to afford the extensive capital required to build out a network.

²⁶ *Lehr, Sirbu and Gillett.*

²⁷ *Bouras and others.*

2.3 Examples of Current Implementations

There are advantages and disadvantages to all four business models that have developed. Table 2 cites some example municipalities that have implemented all four business models. All of these examples are in states that have implemented restrictions to municipal broadband; these restrictions inhibit the business models a municipality may consider.

Table 2: Examples of Municipal Broadband Deployments with all Four Models²⁸

Municipal Business Models:	Examples of Cities Providing this service:	Description:	Advantages:	Disadvantages:
Services Provider	Chattanooga, TN	Municipality provides connectivity to the home as well as any services (e.g. Internet, cable video programming service, and telephony).	Competition is increased. Local control over last mile connection and network upgrades.	Municipal authority needs greater expertise. Municipal authority needs greater commercial expertise. Financial risk is great to municipal authority.
Public - Private Partnership	Seattle, WA	Municipality signs a partnership agreement with one company to exclusively provide some of the services and maintenance of a network.	Competition is increased. May retain local control over last mile connection and network upgrades.	Financial risk is great to municipal authority. Having one exclusive partner is a risk.
Open Access	UTOPIA Consortium, UT	Municipality provides the connectivity and signs agreements with many providers to supply the services. Customers can choose between providers.	Local control over last mile connection and network upgrades. May have multiple service providers, providing options to customers.	Financial risk is great to municipal authority. Revenue models are hard to justify without services to end user.
Dark Fiber	Lakeland, FL	Municipality provides the fiber and any and all connectivity. Network switches and connectivity to ISP (Internet Service Provider) is the responsibility of the customer.	Municipalities may develop a revenue stream from excess capacity. Businesses may benefit from lower costs and greater options.	Typically not all areas are covered, just areas where infrastructure already exists. Complaints from private firms that businesses and anchor institutions are targeted.

²⁸ Bouras and others.

2.3.1 Dark Fiber

The City of Lakeland, FL began replacing old copper lines for Lakeland Electric with fiber optic connections in the mid-1990s. Shortly after, the school district approached Lakeland Electric with a request to connect the schools together through fiber optics.²⁹ The city now leases to the school district, local medical facility and the State of Florida for its transportation system. It also started implementing a new smart grid project.³⁰ Dark fiber now contributes about \$225,000 to the general fund.³¹ Florida has three administrative restrictions and eight economic restrictions. Municipalities providing these services are often criticized because they capture the large anchor institutions in a community that private providers count on.

2.3.2 Open Access

UTOPIA (Utah Telecommunications Open Infrastructure Agency) is a multi-governmental organization that has joined together to provide an open access model where the member municipalities can provide fiber to the home and internet service providers can supply services to customers.³² UTOPIA is one reason that Utah has a

²⁹ 'Dark Fiber Paying Off in Florida's Lakeland | Community Broadband Networks' <<http://www.muninetworks.org/content/dark-fiber-paying-floridas-lakeland>> [accessed 19 November 2013].

³⁰ 'Lakeland Electric > Your Utility > Smart Grid Initiative' <<http://www.lakelandelectric.com/YourUtility/SmartGridInitiative.aspx>> [accessed 19 November 2013].

³¹ 'Dark Fiber Paying Off in Florida's Lakeland | Community Broadband Networks'.

³² 'UTOPIA' <<http://www.utopianet.org/about-utopia/>> [accessed 18 November 2013].

20.9% FTTH deployment rate, 5.5% above the national average of 15.4%.³³ Utah imposes 10 economic restrictions and two administrative restrictions on municipalities that provide services, so implementing an open access model is an alternative approach.

2.3.3 Public-Private Partnership (PPP)

The mayor of Seattle has been interested in promoting broadband in his city for many years and the city announced in December 2012 that it has signed a partnership agreement with Gigabit Squared to develop a FTTH broadband network.³⁴ The network will utilize the City of Seattle's excess fiber capacity, and will be FTTH in 12 neighborhoods initially and utilize wireless methods to deploy rapidly into other areas.³⁵ The state of Washington allows municipalities to provide services, however they ban public utility districts from providing services.

2.3.4 Services Provider

Chattanooga, TN, EPB began in 1935 for the sole purpose of providing electricity to the Chattanooga area.³⁶ In 1999, they began construction on a fiber network for the purposes of providing telecommunications to the residents and in 2008 after a

³³ 'Qwest Brings a Knife To a Utah Gun Fight - After Years of Fighting FTTH Projects, Launches ADSL2+.... | DSLReports, ISP Information' <<http://www.dslreports.com/shownews/Qwest-Brings-a-Knife-To-a-Utah-Gun-Fight-97502>> [accessed 5 December 2013].

³⁴ 'Seattle Mayor, Mike McGinn - SeaFi Initiative - Gigabit Seattle' <<http://www.seattle.gov/mayor/seafi/gigabit.htm>> [accessed 18 November 2013].

³⁵ 'Seattle Mayor, Mike McGinn - SeaFi Initiative - Gigabit Seattle'.

³⁶ 'Our Company and History - EPB' <<https://www.epb.net/about/our-company-and-history/>> [accessed 18 November 2013].

unanimous vote they approved a full FTTH project with smart grid.³⁷ EPB offers 1 Gig service for \$69.99.³⁸ Tennessee passed and implemented a restrictive law in 1999 with three bans on providing services, three administrative restrictions, and eight economic restrictions.

³⁷ *'Our Company and History - EPB'.*

³⁸ *'EPB Fiber Optics | Support'* <<https://epbfiber.com/gigsupport/>> [accessed 18 November 2013].

Chapter 3

State Restrictions on Municipal Broadband

3.1 History of Municipal Broadband Restrictions

The history of restrictions in municipal broadband actually began with an authorization to expressly permit municipalities to provide telecommunications services. Municipally owned utilities in Minnesota began providing telecommunications services like cable and internet after the legislature passed a bill in 1991 permitting them to provide services.³⁹ The reason the law is now listed as a restriction is that it required a super majority (65%) of the voters to approve the plan before a municipality could proceed. In 1996 Moorhead, Minnesota attempted to pass a referendum to provide service but was not able to achieve the super majority required, gaining only a 52% majority.⁴⁰ The state legislature had a proposal to rescind the super majority in 1998 but failed to do so. The law still stands and is now considered a restriction.

