IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

IN AND FOR THE COUNTY OF PIERCE

Mitchell Shook, Plaintiff, Pro Se v. CITY OF TACOMA Defendant	No. 19-2-07135-0 **DECLARATION OF MITCHELL SHOOK IN SUPPORT OF MOTION FOR PEREMPTORY WRIT OF PROHIBITION or INJUNCTION**

Mitchell k. Shook declares as follows:

1. I am the plaintiff in this matter, a resident of Tacoma, ratepayer of Tacoma Public Utilities and customer of the municipal System operated by Tacoma Power. I have personal knowledge of the matters set forth below, as the founder of Advanced Stream, an ISP on Click! Network.

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2. The prospect of a municipal network for TPU was controversial from the moment the idea was first proposed in the mid 1990's. The powerful incumbent monopoly operator, TCI at the time (Comcast's predecessor), wrote letters in protest and lobbied against creation of Tacoma's municipal network[1] -all to no avail. The System was built anyway, at a cost of over $200 million; but that didn't end lobbying efforts to destroy Tacoma's municipal network. Ex. 14 Ex. 29.

3. As the first municipal broadband network in America, Tacoma has always been in the crosshairs of the "powers that be". Tacoma is the "poster child" of the municipal broadband movement; and, consequently a target of large, incumbent, monopoly operators -who hope, by killing Click!, to dash the hopes and dreams of the many potential municipal competitors now planning their own public broadband utilities. I have witnessed, firsthand, the trickery[2] and behind the scenes efforts deployed by these "private interests", over the past 20 years, to destroy Tacoma's municipal cable television, high-speed data transport and Internet access network. Ex. 28

4. The endless lobbying efforts of these incumbent monopolies has even resulted in a "national crazy quilt" of rules, with some states permitting municipal networks and others refusing to grant municipalities authority to operate such networks. Ex. 24 p.606

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[1] Please see Ex. 29 for an example of the efforts to derail Click!'s creation.

[2] https://youtu.be/8atnBaxl1Rk Interview and Confession of TPU Board Member Bryan Flint -who witnessed the accounting trickery and spills the beans.

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5. Recognizing that this present case is no place to vet these issues, I will simply leave with an observation about how Click! has been mistreated -from an accounting perspective. Artificial "losses" were created to make Click! appear to be losing money. Those "fake losses" were concocted thru a variety of schemes, such as allocating unrelated costs -costs totally unrelated to operating a TV or Internet business - onto the Click! The practice became so outrageous that City Council fired the Director responsible for the tactics. Council Member Ibsen compared the Director to "*dishonest cashier, stealing from the register*". City Council ultimately called for an audit of the System's profitability -but even that audit was never completed. Ex. 27. Ex. 28

6. The nationwide efforts of these monopoly operators to prevent the spread of municipal networks that would compete with them is well documented and common knowledge. Ex. 24. Comcast even sued Chattanooga just hours before the City voted to approve construction of their municipal network. Happy ending there, however, since Chattanooga is now the nation's largest municipal network -leaving Tacoma in second place. [3]

7. In the present case, Rainier Connect, who now proposes taking control over Tacoma's municipal System, under the proposed "term-sheet" for a 40 year IRU and Asset Purchase Agreement, **is also one of these "incumbents**" - who was staunchly opposed, just like TCI, to the creation of Click! Network.

[3] Comcast Sues EPB on Eve of Bond Issue, CHATTANOOGAN (Apr. 22, 2008), http://www.chattanoogan.com/2008/4/22/126367/Comcast-Sues-EPB-In-Hamilton-County.aspx

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Rainier Connect's president at the time, Mr. Skip Haynes, famously wrote an OPED for the News Tribune in opposition to Click!'s creation. Ex. 27

8. Then, after waiting 10 years, Rainier Connect joined Click! Network, acquiring one of the three ISPs on Click!'s open access network (Harbor Net), and then a second ISP (Net Venture). Now, 20 years after opposing the very creation of Tacoma's municipal network, Rainier Connect stands poised to swallow up the public's interest in the municipal venture -all without a vote of the very people who paid for it -in clear violation of City Charter 4.6. Ex. 3.

9. The System has brought lower rates for Internet access and cable television to TPU ratepayers. This proposed lease ("IRU") and Asset Purchase Agreement will take away the city's ability to set rates and maintain operational control over these services for its constituents.

10. At a Study Session on May 14th, 2019, Tacoma's Mayor Woodards said she would like to see the privatization agreement completed by July 16th, which she pointed out was her birthday -adding "*it would be a nice birthday present*". Given the large campaign contributions made by Rainier Connect, their associates and affiliates, to her recent campaign, I find her request for this particular birthday gift and promotion of these privatization efforts particularly concerning.

11. It was recently disclosed, in a January 2019 podcast interview with TPU board-member Bryan Flint, that the previous TPU Director, Mr. Gaines, had purposefully mischaracterized the profitability of the System. Mr. Flint revealed, that when allocating costs to the System, the Director "*threw in everything AND the kitchen sink*", to make it appear the System was losing money. Mr. Flint disclosed that "*the numbers were not real*" and that Mr.

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Flint, himself, was the one who alerted the media, in 2015, telling Tacoma News Tribune reporter (Kate Martin) *"there's something wrong here, you need to look at these numbers".* When these matters were discovered, that Director was fired; but, his efforts to assist in the privatization of the System are still unfolding.

12. The System, operating under the Click! brand, has been widely promoted over the past 20 years[4]. The brand has tremendous valuable goodwill, with a nearly 50% local name recognition. The customers are incredibly loyal, and the System is a source of great community pride.

13. As an expert in the telecommunications field, with over 20 years of experience as a CEO, I am familiar with the practical, legal and accounting implementation of "IRU" agreements. An IRU agreement, at the core, is a lease. The parties to the agreement operate as a lessor and lessee would under a lease. Payments are recorded as lease expenses by the lessor. The lessee receives quiet enjoyment during the lease term. The value of the underlying asset (dark fiber) remains on the books of the lessor -depreciated by the lessor- and the asset is returned to the lessor at the end of the term.

14. I can confirm that Internet access is essential to the functioning of a smart home system. Home "energy management systems" require two-way communication, to remotely interact with their owner and the outside world. One very simple example is turning on or off a home's lights or heaters from a remote location. Internet access and it's ability for allowing two-way

[4] Millions of dollars in public funds have been expended promoting the brand. Including billboards, mailing, online marketing, Click! Mobile Movies, Participating in farmers' markets and other community events

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communication -originally envision and described by TPU management when creating the system- demonstrates the "Nexis" the Utilities' System holds for customers' energy management needs and the provision of electrical services.