As the importance of the internet grew and broadband became ubiquitous, other states started creating restrictive laws. Texas, Missouri, Nevada and Tennessee began passing restrictions in 1997, Alabama followed in 2000. Every year since then, there has

³⁹ See Minn., 1991

<<https://www.revisor.mn.gov/laws/?doctype=Chapter&year=1991&type=0&id=79>>. §237.19

⁴⁰ Gaw, J., & Writer, S. (1997, Sep 07). *Municipal utilities plug into the future // they're expanding their services to include telecommunications tools*. Star Tribune. Retrieved from <http://search.proquest.com/docview/426889546?accountid=14503>

been a restrictive law proposed or passed.⁴¹ To date there are 19 states with laws that impose restrictions on municipalities providing telecommunication services (See Table 1). In 2013, Georgia almost became the twentieth state to restrict municipal broadband, in a bill perhaps misleadingly titled, the Municipal Broadband Incentive Act, that would have prohibited public providers from providing service in any area but one declared 'unserved' by the commission.⁴²

Today, there are three main types of residential user subscription services: video programming service, telephone, and internet. The wireline method of delivery for these three subscriptions has been combinations of mediums: copper wires, coaxial cable and the newest method, fiber optics. Some states define communications services or telecommunications services broadly so they encompass all three traditional subscriber services, while others still separate them in definitions and statutes. When a reference is made to all three services, it is implied to mean telephone, video programming service, and internet.

3.2 Categories of Restrictions

The type and number of restrictions imposed varies across the 19 states. To categorize the restrictions, the statutes governing communications (telephony, video

⁴¹ 'Baller_Proposed_State_Barriers.pdf'
<http://www.baller.com/pdfs/Baller_Proposed_State_Barriers.pdf> [accessed 10 November 2013].

⁴² 'Bill Text: GA HB282 | 2013-2014 | Regular Session | Comm Sub | LegiScan'
<<http://legiscan.com/GA/text/HB282>> [accessed 8 November 2013].

programming service and internet), utilities, and local governments required research and analysis. In some cases, the original statute received multiple modifications many times since the initial passage. Some laws sunsetted, while additions added further restrictions. The statutes from 2012 for each state provided the majority of reference, with the only new legislation in 2013 the Utah law restricting the ability of a municipality to bond for funds to support and build communication services (see Section 3.3).

The three main types of restrictions typically imposed are bans on providing services, administrative restrictions, and economic restrictions (See Figure 3).



Figure 3: Types of Restrictions

A ban is a prohibition by a legal means. There were some states that banned aspects of services and some that banned who could provide service. Any type of ban was categorized as a ban on providing services and is covered in section 3.3.

Administrative restrictions are procedural requirements that states have implemented requiring business plans, feasibility studies, public hearings, and referendums for the municipal deployment of broadband services and to incur debt. These procedural requirements have associated costs, they require administrative action and time as the main limitation so they were categorized as administrative restrictions. Section 3.4 goes into more detail.

Economic restrictions are requirements regarding appropriations, accounting, budgets, fees, rates, taxes and transfers as part of a municipal deployment of broadband systems. Any provision that was enacted with the intent to instill monetary control or to limit the economic ability of a municipality falls within this category; this is covered in Section 3.5.

3.3 Bans on Providing Service

There are eight different bans enacted as restrictions to municipal broadband across 11 different states (See Table 3). Some states are more restrictive than others and essentially have so many restrictions as to effectively eliminate any possibility of a municipality providing service. This is prompting calls on the FCC to

use its power and authority to preempt the state laws that restrict municipalities from providing services.⁴³

The most common ban restricts communications/telecommunications services for all municipalities excepting municipal electrics. Four states enacted this ban: Arkansas, Nebraska, Tennessee, and Virginia.

⁴³ Matthew Dunne, 'Let My People Go (Online): The Power of the FCC To Preempt State Laws That Prohibit Municipal Broadband', *Columbia Law Review*, 2007, 1126–1163.

Table 3: States with Bans on Providing Services

BAN:	Name of States with this restriction:	Number of States with this restriction:
Communication services (all 3) banned except for municipal electrics	Arkansas, Nebraska, Tennessee*, Virginia	4
Banned from providing telecom services	Alabama, Arkansas, Missouri	3
Banned from providing cable services	Virginia	1
Ban on municipalities and public power utilities.	Texas	1
Ban on public utility districts providing services.	Washington	1
Banned according to the population of a city or county	Nevada	1
Banned unless local provider fails to offer specified service.	Pennsylvania	1
Banned if current telephone co-op has <100,000 subscribers	Tennessee	1
Banned if current cable provider has <6,000 subscribers	Tennessee	1
Banned if telecom co-op has been providing cable services for less than 10 years	Tennessee	1
	* Except for historically unserved areas and only with a partner provider.	

Arkansas has 15 municipal utilities,⁴⁴ two of which do offer communications services: Paragould and Conway.⁴⁵ Arkansas combines the ban allowing only

⁴⁴ 'Utilities in Arkansas' <<http://arkansasenergy.org/energy-in-arkansas/utilities-in-arkansas.aspx>> [accessed 10 November 2013].

⁴⁵ 'Community Network Map | Community Broadband Networks'.

municipal electrics to provide services with a ban on providing ‘basic local exchange service.’⁴⁶

Nebraska is a unique situation where there are no municipal electric providers but one publicly owned provider serving most of the state.⁴⁷ Enacting legislation with language that only permits municipal electrics is just a ban, so there is no need to combine the ban with administrative and economic restrictions. However, Nebraska does expressly permit the sale and lease of dark fiber by political subdivisions, a separate legal entity of a state which usually has specific governmental functions; examples would include counties, cities, townships, villages, schools, sanitation, utility, irrigation, drainage and flood-control districts.⁴⁸

Tennessee has 60 municipal power providers;⁴⁹ the restrictive law in Tennessee is ironic given the history of the state with the Tennessee Valley Authority project establishing the nation’s largest public power provider.⁵⁰ Currently, there are eight

⁴⁶ ‘Broadband Communities Magazine’ <<http://www.bbpmag.com/MuniPortal/EditorsChoice/0511editorschoice.php>> [accessed 5 November 2013].

⁴⁷ ‘About Us - Nebraska Public Power District’ <<http://www.nppd.com/about-us/>> [accessed 10 November 2013].

⁴⁸ ‘Nebraska Legislature’ <<http://nebraskalegislature.gov/laws/statutes.php?statute=86-575>> [accessed 10 November 2013].

⁴⁹ ‘TMEPA’ <<http://www.tmepe.org/>> [accessed 10 November 2013].

⁵⁰ ‘TVA: From the New Deal to a New Century’ <<http://www.tva.com/abouttva/history.htm>> [accessed 10 November 2013].

municipal broadband implementations in Tennessee.⁵¹ Telephone and cables bans are combined with the municipal electric requirement (see Table 3) along with numerous administrative and economic restrictions (See Sections 3.3 and 3.4, respectively).