Mitchell Shook (Signed Below Exhibits)

Exhibits

1. Attached hereto as Exhibit 1 and incorporated herein by this reference is a true and correct copy of 1997 City Council Resolution No. 33668 approving the creation of Click! Network[5], as produced by the City in response to my public records request.

2. Attached hereto as Exhibit 2 and incorporated herein by this reference is a true and correct copy of Ordinance No. 25930 adopted by the Tacoma City Council in 1996 establishing the system as "part of the Light Division" the telecommunication system being necessary and in "the public interest" -as produced by the City in response to my public records request.

3. Attached hereto as Exhibit 3 and incorporated herein by this reference is a true and correct copy of pertinent excerpt (§4.6) of the Tacoma City Charter, as downloaded from the City's website.

4. Attached hereto as Exhibit 4 and incorporated herein by this reference is a true and correct copy of an excerpt of from the Tacoma City Municipal Code,

[5] By approving Utility Board Amended Substitute Res. No U-9258 (1997)

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Section 12 -Utilities showing City Council has control over setting of rates for Click! System services -just like water and power.

5. Attached hereto as Exhibit 5 and incorporated herein by this reference is a true and correct copy of the signed "Term Sheet", dated April 2 2019, outlining the IRU and Asset Purchase Agreement for the System.

6. Attached hereto as Exhibit 6 and incorporated herein by this reference is a true and correct copy of "Exhibit A" from 1996 Tacoma City Council Ordinance No 25930 -establishing CATV and Internet Access Services.

7. Attached hereto as Exhibit 7 and incorporated herein by this reference is a true and correct copy of AMENDED RESOLUTION NO. U-10879 -with screen shot excerpt of "Whereas #13" indicating that providing Cable TV services improves the financial sustainability of Click!.

8. Attached hereto as Exhibit 8 and incorporated herein by this reference is a true and correct copy of CLICK! NETWORK COMMERCIAL OPERATIONS OPERATIONAL SUMMARY dated January 31, 2019, as obtained by public disclosure request.

9. Attached hereto as Exhibit 9 and incorporated herein by this reference is a true and correct copy of City of Tacoma City Council Resolution 39577 unanimously calling for an audit of Click! profits, as downloaded from the City of Tacoma website.

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10. Attached hereto as Exhibit 10 and incorporated herein by this reference is a true and correct copy of the Click! Network 2018 Cable TV Annual Report prepared for the City of Tacoma, as obtained by plaintiff's public disclosure request.

11. Attached hereto as Exhibit 11 and incorporated herein by this reference is a true and correct signed copy of City Council Resolution #39347, relating to Click! Network; authorizing Tacoma Power to prepare a business plan to provide, in addition to retail cable television, retail internet services including voice over data internet protocol ("VoIP"), commercial broadband and Gigabit service ("Retail Services"), as obtained by my public disclosure request.

12. Attached hereto as Exhibit 12 and incorporated herein by this reference is a true and correct copy of the August 11, 2017 Letter Agreement between TPU and Tacoma Housing Authority Regarding the BPA Salishan Water Heater Demand Response Project, as obtained by plaintiff's public disclosure request.

13. Attached hereto as Exhibit 13 and incorporated herein by this reference is a true and correct copy of pertinent screen shots (excerpts), from the City of Tacoma Electric System Revenue Bonds Prospectus for $70,575,000 Series 2017 CITY OF TACOMA, showing Tacoma Power is organized into six business units -one of which is Click! Network. Also, a "Superintendents Report" summarizing Click! activities and general overview of Click! Networks commercial operations.

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14. Attached hereto as Exhibit 14 and incorporated herein by this reference is a true and correct copy of the 1998 Letter from Mark Crisson, Director of Tacoma Utilities, to City Council with a National News Article about the founding and Creation of Click! Network and the consternation it caused with TCI -the incumbent provider at the time.

15. Attached hereto as Exhibit 15 and incorporated herein by this reference is a true and correct copy of an Excerpt from Testimony Concerning Telecommunications Accounting Issues by John M. Morrissey Deputy Chief Accountant, U.S. Securities and Exchange Commission Before the Subcommittee on Oversight and Investigations Committee on Financial Services March 21, 2002, as downloaded from SEC website[6]

16. Attached hereto as Exhibit 16 and incorporated herein by this reference is a true and correct copy of an excerpt from the closed caption transcript of March 26th, 2019 City Council meeting video recording, where Mayor Woodards calls the IRU a "Lease" and compares the "Lease Agreement" of Click! Network to the "Lease Agreement" for Cheney Stadium, as obtained by plaintiff's public disclosure request.

17. Attached hereto as Exhibit 17 and incorporated herein by this reference is a true and correct copy of notes read by City of Tacoma staff at the City of Tacoma's May 14, 2019 Joint City Council -Public Utility Board presentation on "Status Of Click! Negotiations".

[6] https://www.sec .gov/news/testimony/032102tsjmm.htm

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18. Attached hereto as Exhibit 18 and incorporated herein by this reference is a true and correct copy of a Labor Agreement related to what happen when Click! "Ceases Operation as City Owned Entity" -IBEW Agreement Tacoma City Council Resolution 40294

19. Attached hereto as Exhibit 19 and incorporated herein by this reference is a true and correct copy of Resolution No 40293, a Click! Employee Severance Agreement.

20. Attached hereto as Exhibit 20 is and incorporated herein by this reference is a true and correct copy of TPU Amended Resolution U-10828 -With a "Whereas" section acknowledging City Charter 4.6 and the legitimate requirement for a vote of the people before disposing of the Click! System.

21. Attached hereto as Exhibit 21 and incorporated herein by this reference is a true and correct copy of the System's 2018 Equipment List, provided as RFI "Exhibit C" by Click! Network in 2018.

22. Attached hereto as Exhibit 22 and incorporated herein by this reference is a true and correct copy of a report by The Executive Office of the President 2015, COMMUNITY-BASED BROADBAND SOLUTIONS, listing Click! Network as a municipal broadband network.

23. Attached hereto as Exhibit 23 and incorporated herein by this reference is a true and correct copy of A Light in Digital Darkness Public Broadband after Tennessee v. FCC. 20 YALE J. L. & TECH. 311 (2018)

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24. Attached hereto as Exhibit 24 and incorporated herein by this reference is a true and correct copy of Casting a Wider Net -How and Why State Laws Restricting Municipal Broadband Networks Must Be Modified -by Jeff Stricker 81 GEO. WASH. L. REV. 589, 614 (2013)

25. Attached hereto as Exhibit 25 and incorporated herein by this reference is a true and correct copy of Open Automated Demand Response Standard -Understanding OpenADR 2.0

26. Attached hereto as Exhibit 26 and incorporated herein by this reference is a true and correct copy of the USDA Broadband Opportunity Council's Report and Recommendations on Expanding Broadband Deployment - August 20, 2015

27. Attached hereto as Exhibit 27 and incorporated herein by this reference is a true and correct copy of a News Tribune Article citing OPED from Rainier Connect in opposition to creation of Click!, as downloaded from the News Tribune archive and the Internet.

28. Attached hereto as Exhibit 28 and incorporated herein by this reference is a true and correct copy of Mitchell Shook's Notes prepared for "Public Comment" at Tacoma City Council Meeting on March 13th, 2019

29. Attached hereto as Exhibit 29 and incorporated herein by this reference is a true and correct copy of an August 22, 1996 Letter from Steve

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Klein, Light Superintendent Regarding TCI and their Significant Opposition to the Creation of Click! Network.

30. Attached hereto as Exhibit 30 and incorporated herein by this reference is a true and correct copy of slides from the May 14th, 2019 Joint Study Session Update on Tacoma Power-Rainier Connect Contract Negotiations.

31. Attached hereto as Exhibit 31 and incorporated herein by this reference is a true and correct copy of an article "Is an IRU really an IRU?" By Randy Lowe, Davis Wright Tremaine LLP December 17, 2013, as downloaded from the Internet. Stating: "***an IRU is a lease***"

32. Attached hereto as Exhibit 31 and incorporated herein by this reference is a true and correct copy of History of Tacoma Public Utilities By David Wilma (2002) as downloaded from https://historylink.org/File/5025. Page 4 Cites "*Decades of Rivalry*"

I declare under penalty of perjury under the laws of the State of Washington that the forgoing is true and correct.

Signed at Tacoma, Washington this 21th day of May 2019

_____

Mitchell Shook
Plaintiff

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EXHIBIT 1

SUBSTITUTE

RESOLUTION NO. 33668

WHEREAS the City of Tacoma, Department of Public Utilities, Light Division desires to: (1) develop a state-of-the art fiber optic system to support enhanced electric system control, reliability and efficiency; (2) develop capability to meet the expanding telecommunications requirements in an evolving competitive electric market, the most critical of which is real-time, two-way interactive communications with individual energy consumers, (3) create greater revenue diversification through new business lines (i.e. internet transport, cable TV, etc.), (4) enhance traditional products and services, and (5) maximize return on Light Division assets, and

WHEREAS these desired capabilities can be provided with a broad band telecommunications system for all of the Light Division's service area, and

WHEREAS a broad band telecommunications system will have available capacity for future City Light Division needs and will also have the capacity to provide telecommunications services for data transport, high speed internet access, full cable television service, and other uses, and

WHEREAS the Light Division has retained consultants to review and analyze the feasibility of a broad band telecommunications system for the Light Division's service area, and a business plan has been prepared for this purpose (copies are on file with the Clerk), and

WHEREAS the cost of constructing, installing and commencing to operate a broad band telecommunications system will be approximately $65 million dollars, but the benefits to the Light Division, the City and the Light Division customers are projected to exceed and justify the initial cost, and

WHEREAS the City Council and Public Utility Board will continue to be involved in the future decision-making on this proposal including construction contracts and debt financing approvals, quarterly reviews on the project direction during the startup period, approval of agreements for use of City rights-of-way for telecommunications purposes which agreements will (to the extent required by law or City Council) treat the Light Division substantially similar to other franchises that the City grants for similar businesses, and

WHEREAS the City Council hereby finds and determines that the Light Division's proposal for a broad band telecommunications system is in the best interests of the City, will serve a public purpose, and should be approved and implemented; Now, therefore,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF TACOMA:

That the Council hereby finds and determines that the City Light Division's broad band telecommunications proposal is in the best interests of the City, will serve a public purpose and that the said Business Plan is sufficient and adequate, therefore, the Council hereby approves the Light Division's proposal including the Business Plan and the Department of Public Utilities, Light Division is hereby authorized to proceed to implement said proposal for a broad band telecommunications system, and

That the proposed broad band telecommunications system shall be owned, operated and controlled by the City of Tacoma Department of Public Utilities Light Division with the Public Utility Board providing oversight and approval of business and third party agreements, as appropriate under the City Charter, Tacoma Municipal Code and other applicable laws, and the City Council shall continue to be involved in the major policy decisions including

construction contracts, rate setting policies, debt financings, the public rights-of-way use for telecommunications agreements and quarterly reviews.

Adopted April 8, 1997

Mayor

Attest: City Clerk

Approved as to form & legality:

~~Chief~~ Assistant City Attorney

Requested by Public Utility
Board Resolution No. U-9258

599c

Request for Board meeting of March 26, 2997

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES

REQUEST FOR RESOLUTION

Date: March 19, 1997

INSTRUCTIONS: File request in the Office of the Director of Utilities as soon as possible but not later than nine working days prior to Board meeting at which it is to be introduced. Completion instructions are contained in Administrative Policy POL-104.

1. Summary title for Utility Board agenda: (not to exceed twenty-five words)
   Authorize the development of a broad band telecommunications network to improve electric utility service and improve the telecommunications infrastructure available to the community.

2. A resolution is requested to: (brief description of action to be taken, by whom, where, cost, etc.)
   Approve the Light Division's proposal including the business plan for a broad band telecommunications system and authorize the Light Division to proceed to implement the telecommunications system.

   The Light Division projects that the cost for the construction and installation of this telecommunications system will be approximately $55 million dollars to construct, plus more than $10 million dollars for startup operations. However, the Light Division believes that the overall benefits to the City, the Light Division, and its customers will exceed the projected costs.

3. Summarized reason for resolution:
   The Light Division has undertaken an extensive telecommunications study that includes market research, telecommunications industry analysis, an examination of the regulatory environment, and research on similar activities in other municipalities. Presentations have been made to neighborhood councils, chambers of commerce, local economic development groups, and the Tacoma Public School Board. A public hearing on the proposed telecommunications system was held by the Public Utility Board on March 12, 1997, and another public hearing was held by the City Council on March 18, 1997. Information summarizing the Telecommunications study and our recommendations was made available at the presentations and public hearings.

   In addition to the benefits to the Light Division that the system would deliver through improved communications abilities, the system will also have the ability to transport data, provide high speed Internet access, and deliver full cable television service.