Virginia has sixteen municipal power providers;⁵² however they effectively ban providing video programming service with an economic restriction that requires a feasibility study to prove that the average annual revenues will exceed average annual costs in the first year of operation.⁵³

Alabama, Arkansas, and Missouri ban basic telephony from being offered as a service.⁵⁴

Texas bans municipalities and municipal electric systems from providing all services.⁵⁵ There is only one municipal network implementation; Greenville, Tx.⁵⁶ This restriction has been declared an outright ban on municipal networks.⁵⁷

⁵¹ 'BBC_May13_MunicipalNetworks.pdf' <http://www.bbpmag.com/2013mags/may-june/BBC_May13_MunicipalNetworks.pdf> [accessed 10 November 2013].

⁵² 'Microsoft Word - VEP - Section 2 Electricity 10-7-10 Final.doc - VEP_Section2_Electricity.pdf' <http://www.dmme.virginia.gov/DE/LinkDocuments/VEP_Section2_Electricity.pdf> [accessed 10 November 2013].

⁵³ '124324.doc - FCC-12-90A1.pdf' <http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0827/FCC-12-90A1.pdf> [accessed 27 October 2013].

⁵⁴ ALA. CODE § 11-50B-1 (2012); ARK. CODE ANN. § 23-17-409(b)(1) ; MO. REV. STAT. § 392.410(7) (2012);

⁵⁵ TEX. UTIL. CODE ANN. § 54.201

⁵⁶ 'GEUS - Greenville, Texas Municipally Owned Provider of Electricity, Cable TV and Internet Service' <<http://www.geus.org/>> [accessed 10 November 2013].

⁵⁷ Sharon E. Gillett, William H. Lehr and Carlos Osorio, 'Local Government Broadband Initiatives', Telecommunications Policy, 28 (2004), 537–558.

Washington State bans public utility districts but not municipalities. It allows public utility districts to provide wholesale only services. NoaNet (Northwest Open Access Network) has combined ten public utility districts to offer wholesale services and has laid over 1,831 fiber miles, connecting over 260,000 customers.⁵⁸

Nevada bans services based upon the size of the county or municipality. The county population may not exceed 50,000 residents for the county to offer services and the municipal population cannot exceed 25,000 residents for a municipality to offer services. These bans eliminate most of the population in the state; in Nevada almost 92% of the residents live in four counties⁵⁹ that all have populations exceeding 50,000; the municipalities with less than 25,000 only contain 3.8% of the population.⁶⁰

Pennsylvania bans municipalities from providing any services at all unless the current local exchange carrier refuses to provide service.⁶¹ Pennsylvania requires carriers to file a network modernization plan and to balance deployments between rural and urban areas. Municipalities must request service from the local provider, the network provider then has 14 months to provide the requested service. There is no

⁵⁸ 'About Northwest Open Access Network | NoaNet, Reliable High-Speed Internet Provider for Washington State' <<http://www.noanet.net/our-story.aspx>> [accessed 10 November 2013].

⁵⁹ '2010 POPULATION OF COUNTIES IN NEVADA - PopulationOfCountiesInNevada2010.pdf' <<http://www.leg.state.nv.us/Division/Research/Districts/Reapp/2011/Tables/PopulationOfCountiesInNevada2010.pdf>> [accessed 9 November 2013].

⁶⁰ EXECUTIVE BRANCH, 'POLICY AND PROGRAM REPORT', Policy, 2 (2012) <<http://ftp.leg.state.nv.us/Division/Research/Publications/PandPReport/19-SLG.pdf>> [accessed 10 November 2013].

⁶¹ 66 PA. CONS. STAT. ANN. § 3014(h)

provision for anything besides speed in the network modernization requirement, so quality of service, price, medium of delivery and coverage are not considered.

Pennsylvania has two municipal networks; one cable network in Pitcairn, PA and one FTTH in Kutztown, PA.⁶²

3.4 Administrative Restrictions

There are eleven states that have enacted administrative restrictions to municipal broadband (See Table 4). These restrictions are centered on required Request for Proposals (RFPs), feasibility / business plans and referendums.

⁶² 'Community Network Map | Community Broadband Networks'
<<http://www.muninetworks.org/communitymap>> [accessed 10 November 2013].

Table 4: Administrative Restrictions

Administrative	Name of States with this restriction:	Number of States with this restriction:
Business Plan/Feasibility Plan Required	Florida, Louisiana, Tennessee, Utah, Virginia, Wisconsin	6
Referendum Required for cable	Alabama, Colorado, Louisiana, Minnesota*, Tennessee, Virginia	6
Referendum Required for internet	Colorado, Louisiana, Minnesota*	3
Referendum required for all 3 services	Colorado, Louisiana	2
Must Issue an RFP*	Michigan, North Carolina	2
Referendum to incur debt	North Carolina	1
Referendum required if bond repayment more than 15 years	Florida	1
	* Super Majority Required	

Requiring a feasibility study or business plan is the most often implemented administrative restriction and is required by six states. Often the feasibility plan is required to ensure expenses will meet or exceed revenues in a required time frame (See Section 3.3). Commonly, the business plan is also used by incumbents to plan an attack on a future required referendum.

Referendums required before implementing a plan for communications services or funding a proposal for service is likely the most highly-contested administrative restriction. Not only is the cost to a municipality to conduct a referendum a factor, but

incumbent carriers far outspend municipalities, who are sometimes even prohibited by state law from lobbying for one side or another of a referendum.⁶³

Issuing RFPs in Michigan and North Carolina fall into the same category, however Michigan allows municipalities to proceed with plans for a municipal network if less than three bids are received⁶⁴ and North Carolina requires a municipality to issue an RFP prior to offering communications services and to enter into negotiations with the “most responsive proposer” for at least 60 days, then continue with the second most responsive proposer for another 60 days, before being allowed to proceed with plans to offer a communication service.⁶⁵

3.5 Economic Restrictions

There are numerous economic restrictions; 21 different restrictions across nine different states (See Table 5) The top two restrictions require states to establish separate funds for communications services and detail the rates to be charged to subscribers; 8 of the 9 states require both restrictions. The reasons for establishing separate funds is not only to ensure that separate and accurate accounting is possible for the communications service, but also to enact further restrictions like restricting transfers into and out of the fund. Some states require market rate loans for these transfers; ensuring that cross-

⁶³ ‘Comcast Aims to Buy Seattle Mayor, Intimidate Others | Christopher Mitchell’ <http://www.huffingtonpost.com/christopher-mitchell/comcast-aims-to-buy-seatt_b_4192227.html> [accessed 11 November 2013].

⁶⁴ ‘12_08rpt.pdf’ <http://le.utah.gov/audit/12_08rpt.pdf> [accessed 7 December 2012].

⁶⁵ N.C. GEN. STAT. ANN. § 160A-340.6 (2012).

subsidization from other utility services is not happening; imputing fees (pole-attachment, inspection, ad valorem, assessment and inspection fees); taxes (property, local, county, state, federal taxes) that can be added to the rate subscribers pay and to require tax equivalent payments.