4. Attachments:
   a. Letter to the Public Utility Board and City Council from Mark Crisson

5. ☒ Funds available

6. Deviations requiring special waivers: ☒ None

Originated by:	Requested by:	Approved:
Section Head	Division Head	for Director of Utilities

REQRES.DOC

Tacoma Public Utilities

Mark Crisson
Director

3628 South 35th Street
P.O. Box 11007
Tacoma, WA 98411-0007

Divisions
Light
Water
Belt Line

March 20, 1997

To the Chairman and Members of the Public Utility Board and
To the Mayor and Members of the City Council

RESOLUTION NO. U- 9258

RECOMMENDATION

The Light Division requests approval by the Public Utility Board and the City Council to develop a broad band telecommunications network as described in the Light Division Telecommunication Study. This action authorizes project implementation and the initiation of design and contract specifications. The Light Division will bring subsequent requests for construction contract and debt issuance approval to the Public Utility Board and City Council as the project progresses. Both policy bodies will also be periodically advised of project status during the development process.

BACKGROUND

In preparation for this request, the Light Division has undertaken an extensive telecommunications study that includes market research, telecommunications industry analysis, an examination of the regulatory environment, and research on similar activities in other municipalities. Staff has made presentations to neighborhood councils, chambers of commerce, local economic development groups, the Tacoma Port Commission, and the Tacoma Public School Board. Two joint Public Utility Board/City Council study sessions were held. A public hearing on the proposed telecommunications system was held by the Public Utility Board on March 12, 1997, and another public hearing was held by the City Council on March 18, 1997. Information summarizing the Telecommunications study and our recommendations was made available at the presentations and public hearings.

The Light Division estimates the cost of this telecommunications system will be approximately $55 million dollars for construction and installation, plus more than $10 million dollars for startup operations. The business plan indicates excellent financial potential even under conservative revenue and market penetration assumptions. We recognize the plan's projections are no guarantee of success, but we think the project risks are manageable and justified given the project benefits. These benefits include:

- Improves electric service by enabling distribution system automation, market access, and real-time, interactive communication with customers

- Provides better telecommunications and cable television service sooner and cheaper than other providers will deliver

- Significantly enhances regional economic development and quality of life by creating state-of-the-art telecommunications infrastructure and providing it to all businesses and residences throughout the community

- Creates opportunities for public private partnerships in the wholesale leasing of system capacity to retail telecommunications service providers

- Provides additional revenue to the Light Division and General Government through expansion of the market for telecommunications services

SUMMARY

The proposed telecommunications system will strengthen the Light Division's competitive position in the electric power industry through the provision of enhanced electric and telecommunication services to *all* Light Division customers. This system will serve a public purpose and is in the best interests of the City.

Very truly yours,

Mark Crisson
Director of Utilities

RESOLUTION NO. AMENDED SUBSTITUTE U-9258

WHEREAS the City of Tacoma, Department of Public Utilities, Light Division desires to: (1) develop a state-of-the-art fiber optic system to support enhanced electric system control, reliability and efficiency; (2) develop capability to meet the expanding telecommunications requirements in an evolving competitive electric market, the most critical of which is real-time, two-way interactive communications with individual energy consumers, (3) create greater revenue diversification through new business lines (i.e. internet transport, cable TV, etc.), (4) enhance traditional products and service, and (5) maximize return on Light Division assets, and

WHEREAS these desired capabilities can be provided with a broad band telecommunications system for all of the Light Division's service area, and

WHEREAS a broad band telecommunications system will have available capacity for future Light Division needs and will also have the capacity to provide Telecommunications services for data transport, high speed internet access, full cable television service, and other uses, and

WHEREAS the Light Division has retained consultants to review and analyze the feasibility of a broad band telecommunications systems for the Light Division's service area, and a business plan has been prepared for this purpose (copies are on file with the Clerk), and

WHEREAS the cost of constructing, installing and commencing to operate a broad band telecommunications system will be approximately $65 million dollars, but the benefits to the Light Division, the City and the Light Division customers are projected to exceed and justify the initial cost, and

WHEREAS the City Council and Public Utility Board will continue to be involved in the future decision-making on this proposal including construction contracts, and debt financing approvals, quarterly reviews on the project direction during the startup period, approval of agreements for use of City rights-of-way for telecommunications purposes which agreements will (to the extent required by law or City Council) treat the Light Division substantially similar to other franchises that the City grants for similar businesses, and

WHEREAS the Public Utility Board hereby finds and determines that the Light Division's proposal for a broad band telecommunications system is in the best interests of the City, will serve as a public purpose, and should be approved and implemented; Now, therefore,

BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

That the Board hereby approves the Light Division's proposal including the Business Plan for a broad band telecommunications system, and the Board recommends that the City Council approve a resolution to authorize the Light Division to proceed to implement said proposal for a broad band telecommunications system, and the Board recommends that the City Council continue to be involved in the major policy decisions including construction contracts, rate setting policies, debt financings, the public rights-of-way use agreements for telecommunications and quarterly reviews.

Approved as to form & legality:

~~Chief~~ Assistant City Attorney

Chairman

Secretary

Clerk

Adopted April 9, 1997

599d(a)

EXHIBIT 2

ORDINANCE NO. 25930

AN ORDINANCE of the City of Tacoma, Washington establishing a telecommunications system as part of the Light Division, supplementing Ordinance No. 23514 and providing for the issuance and sale of the City's Electric System Revenue Bonds in the aggregate principal amount of not to exceed $1,000,000 to provide part of the funds necessary for the acquisition, construction and installation of additions and improvements to the telecommunications system.

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ORDINANCE NO. 25930

AN ORDINANCE of the City of Tacoma, Washington establishing a telecommunications system as part of the Light Division, supplementing Ordinance No. 23514 and providing for the issuance and sale of the City's Electric System Revenue Bonds in the aggregate principal amount of not to exceed $1,000,000 to provide part of the funds necessary for the acquisition, construction and installation of additions and improvements to the telecommunications system.

WHEREAS, the City of Tacoma (the "City") owns and operates an electric utility system (the "Electric System"); and

WHEREAS, the Ordinance provides that the City may create a separate system as part of the Electric System and pledge that the income of such separate system be paid into the Revenue Fund; and

WHEREAS, RCW 35A.11.020 authorizes the City to operate and supply utility and municipal services commonly or conveniently rendered by cities or towns; and

WHEREAS, RCW 35.92.050 authorizes cities to construct and operate works and facilities for the purpose of furnishing any persons with electricity and other means of power and to regulate and control the use thereof or lease any equipment or accessories necessary and convenient for the use thereof; and

WHEREAS, the Utility Board and the Council have determined that it is in the best interest of the City that it install a telecommunications system among all of its Electric System substations in order to improve communications for automatic substation control; and

WHEREAS, the City has determined that it is prudent and economical to provide additional capacity on such telecommunications system to provide the Electric System with sufficient capacity to perform or enhance such functions as automated meter reading and billing, appliance control, and load shaping; and

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WHEREAS, the Light Division may wish to connect such telecommunications system to individual residences and businesses in its service area or to other providers of telecommunications services; and

WHEREAS, the City has determined that it should create a telecommunications system as part of the Electric System in order to construct these telecommunications improvements; and

WHEREAS, the City by Ordinance No. 23514 passed November 20, 1985 (as amended and supplemented, the "Ordinance"), authorized Electric System Revenue Bonds (the "Bonds") of the City to be issued in series, made covenants and agreements in connection with the issuance of such Bonds and authorized the sale and issuance of the first series of such Bonds in the aggregate principal amount of $125,505,000 (the "1985 Bonds") for the purpose of refunding all of the City's then outstanding light and power revenue bonds; and

WHEREAS, the 1985 Bonds were issued under date of December 1, 1985 and are now outstanding; and

WHEREAS, the City has heretofore issued ten additional series of Bonds on a parity with the 1985 Bonds, which bonds were issued and are now outstanding:

Authorizing Ordinance	Bonds Dated	Principal Amount Issued
23663	July 1, 1986	$ 30,000,000
24073	May 1, 1988	60,400,000
24296	May 1, 1989	48,500,000
25004	December 1, 1991	13,800,000
25004	December 5, 1991	42,400,000
25004	December 5, 1991	42,400,000
25089	May 1, 1992	31,295,000
25165	September 1, 1992	131,675,000
25333	August 1, 1993	3,318,500
25489	May 10, 1994	135,665,000

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WHEREAS, after due consideration, it appears to the City Council and the Public Utility Board (the "Board") that it is in the best interest of the City to create and construct a telecommunications system and to issue Electric System Revenue Bonds to finance a portion of the costs of such construction and that the exact amount of Bonds and terms of the Bonds shall be determined by resolution of the Council; and

WHEREAS, Section 10.1 of the Ordinance provides that the City may, without the consent of the owners of any Bonds, adopt an ordinance supplemental to or amendatory of the Ordinance to provide for the issuance of Future Parity Bonds and to prescribe the terms and conditions pursuant to which such Bonds may be issued, paid or redeemed; and

WHEREAS, the City desires to provide that the issuance and sale of the Bonds will be issued and secured under the Ordinance as amended and supplemented by Ordinance No. 23663, Ordinance No. 24073, Ordinance No. 24296, Ordinance No. 25004, Ordinance No. 25089, Ordinance No. 25165, Ordinance No. 25333, Ordinance No. 25489 and this Ordinance;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF TACOMA:

ARTICLE I

DEFINITIONS AND AUTHORITY

Section 1.1. Supplemental Ordinance. This Ordinance No. 25930 is supplemental to and is adopted in accordance with Section 5.1 and Article X of the Ordinance and shall be known as the Eighth Supplemental Electric System Revenue Bond Ordinance (the "Eighth Supplemental Ordinance").

Section 1.2. Definitions.

A. All terms that are defined in Section 1.1 of the Ordinance shall have the same meanings, respectively, in this Eighth Supplemental Ordinance as such terms are given in

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Section 1.1 of the Ordinance, as amended and supplemented by the First, Second, Third, Fourth, Fifth, Sixth, and Seventh Supplemental Ordinances.

B. In this Eighth Supplemental Ordinance:

"Arbitrage and Tax Certification" means the certificate executed by the Director of Finance of the City pertaining to the calculation and payment of any Rebate Amount with respect to the Bonds.

"Bond Sale Resolution" means the resolution to be adopted by the City Council setting forth the final terms of the Bonds.

"Bonds" means the Electric System Revenue Bonds, 199__, of the City issued pursuant to the Ordinance and this Eighth Supplemental Ordinance.

"Code" means the Internal Revenue Code of 1986, as amended, together with corresponding and applicable final, temporary or proposed regulations and revenue rulings issued or amended with respect thereto by the United States Treasury or the Internal Revenue Service, to the extent applicable to the Bonds.

"Eighth Supplemental Ordinance" means this Ordinance No. 25930.

"Rebate Amount" means the amount, if any, determined to be payable with respect to the Bonds by the City to the United States of America in accordance with Section 148(f) of the Code.

Section 1.3. Authority for this Eighth Supplemental Ordinance. This Eighth Supplemental Ordinance is adopted pursuant to the provisions of the laws of the State of Washington, the Tacoma City Charter and the Ordinance.

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ARTICLE II

FINDINGS; ESTABLISHMENT OF THE TELECOMMUNICATIONS PROJECT AS A SEPARATE SYSTEM; AND ADOPTION OF PLAN AND SYSTEM

Section 2.1. Establishment of Telecommunication System. The City hereby creates a separate system of the City's Light Division to be known as the telecommunications system (the "Telecommunications System"). The public interest, welfare, convenience and necessity require the creation of the Telecommunications System, contemplated by the plan adopted by Section 2.2 hereof, for the purposes set forth in Exhibit A. The City hereby covenants that all revenues received from the Telecommunications System shall be deposited into the Revenue Fund.

Section 2.2. Adoption of Plan; Estimated Cost. The City hereby specifies and adopts the plan set forth in Exhibit A for the acquisition, construction and implementation of the Telecommunications System (the "Telecommunications Project"). The City may modify details of the foregoing plan when deemed necessary or desirable in the judgment of the City. The estimated cost of the Telecommunications Project, including funds necessary for the payment of all costs of issuing the Bonds, is expected to be approximately $40,000,000.

Section 2.3. Findings of Parity. The Council hereby finds and determines as required by Section 5.2 of the Ordinance as follows:

A. The Bonds will be issued for financing capital improvements to the Electric System.

B. At the time of issuance and delivery of the Bonds, there will be no deficiency in the Bond Fund and no Event of Default shall have occurred.

C. At the time of issuance and delivery of the Bonds, there will be on file with the City Clerk the certificate of the Director of Finance required by Section 5.2(B)(1) or Section 5.2(C) of the Ordinance.

necessary to pay principal of and interest on Bonds, and may be used to pay any Rebate Amount.

Section 6.2. Disposition of Proceeds. The proceeds of the Bonds are hereby appropriated for the following purposes and shall be deposited as follows:

1. The amount equal to the interest accruing on the Bonds from their dated date to the date of their delivery shall be deposited in the Interest Account in the Bond Fund and invested in Permitted Investments.

2. To the extent permitted by the Code, the amount that when added to other money in the Reserve Account will ensure that the total amount in the Reserve Account equals the Reserve Account Requirement shall be deposited in the Reserve Account in the Bond Fund.