Table 5: Economic Restrictions

Economic Restriction:	Name of States with this restriction:	Number of States with this restriction:
Establish separate funds for communication services	Alabama, Florida, Louisiana, North Carolina, South Carolina, Tennessee, Utah, Virginia (cable)	8
Rates charged subscribers include all direct and indirect costs	Alabama, Florida, Louisiana, North Carolina, South Carolina, Tennessee, Utah, Virginia (cable)	8
Impute franchise imposed fees in rates	Alabama, Louisiana, North Carolina, South Carolina, Tennessee, Utah, Virginia	7
Impute pole attachment fees in rates	Alabama, Louisiana, North Carolina, South Carolina, Tennessee, Utah, Virginia	7
May not subsidize rates of communications services from services of non-communications or other revenues	Florida, Louisiana, North Carolina, South Carolina, Utah, Virginia	6
Federal, State and local taxes included in rates	Louisiana, North Carolina, South Carolina, Tennessee, Utah, Virginia	6
Cannot use appropriations from state, county or municipality	Alabama, Louisiana, Utah, Virginia (cable)	4
Cannot use local or state taxes for capital expenditures	Alabama, Louisiana, Utah, Virginia (cable)	4
Impute the costs of all fees, assessments, consent, administrative that a private provider would pay	North Carolina, South Carolina, Tennessee, Utah	4
Must pay local taxes	Florida, North Carolina, South Carolina, Tennessee	4
Remit tax equivalent payments	Florida, North Carolina, South Carolina, Tennessee	4
Property tax on equipment for communications services	Florida, North Carolina, South Carolina	3

Ad valorem taxes and fees	Florida, South Carolina	2
Impute the cost of the capital component available to the private provider	North Carolina, South Carolina	2
Plan to ensure revenues exceed expenses	Florida (4 years) , Virginia (1 year for cable)	2
Establish a separate department within an enterprise fund for cable	Virginia	1
Does not allow non-subscribers of a cable system to pay for costs unless a referendum is held and majority approve	Wisconsin	1
Cannot use bonds to build and operate telecommunications networks	Utah	1
Not receive a financial benefit unavailable to a public provider	South Carolina	1
Services must be self-sustaining	Alabama	1
Cannot charge prices lower than the incumbent.	Virginia (internet)	1

The economic restrictions are numerous and sub-categories can be defined by determining what the purpose of the restriction is and what financial category is defined (See Figure 4). Using this guideline, four sub-categories were defined:

- **budgetary constraints:** controlling how the capital and operating budgets are funded and maintained
- **subscriber rate control:** requirements on how to determine the rates charged to subscribers; taxes
- **taxes:** requiring taxes to be computed in numerous categories for payment to entities and inclusion in subscriber rates
- **de facto bans:** restrictions that are enacted to prevent any implementations to meet the expectation

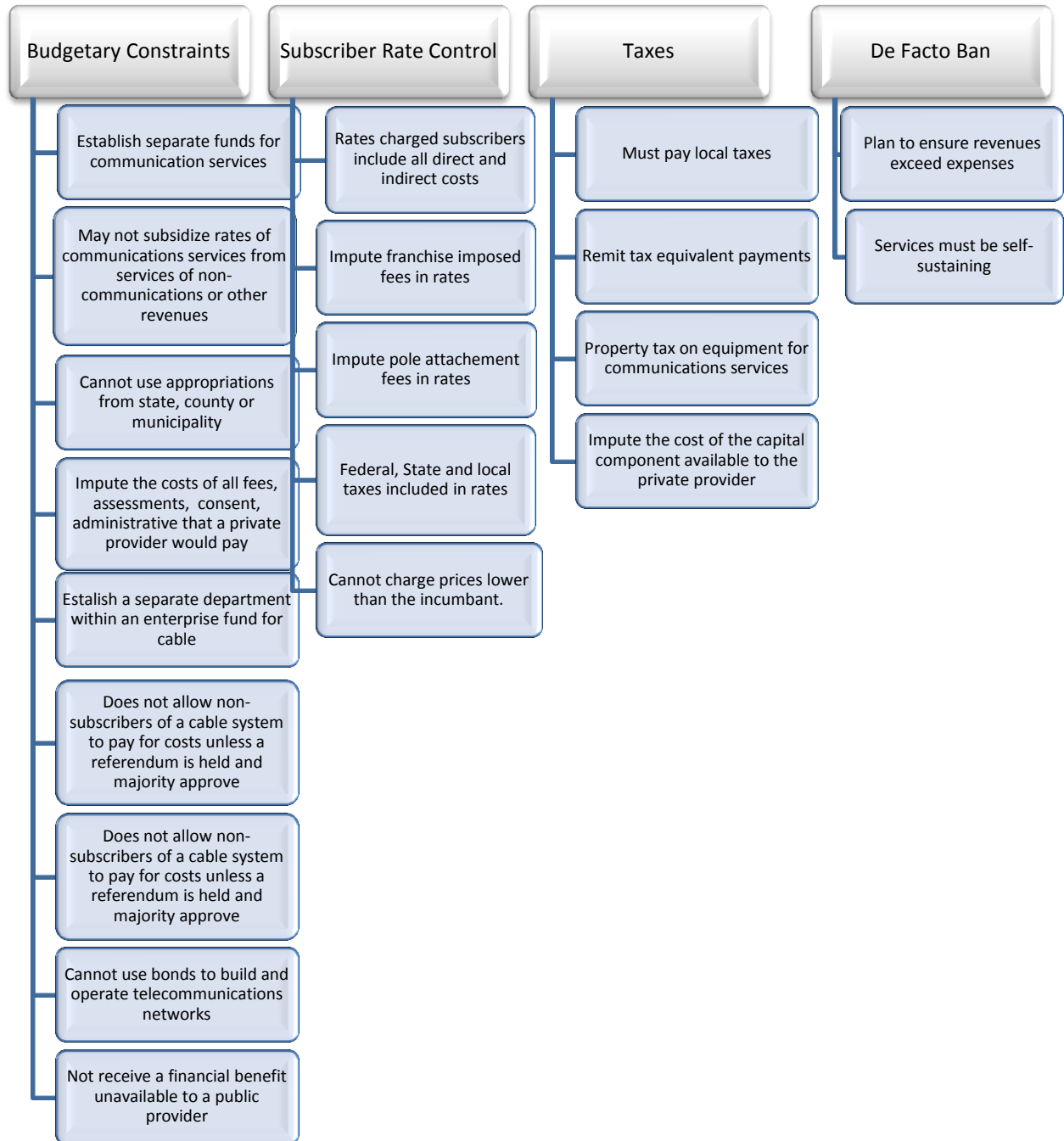


Figure 4: Economic Sub-categories

Some of the listed restrictions are considered standard procedures in the municipal electric industry. Municipal electrics currently pay tax equivalent payments. In fact, municipal electrics paid an approximate 5.2% of operating revenues in tax

equivalent payments; this exceeded the median tax payments for investor owned utilities at 3.9% in 2011, a difference of 33% more.⁶⁶