3. The balance of the Bond proceeds shall be deposited in the Construction Account and used for the purposes specified in Sections 6.1, including payment of costs of issuance of the Bonds.

ARTICLE VII

SALE OF BONDS

Section 7.1. Sale of Bonds. The Bonds may be sold by competitive or negotiated sale, which sale shall be approved by the Bond Sale Resolution.

Section 7.2. Official Statement; Insurance. The Director and/or Deputy Director of Utilities are authorized to prepare a preliminary official statement for the marketing of the Bonds and to solicit bids for bond insurance. The Bond Sale Resolution shall approve the preliminary and final official statements and any bond insurance.

ARTICLE VIII

MISCELLANEOUS

Section 8.1. Defeasance. In the event that the City, in order to effect the payment, retirement or redemption of any Bond, sets aside in the Bond Fund or in another special account, advance refunding bond proceeds or other money lawfully available or direct obligations of the Department of the Treasury of the United States of America ("Government Obligations"), or any combination of such proceeds, money and/or Government Obligations, in amounts which, together with known earned income from the investment thereof are sufficient to redeem, retire or pay such Bond in accordance with its terms and to pay when due the interest and redemption premium, if any, thereon, and such proceeds, money and/or Government Obligations are irrevocably set aside and pledged for such purpose, then no further payments need be made into the Bond Fund for the payment of the principal of and interest on such Bond, and the owner of such Bond shall cease to be entitled to any lien, benefit or security of the Ordinance except the right to receive payment of principal, premium, if any, and interest from such special account, and such Bond shall be deemed not to be outstanding hereunder.

Section 8.2. Undertaking to Provide Ongoing Disclosure. In the Bond Sale Resolution the City shall undertake to provide certain ongoing disclosure for the benefit of the owners of the Bonds as required by Section (b)(5) of the Securities and Exchange Commission's Rule 15c2-12 under the Securities and Exchange Act of 1934.

Section 8.3. Severability. If any one or more of the provisions of this Eighth Supplemental Ordinance is or are held by any court of competent jurisdiction to be contrary to law, then such provision or provisions shall be null and void and shall be deemed separable from the remaining provisions and shall in no way affect the validity of the other provisions of this Eighth Supplemental Ordinance or the Bonds.

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Section 8.4. Effective Date. This Eighth Supplemental Ordinance shall take effect and be in force thirty days after its passage, approval and publication as required by law. Any actions taken pursuant to this Eighth Supplemental Ordinance before its effective date and after its passage are hereby ratified, approved and confirmed.

INTRODUCED AND READ FOR THE FIRST TIME at a regular meeting of the City Council held the 16th day of July, 1996.

PASSED by the City Council of the City of Tacoma, Washington, and authenticated by its Mayor at a regular meeting of the Council held this 23rd day of July, 1996.

CITY OF TACOMA, WASHINGTON

By _____
Mayor

Attest:

Rick Rosenbladt
City Clerk

APPROVED AS TO FORM:

City Attorney, ch. 45 57.

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EXHIBIT A

TELECOMMUNICATIONS PROJECT

The Telecommunications Project will include some or all of the following elements:

Infrastructure improvements

Construct a hybrid fiber coax ("HFC") telecommunications infrastructure consisting of fiber optic rings and branches connecting nodes throughout the Light Division service area. This telecommunications system will be asymmetrically two-way capable. It will interconnect all Light Division substations. Connections may also be made with Light Division customers and with other providers of telecommunications infrastructure and services. This telecommunications system will have 500 channels. It will utilize existing Light Division rights-of-way.

Functions to be performed by infrastructure improvements

Through construction of the HFC telecommunications system, the Light Division's Telecommunications System will be capable of performing some or all of the following functions:

- conventional substation communications functions
- automated meter reading (electric and water)
- automated billing (electric and water)
- automated bill payment (electric and water)
- demand side management (DSM) functions, such as automated load (*e.g.* water heater) control
- provision of information to customers that is relevant to their energy and water purchasing decisions (*e.g.* information on time-of-use or "green" power rates)
- distribution automation
- remote turn on/turn off for electric and water customers
- city government communications functions
- CATV service
- transport of signals for service providers offering telecommunications services (*e.g.* Personal Communications Service (PCS), video on demand, high speed data, as well as conventional wired and wireless telecommunications services)
- Internet access service

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Tacoma Public Utilities

Mark Crisson
Director

3628 South 35th Street
P.O. Box 11007
Tacoma, WA 98411-0007

Divisions
Light
Water
Belt Line

June 19, 1996

To the Mayor and Members of the City Council
and
To the Chairman and Members of the Public Utility Board

RE: Proposed Bond Ordinance Approval and Authorization to Proceed With a Declaratory Judgment Legal Action to Confirm Authority to Construct and Operate a Fiber Optics System With Cable Television and Telecommunications Capabilities/Board Resolution U-9198

As we previously discussed with you, the Light Division is proceeding to move forward with a further in-depth analysis of the feasibility of a fiber optics system. We will not move forward with this project until we have reviewed this future analysis with you and obtained your further appropriate approval.

This enabling legislation ordinance is specifically necessary at this time, however, in order to seek and obtain a declaratory judgment by the appropriate Washington State court to clarify the legal authority for certain aspects of the project. Chief Assistant City Attorney Mark Bubenik's confidential memorandum dated June 21, 1996 which has been furnished to each of you delineates the legal issues and procedures involved.

Very truly yours,

Mark Crisson
Director of Utilities

f/m/cabletv2

Tacoma Public Utilities

MEMORANDUM

To: Rick Rosenbladt, City Clerk

From: Mark Bubenik, Chief Assistant City Attorney

Date: June 27, 1996

Subject:

Please place the following proposed resolution(s) ordinance(s) on the agenda for the July 16, 1996 Council Meeting:

U-9198 Authorize approval of a proposed bond ordinance for the City of Tacoma, Light Division to clarify its legal authority to develop telecommunication capacity for cable tv outside the City limits

RESOLUTION NO. U-9198

WHEREAS the Light Division has determined that a telecommunications network system-wide will provide substantial benefits for the Light Division for substation communications, meter reading, demand side management, communications and other beneficial Light Division Electric System uses, and

WHEREAS by the installation of additional telecommunications capactiy, this system would have the capability of providing additional public benefits for the City, and Light Division ratepayers, and

WHEREAS for the above-stated purposes it will be necessary to approve a plan and system ordinance declaring the estimated cost thereof providing for the method of financing and providing for the adoption and implementation thereof, and a proposed ordinance providing for the issuance and sale of special obligation bonds of the City of Tacoma consisting of one million dollars ($1,000,000) of electric system revenue bonds to be issued to provide funds for such purposes, all as more specifically stated in the said proposed ordinance, which by this reference is incorporated herein, and

WHEREAS it is in the best public interest to approve the proposed ordinance and to request its passage by the City Council; Now, therefore,

BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

That the findings, terms and conditions of said proposed ordinance is

approved and the Council of the City of Tacoma is requested to concur by passing an ordinance substantially in the same form as attached and as approved by the City Attorney.

Approved as to form & legality:

Mark Bubenik

Chief Assistant City Attorney

Lydia Stevenson

Clerk

Carl W. Virgil

Chairman

Bil Moss

Acting Secretary

Adopted 6/26/96

ASLRA

Ordinance No. 25930

First Reading of Ordinance: JUL 16 1996 (Final reading 7/23/96)

Final Reading of Ordinance: JUL 23 1996

Passed: JUL 23 1996

Roll Call vote:

MEMBERS	AYES	NAYS	ABSTAIN	ABSENT
Mr. Baarsma	✓			
Mr. Crowley	✓			
Mr. DeForrest	✓			
Mr. Evans	✓			
Mr. Kirby	✓			
Dr. McGavick	✓			
Mr. Miller	✓			
Dr. Silas	✓			
Mayor Moss	✓			

MEMBERS	AYES	NAYS	ABSTAIN	ABSENT
Mr. Baarsma				
Mr. Crowley				
Mr. DeForrest				
Mr. Evans				
Mr. Kirby				
Dr. McGavick				
Mr. Miller				
Dr. Silas				
Mayor Moss				

EXHIBIT 3

Disposal of Utility Properties

Section 4.6

The City shall never sell, lease, or dispose of any utility system, or parts thereof essential to continued effective utility service, unless and until such disposal is approved by a majority vote of the electors voting thereon at a municipal election in the manner provided in this charter and in the laws of this state.

TACOMA CITY CHARTER

Effective June 1, 1953
Last Amended November 4, 2014

Disposal of Utility Properties

Section 4.6

The City shall never sell, lease, or dispose of any utility system, or parts thereof essential to continued effective utility service, unless and until such disposal is approved by a majority vote of the electors voting thereon at a municipal election in the manner provided in this charter and in the laws of this state.

CHARTER OF THE
CITY OF TACOMA

PREPARED BY A BOARD OF FIFTEEN
FREEHOLDERS ELECTED MARCH 11, 1952

SUBMITTED TO AND ADOPTED BY THE
QUALIFIED ELECTORS AT A SPECIAL ELECTION
HELD NOVEMBER 4, 1952

EFFECTIVE JUNE 1, 1953
AMENDED NOVEMBER 4, 1958
AMENDED SEPTEMBER 15, 1970
AMENDED SEPTEMBER 18, 1973
AMENDED NOVEMBER 6, 1979
AMENDED SEPTEMBER 16, 1980
AMENDED NOVEMBER 8, 1983
AMENDED NOVEMBER 3, 1992
AMENDED NOVEMBER 2, 2004
AMENDED NOVEMBER 4, 2014

CHARTER OF THE CITY OF TACOMA

TABLE OF CONTENTS

Rates

Section 4.3 – The City shall have the power, subject to limitations imposed by state law and this charter, to fix and from time to time, revise such rates and charges as it may deem advisable for supplying such utility services the City may provide. The rates and charges for services to City departments and other public agencies shall not be less than the regular rates and charges fixed for similar services to consumers generally. The rates and charges for services to consumers outside the corporate limits of the city may be greater but shall not be less than the rates and charges for similar service to consumers within the corporate limits of the city.

Diversion of Utility Funds

Section 4.4 – The Council may by ordinance impose upon any of the City-operated utilities for the benefit of the general fund of the City, a reasonable gross earnings tax which shall not be disproportionate to the amount of taxes the utility or utilities would pay if privately owned and operated, and which shall not exceed eight percent; and shall charge to, and cause to be paid by, each such utility, a just and proper proportion of the cost and expenses of all other departments or offices of the City rendering services thereto or in behalf thereof.

Section 4.5 – The revenue of utilities owned and operated by the City shall never be used for any purposes other than the necessary operating expenses thereof, including the aforesaid gross earnings tax, interest on and redemption of the outstanding debt thereof, the making of additions and betterments thereto and extensions thereof, and the reduction of rates and charges for supplying utility services to consumers. The funds of any utility shall not be used to make loans to or purchase the bonds of any other utility, department, or agency of the City.

Disposal of Utility Properties

Section 4.6 – The City shall never sell, lease, or dispose of any utility system, or parts thereof essential to continued effective utility service, unless and until such disposal is approved by a majority vote of the electors voting thereon at a municipal election in the manner provided in this charter and in the laws of this state.

Franchises for Water or Electric Utilities

Section 4.7 – The legislative power of the City is forever prohibited from granting any franchise, right or privilege to sell or supply water or electricity within the City of Tacoma to the City or to any of its inhabitants as long as the City owns a plant or plants for such purposes and is engaged in the public duty of supplying water or electricity; provided, however, this section shall not prohibit issuance of temporary permits authorized by the Council upon the recommendation of the Utility Board of the City of Tacoma for the furnishing of utility service to inhabitants of the City where it is shown that, because of peculiar physical circumstances or conditions, the City cannot reasonably serve said inhabitants.

(Amendment approved by vote of the people September 18, 1973)

The Public Utility Board

Section 4.8 – There is hereby created a Public Utility Board to be composed of five members, appointed by the Mayor and confirmed by the City Council, for five-year terms; provided, that in the appointment of the first Board, on the first day of the month next following the taking of office by the first Council under this charter, one member shall be appointed for a term of one year, one for a term of two years, one for a term of three years, one for a term of four years, and one for a term of five years, and at the expiration of each of the terms so provided for, a successor shall be appointed for a term of five years. Vacancies shall be filled for the unexpired term in the same manner as provided for regular appointments.