Other restrictions are not standard. One of the biggest complaints from private companies when a municipality becomes involved in communications is that it has advantages given to it by the nature of being a tax-free government organization. In the case of Qwest Corporation v. Utah Telecommunications Open Infrastructure Agency (UTOPIA), Qwest alleges discrimination based upon UTOPIA's tax exempt status:

"Due to its unique position as an interlocal cooperative governmental agency, UTOPIA takes advantage of financial benefits, such as exemptions from sales and property taxes, which enable it to construct and operate its network and offer its network services at below-market prices. These financial advantages, which are not available to Qwest or other private telecommunications companies that compete in the same wholesale and retail markets, provide UTOPIA with a distinct competitive advantage, which effectively prohibits other companies from competing with UTOPIA."⁶⁷

Levying tax equivalent payments is a logical action to create a more equitable environment in a competitive industry.

Some of the 21 listed economic restrictions in Table 5 are not common methods of achieving equality between public providers and private providers, and are de facto bans. Requiring all services to be self-sustaining is not standard in communications

⁶⁶ *Pilot 1994 Report - PilotReport2010.pdf*
<<http://www.publicpower.org/files/PDFs/PilotReport2010.pdf>> [accessed 11 November 2013].

⁶⁷ *Microsoft Word - 3287590_3.DOC - Qwest_2nd_Amended_Complaint.pdf*
<http://www.baller.com/pdfs/Qwest_2nd_Amended_Complaint.pdf> [accessed 11 November 2013].

industry pricing, where triple-play options (voice, video and data) are common and discounts for multiple services is the norm. Banning one of the three main types of subscriber services also precludes a municipality from participating in this standard pricing arrangement and is ruled more by the strength of the incumbents lobbying ability in individual state legislatures.⁶⁸

Requiring a one-year return on investment is not possible in a capital intensive project and can only be viewed as a ban on providing cable services in the state of Virginia. The additional requirement that Virginia adds of not allowing a municipal provider to price services below an incumbent defeats one of the main purposes of a municipal network: lower prices for increased broadband adoption for universal access.

South Carolina's provision of not allowing a municipal network to "receive a financial benefit that is not available to a nongovernment-owned communications service provider,"⁶⁹ prevents South Carolina and its residents from benefiting from possible grants.

Utah's newly passed (2013) bill restricts cities and counties from selling bonds to build infrastructure projects or operating and maintaining them for more than one

⁶⁸ *Carlson.*

⁶⁹ '124324.doc - FCC-12-90A1.pdf'.

year.⁷⁰ This will essentially cut off funding to UTOPIA, an inter-local cooperative government agency responsible for FTTH project in eleven Utah cities.⁷¹

Economic restrictions are the most numerous, however only 9 states have implemented them. Most states have preferred the route of administrative restrictions or banning services with 11 states implementing these. The most common restriction is the economic restriction requiring a separate fund for communication services, implemented by 8 states.

Table 6: Total Restrictions

Restrictions:	Number of restrictions:	Number of states that enact the restrictions:
Administrative Restrictions	7	11
Bans on providing services	8	11
Economic Restrictions	21	9

If a state restricts municipal broadband activities through a ban or an administrative restriction, typically only a few restrictions are included. Economic restrictions are different, with all states but Wisconsin applying between eight and 13

⁷⁰ 'Introduced Legislation SB0172 - sb0172.pdf'

<<http://le.utah.gov/~2013/bills/sbillint/sb0172.pdf>> [accessed 12 November 2013].

⁷¹ 'Utah Local News - Salt Lake City News, Sports, Archive - The Salt Lake Tribune'

<<http://www.sltrib.com/sltrib/money/55796327-79/utopia-bonds-money-operations.html.csp>> [accessed 11 November 2013].

different economic restrictions (See Figure 5). South Carolina implements the most economic restrictions at 13.

The purpose of economic restrictions has been to create equity between a private provider and a public provider however, when the number of restrictions become too numerous, there is no feasible method to provide services and the economic restrictions become a ban.

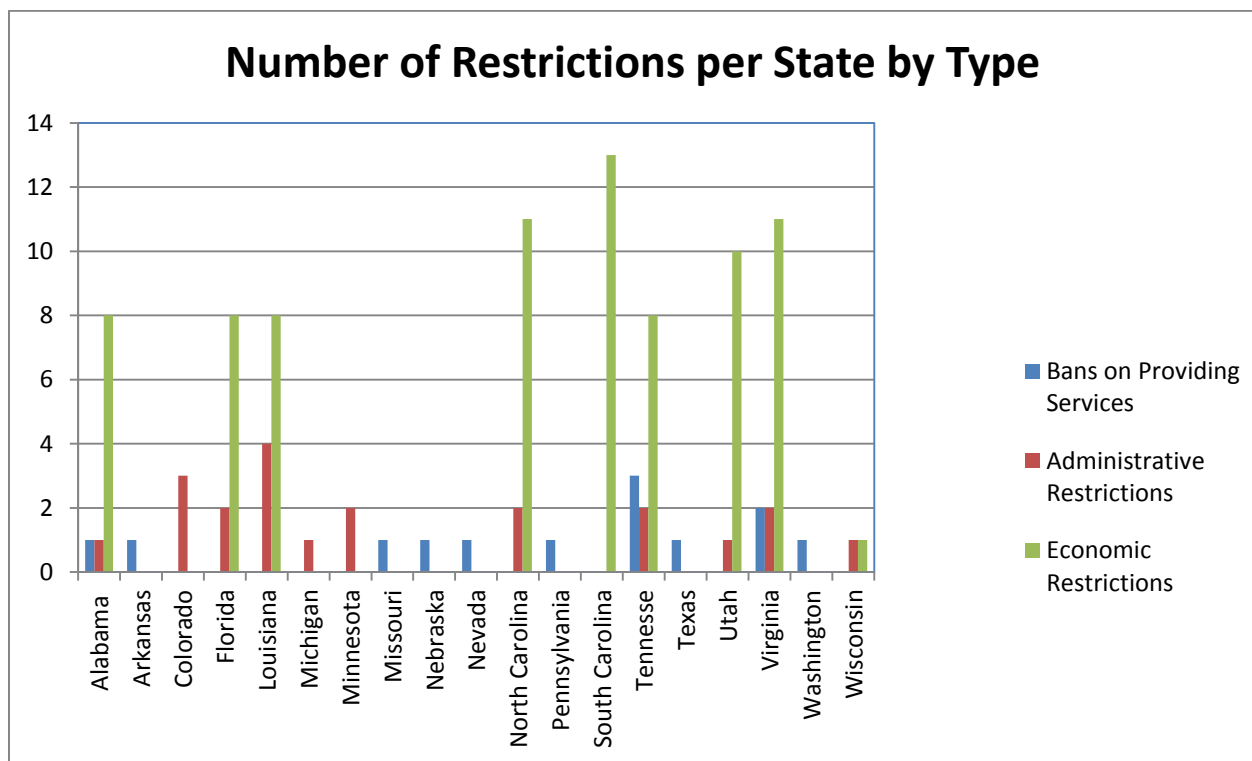


Figure 5: Number of Restrictions per State by Type

Chapter 4

Effects of the Restrictive Laws

4.1 Broadband Availability

In May 2013, the NTIA published the latest figures measuring broadband availability in the United States, using data from June 2010 through June 2012.⁷² Some quick facts from the report:

- Broadband (3 Mbps down/768 Kbps up) is now available to 98% of the population.
- 93% of the population has broadband access from a wireline provider.
- Almost 93% have access to at least 6Mbps.
- 91% of Americans have access to 10Mbps.
- Access drops to 78% at 25Mbps

Access for basic speeds is ubiquitous, but higher speeds, above 25Mbps, are not readily available.

- Broadband (3Mbps down/768Kbps up) is available to 87% of the population via cable.
- Broadband is available via DSL to 74% of the population.
- Broadband is available to 20% of the population (According to the FCC Broadband Availability Report 2012) through Fiber to the Premise (FTTP).
- Cable is the primary technology that is used to access speeds of 25Mbps or greater.
- 81% of the population has access to mobile wireless download speeds of 6 Mbps.

Cable is the dominant player in the wireline category, fiber is not available to most Americans, and mobile wireless is available in the lower tiers.

⁷² 'U.S. BROADBAND AVAILABILITY: June 2010 – June 2012 - usbb_avail_report_05102013.pdf' <http://www.ntia.doc.gov/files/ntia/publications/usbb_avail_report_05102013.pdf> [accessed 16 November 2013].

- Close to 100% of urban residents have access to speeds of 6 Mbps.
- 82% of rural residents have access to speeds of 6 Mbps.
- 88% of urban residents have access to speeds of 25 Mbps.
- 41% of rural residents have access to speeds of 25 Mbps.

There is a discrepancy between urban and rural residents and the disparity grows dramatically as speed increases.

The NTIA report measured seven different tiers from 3Mbps to 1Gbps. It also referenced a Small Business Administration report that distance learning requires at least 25Mbps for an “OK” experience and 50Mbps for a “Good” experience.⁷³ The conclusions for this report are that instead of measuring if broadband is available or not, there is a need to measure multiple tiers; there are far more providers at the lower tiers; that discrepancies exist in the availability of higher speeds; the need for broadband is continuing to grow; and that areas that do not have the ability to offer the higher tiers will have to significantly upgrade their infrastructure to be able to offer those tiers when businesses and communities require them.

4.2 Broadband Adoption

Broadband adoption in the United States has steadily grown since measurement began in 2000.⁷⁴ In June of that year, broadband adoption was measured at 3% and by May 2013 the rate of broadband adoption by adults over 18 had reached 64%.⁷⁵

⁷³ ‘Impact of Broadband Speed and Price on Small Businesses - rs373tot.pdf’
<<http://archive.sba.gov/advo/research/rs373tot.pdf>> [accessed 16 November 2013].

⁷⁴ Kathryn Zickuhr and Aaron Smith, ‘Home Broadband 2013’, Pew Internet & American Life Project (August 26, 2013), 2013

When considering demographics of broadband adoption, the factors most correlated tend to be educational attainment, age, and household income.⁷⁶ 57% of high school graduates subscribe to broadband compared to 78% of college graduates; 43% of people 65+ compared to 69% of people aged 50-64 years; 54% of household with incomes less than \$30,000/year compared to 84% of households with incomes of \$50,000 - \$74,999.⁷⁷

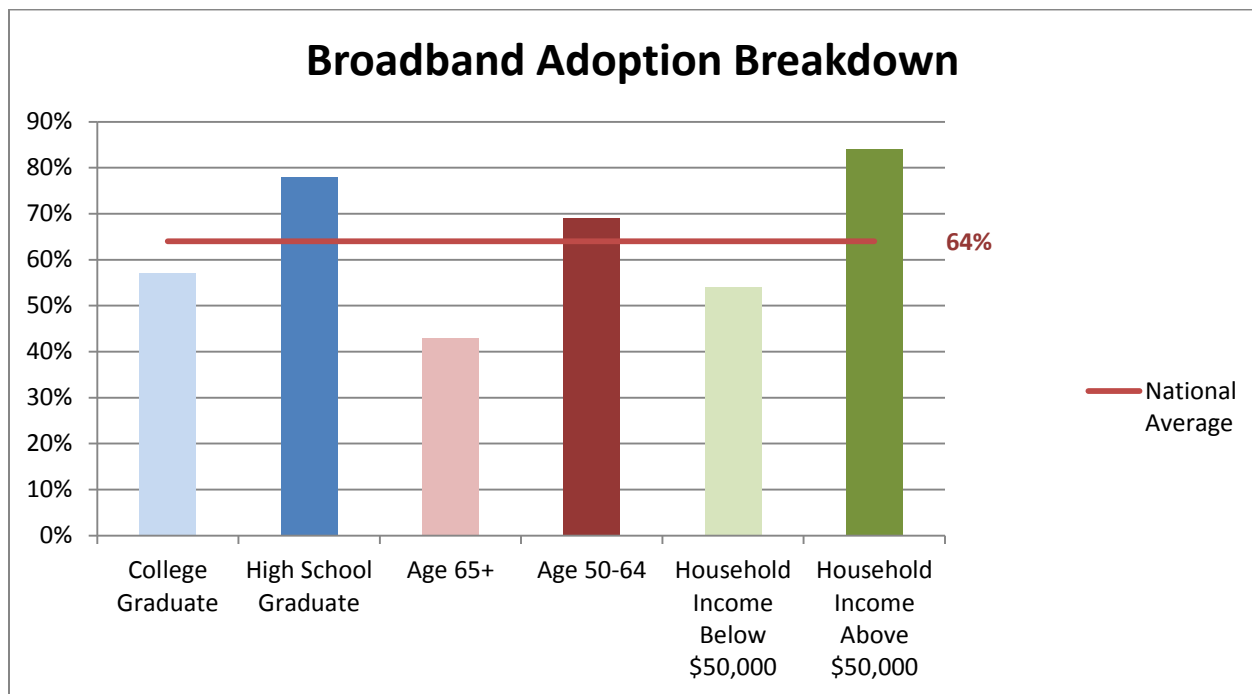


Figure 6: Broadband Adoption Breakdown

<http://www.pewinternet.org/~media/Files/Reports/2013/PIP_Broadband%202013_082613.pdf> [accessed 17 November 2013].

⁷⁵ 'Eighth Broadband Progress Report | FCC.gov' <<http://www.fcc.gov/reports/eighth-broadband-progress-report>> [accessed 18 November 2013].

⁷⁶ 'PIP_Broadband 2013_082613.pdf'

<http://www.pewinternet.org/~media/Files/Reports/2013/PIP_Broadband%202013_082613.pdf> [accessed 17 November 2013].

⁷⁷ Zickuhr and Smith.

A study conducted by the NTIA (National Telecommunications and Information Administration) and the Department of Commerce shows people rely on the internet for activities in their daily lives. For employment, 73% of unemployed users searched for a job; for health, researching health plans and health information; civic engagement, where the internet is proving to be significantly more effective than traditional media in engaging citizens; personal communication, email correspondence and social networking; financial services, for online banking and shopping.⁷⁸

The broadband adoption rates in the 19 states with restrictive laws vary, with eight states out of 19 at or above the national average of 64% and 11 out of 19 (~58%). Three states are more than 10% below the national average (See Figure 6).

⁷⁸ *'Exploring_the_digital_nation_-_americas_emerging_online_experience.pdf'*
<http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_-_americas_emerging_online_experience.pdf> [accessed 17 November 2013].

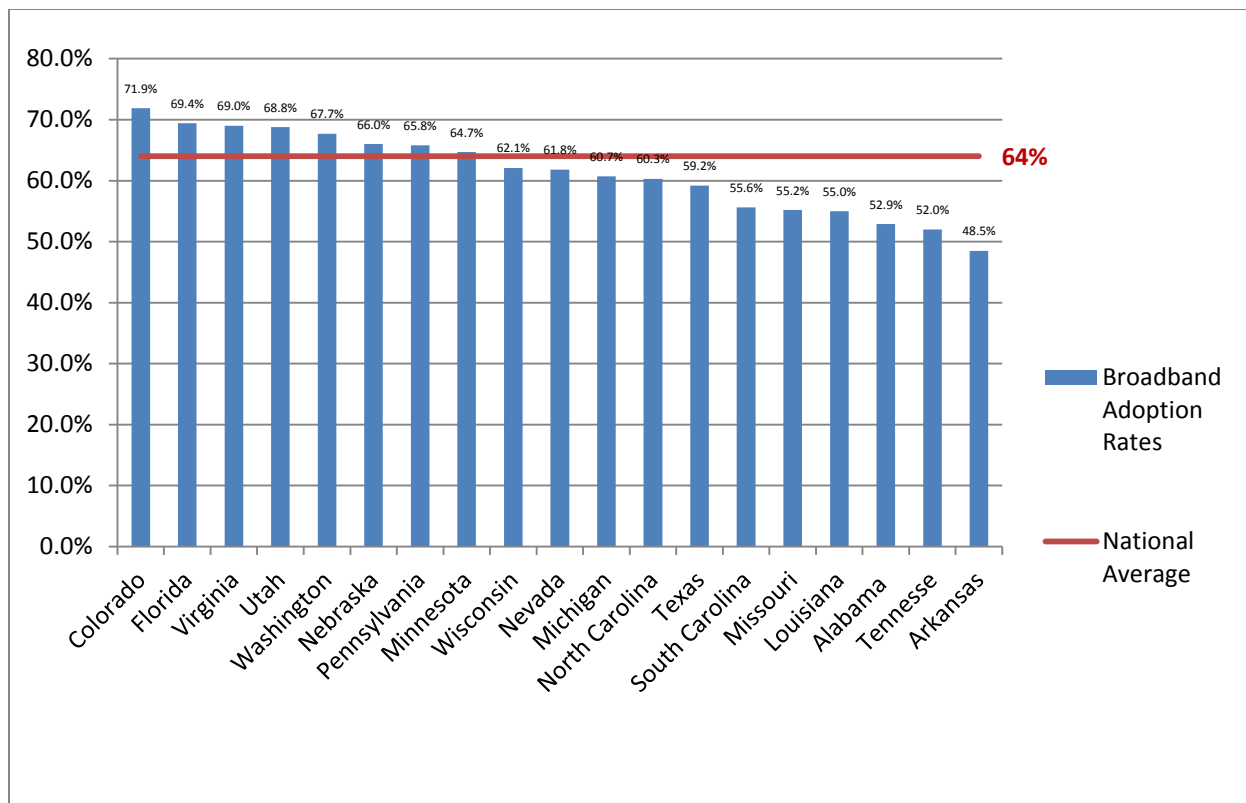


Figure 7: Broadband Adoption⁷⁹

4.3 Fiber to the Home

The FCC has identified measures that promote competition as critical to the local telecommunications market.⁸⁰ With cable being the dominant provider in speeds over 25Mbps, the measurement of fiber to the home is sometimes used as an indicator of “future-proofing” and as a competitor to cable.⁸¹

⁷⁹ ‘Eighth Broadband Progress Report | FCC.gov’ <<http://www.fcc.gov/reports/eighth-broadband-progress-report>> [accessed 18 November 2013]

⁸⁰ ‘Eighth Broadband Progress Report | FCC.gov’ <<http://www.fcc.gov/reports/eighth-broadband-progress-report>> [accessed 18 November 2013]

⁸¹ ‘BBP_MarApril_FiberIsFuture.pdf’ <http://www.bbcmag.com/2010mags/march-april10/BBP_MarApril_FiberIsFuture.pdf> [accessed 18 November 2013].

In the 19 states that restrict municipal broadband implementations the FTTH rates show that six states are above the national average of 15.4%⁸² Pennsylvania, Florida, Utah, Texas, Tennessee, and Virginia leaving 13 out of 19 below the national average (~68% of states with restrictions). Florida, Pennsylvania and Virginia all benefitted from Verizon Fios implementations. Virginia also has four municipal implementations that have increased their percentage and Utah, Washington, and Tennessee have large municipal fiber to the home implementations.⁸³

⁸² *Vibrant Communities*, John B. Horrigan and Ellen Satterwhite, 'STATE BROADBAND INDEX', 2012 <<http://broadband.utah.gov/wp-content/uploads/sites/2/2013/02/technet-2012-state-broadband-index-report.pdf>> [accessed 1 December 2013].

⁸³ 'Broadband Communities Magazine'.

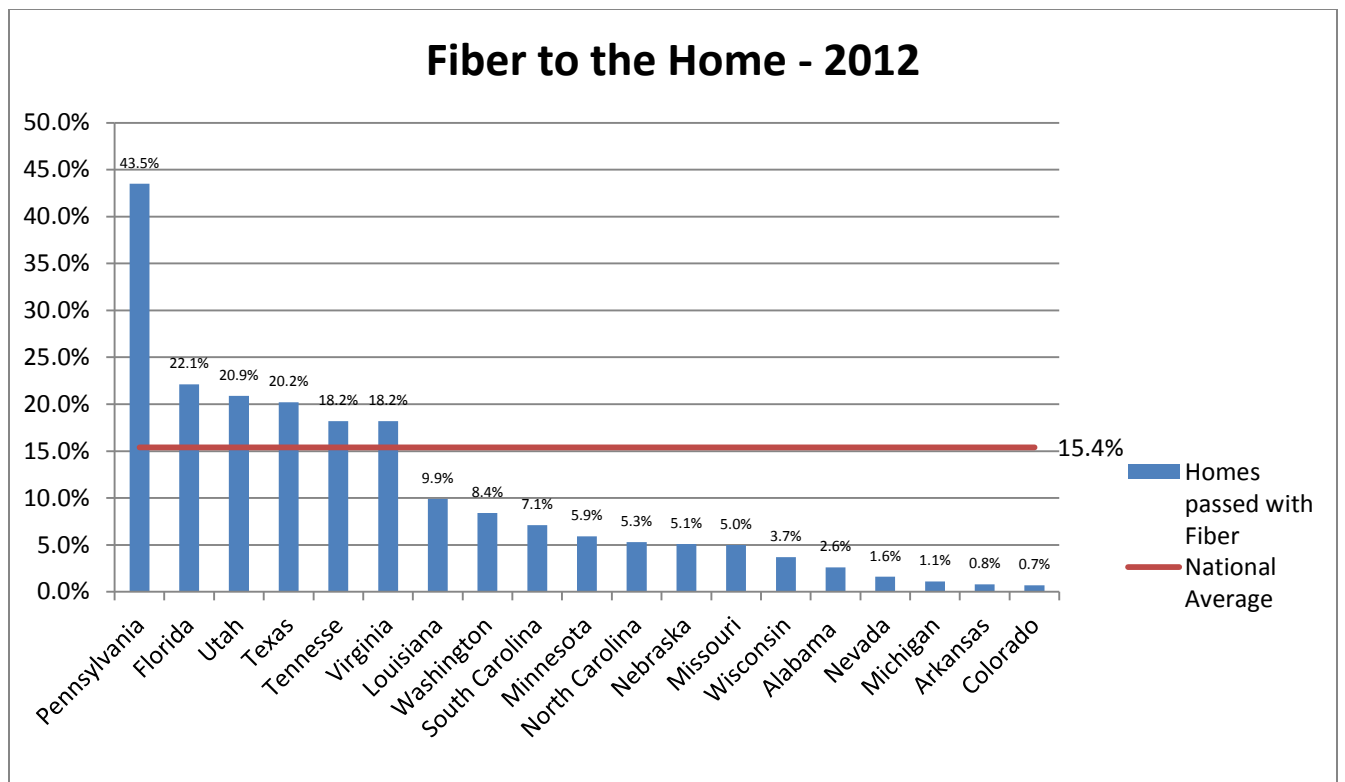


Figure 8 : Fiber to the Home Percentages⁸⁴

Broadband progress reports show there is a gap between broadband availability and adoption and that broadband adoption is tied to age, household income and education. Broadband is becoming critical for employment searches, health care, communication, civic engagement and financial purposes. 68% of the states with restrictions to municipal broadband deployments are below the national average for broadband adoption and 73% of the states are below the national average in fiber to the home deployments.

⁸⁴ *Vibrant Communities*, John B. Horrigan and Ellen Satterwhite, 'STATE BROADBAND INDEX', 2012 <<http://broadband.utah.gov/wp-content/uploads/sites/2/2013/02/technet-2012-state-broadband-index-report.pdf>> [accessed 29 April 2013].

Chapter 5

Summary, Conclusions and Recommendations

Broadband options within a community are essential. Broadband availability and adoption are critical to performing basic everyday tasks: employment searches, medical, education, financial. The quality of local infrastructure and the prices offered by current providers is an issue all local governments need to understand, affecting the citizens of the community and economic viability. The Federal government realizes this fact, providing grants to municipalities to ensure universal access and availability. There are many options at lower speeds, but cable is the primary option above 25Mbps. The current FTTH rate is 15.4% and local exchange carriers are not prioritizing network upgrades to increase that rate. Municipalities are interested in a second wireline competitor that can achieve speeds greater than 50Mbps and the incumbent LEC (Local Exchange Carrier) may not be interested in that investment.

5.1 Conclusions

1) There are 19 states imposing restrictive laws on municipalities providing communications services. Those restrictions fall into three categories: Bans on providing services, economic restrictions, and administrative restrictions.

- 2) Some states ban (or protect) one segment of the industry by banning municipalities from providing one of the three main subscription services.
- 3) The most common ban is to limit municipal broadband offerings except by municipal electrics.
- 4) The most common restriction is the economic restriction requiring municipalities to establish a separate fund for the communication service, with 8 states implementing this restriction.
- 5) There are 21 different types of economic restrictions. States tend to apply between eight and 13 different economic restrictions.
- 6) A restriction applied in one state will not have the same affect in another state due to multiple factors, including status of the LEC or the number of municipal electric providers.
- 7) A state may totally prohibit a municipality from providing services with one restriction if that restriction affects the current market in a particular manner or by imposing too many restrictions, making it impossible for the proposal to be feasible.
- 8) Utah and Virginia have greatly increased their FTTH percentage above the national average due to municipal network implementations.

5.2 Limitations

Using the FTTH rate does not accurately measure the effect the restrictions may have had on a state. Most statistics gathered provide one cumulative number

and do not break down the statistic by provider so it is not possible to determine what percent of the FTTH rate is from a public or private provider.

5.3 Suggestions

1) Broadband adoption and FTTH in some states with restrictions are very low when compared to the national average and instead of restricting broadband implementations; the state should consider allowing incentives the federal government provides to assist them in raising those numbers.

5.4 Recommendations

- 1) A longitudinal analysis of the restrictions, the status of the broadband adoption, and the FTTH rate may provide more information into the effect the restrictions may have had in a state. Some of the large municipal implementations in states may have been deployed before the restrictions and therefore have positively affected the FTTH numbers, but now the state is categorized as a very restrictive state.
- 2) Broadband adoption rates are a factor of education, income, and age. Reviewing the price per Mb in areas with more two or more wireline providers and breaking down the broadband adoption in those categories may reveal if having a third wireline entrant increases adoption in these groups.
- 3) The restrictions are categorized by type of restriction. A different way that may reveal more significant impacts on a state may be to break the restrictions down

by the effect the restriction has on the ability of a municipality to offer services and assign a weight to the different restrictions.

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