(Amendment approved by vote of the people November 2, 2004)

EXHIBIT 4

TITLE 12

Utilities

TITLE 12
UTILITIES

Chapters:

CHAPTER 12.13
CLICK! NETWORK CABLE TV PRODUCTS

Sections:

12.13.010 Click! Network Cable TV products – inside the City of Tacoma.

Click! Cable TV Products	Recurring Monthly Price
Broadcast--Includes broadcast, local, and PEG channels	$21.62
Standard--Includes a large variety of satellite, broadcast, basic, local channels, and PEG	$65.87

Click! Special Products	Recurring Monthly Price
Premium Channels (e.g., HBO, Showtime, Cinemax, Starz, commercial digital music, and others)	$2.00 – $29.95
Pay-per-View VOD Movies, Events, and Specials (e.g., NBA and NHL package subscriptions)	$.99 – $300.00
Set-top Receivers, Adjunct Equipment	$0.00 – $19.99
Low-income/Disabled and Senior Discount (Must meet Tacoma Power customer requirements for eligibility)	20% discount on Broadcast or Standard service
Cable TV Guide (Paper Magazine; subject to annual 5% adjustment for mailing costs)	$4.99

Bulk Rates for Apartment Complexes	Recurring Monthly Price	
1 – 25 Units (full retail rate)	Broadcast Standard	$21.62 $65.87
26 – 150 Units (5% discount on broadcast; 10% discount on standard)	Broadcast Standard	$20.54 $59.28
151 – 300 Units (5% discount on broadcast; 15% discount on standard)	Broadcast Standard	$20.54 $55.99
300 Units and Above (5% discount on broadcast; 20% discount on standard)	Broadcast Standard	$20.54 $52.70

Other Fees	Non-recurring Price
Hourly Service Charge	$40.00
Connect – Install new wiring	$50.00
Connect – Using existing wiring	$40.00
Install Additional Outlet	$20.00
Unreturned Remote Control	$10.00
Nonstandard Installation	Hourly service charge plus materials
Unreturned Rented Equipment	$50.00 – 600.00
Miscellaneous Adjunct Equipment	$ 5.00 – 150.00
Late Payment Charges	$ 6.99
Credit Card Misuse Fee	$20.00
Miscellaneous Customer Premise Visit (VCR connection, late payment pick-up fee, install A/B switch, and nonpayment reconnection fee)	Hourly service charge
Returned Item Fee (NSF check)	$20.00
Nonpayment Reactivation Fee (Equipment Reauthorization)	$ 1.99

(Ord. 28553 Ex. A; passed Nov. 20, 2018: Ord. 28408 Ex. A; passed Jan. 31, 2017: Ord. 28223 Ex. A; passed May 20, 2014: Ord. 28153 Ex A; passed June 11, 2013: Ord. 28098 Ex. A; passed Nov. 13, 2012: Ord. 28049 Ex. A; passed Feb. 14, 2012: Ord. 27843 Ex. A,B; passed Nov. 3, 2009: Ord. 27717 Ex. A; passed Jun. 17, 2008: Ord. 27331 § 1; passed Mar. 22, 2005: Ord. 27059 § 1; passed Mar. 18, 2003: Ord. 27007 § 2; passed Nov. 19, 2002)

12.13.015 Click! Network Cable TV products and services – outside the City of Tacoma.

Click! Cable TV Products	Recurring Monthly Price
Broadcast – Includes broadcast, local, and PEG channels	$23.38
Standard – Includes a large variety of satellite, broadcast, local channels, and PEG	$68.50

Click! Special Products	Recurring Monthly Price
Premium Channels (e.g., HBO, Showtime, Cinemax, Starz, commercial digital music, and others)	$2.00 - 29.95
Pay-per-View VOD Movies, Events, and Specials (e.g., NBA and NHL package subscriptions)	$.99 - 300.00
Set-top Receivers, Adjunct Equipment	$0.00 - 19.99
Low-income/Disabled and Senior Discount (Must meet Tacoma Power customer requirements for eligibility)	20% discount on Broadcast or Standard service
Cable TV Guide (Paper Magazine; subject to annual 5% adjustment for mailing costs)	$4.99

Bulk Rates for Apartment Complexes	Recurring Monthly Price
1 – 25 Units (full retail rate)	Broadcast $23.38 Standard $68.50
26 - 150 Units (5% discount on broadcast; 10% discount on standard)	Broadcast $22.21 Standard $61.65
151 - 300 Units (5% discount on broadcast; 15% discount on standard)	Broadcast $22.21 Standard $58.23
300 Units and Above (5% discount on broadcast; 20% discount on standard)	Broadcast $20.23 Standard $49.91
Other Fees	**Non-recurring Monthly Price**
Hourly Service Charge	$40.00
Connect--Install new wiring	$50.00
Connect--Using existing wiring	$40.00
Install Additional Outlet	$20.00
Unreturned Remote Control	$10.00
Nonstandard Installation	Hourly service charge plus materials
Unreturned Rented Equipment	$50.00 - 600.00
Miscellaneous Adjunct Equipment	$ 5.00 - 50.00
Late Payment Charges	$ 6.99
Credit Card Misuse Fee	$20.00
Miscellaneous Customer Premise Visit (VCR connection, late payment pick-up fee, install A/B switch, and nonpayment reconnection fee)	Hourly service charge
Returned Item Fee (NSF check)	$20.00
Nonpayment Reactivation Fee (Equipment Reauthorization)	$ 1.99

(Ord. 28553 Ex. A; passed Nov. 20, 2018: Ord. 28408 Ex. A; passed Jan. 31, 2017: Ord. 28223 Ex. A; passed May 20, 2014: Ord. 28153 Ex A; passed June 11, 2013: Ord. 28098 Ex. A; passed Nov. 13, 2012: Ord. 28049 Ex. A; passed Feb. 14, 2012: Ord. 27843 Ex. A,B; passed Nov. 3, 2009: Ord. 27717 Ex. A; passed Jun. 17, 2008: Ord. 27331 § 2; passed Mar. 22, 2005: Ord. 27059 § 2; passed Mar. 18, 2003)

12.13.020 Click! Network Cable TV additional sports channels for businesses.

ROOT Sports Pricing Scale (for businesses)	
Estimated Viewing Area	**Price**
0 – 50 Patrons	$ 46.88
51 – 100 Patrons	$ 62.50
101 – 150 Patrons	$ 93.75
151 – 200 Patrons	$125.00
200+ Patrons	$156.00
Non-Hospitality Business	$ 12.00
Big Ten Sports Channel (for businesses)	
Commercial Big Ten	$ 8.50

(Ord. 28553 Ex. A; passed Nov. 20, 2018: Ord. 28049 Ex. A; passed Feb. 14, 2012: Ord. 27331 § 3; passed Mar. 22, 2005: Ord. 27007 § 2; passed Nov. 19, 2002)

12.13.030 Broadband services and internet service providers.

Products	Monthly Rate Range	Monthly Variable Rate[1]	Monthly HUB Fee[2]	Engineering NRC[3]	HUB NRC[4]	Labor & Materials[5]
Click! ISP Advantage	$5 – $150	TBD	TBD	N/A	N/A	TBD
Click! Net 1	$25 – $1,200	TBD	TBD	TBD	TBD	TBD
Click! Net 3	$125 – $4,500	TBD	TBD	TBD	TBD	TBD
Click! Net OC3	$2,170 – $4,500	TBD	TBD	TBD	TBD	TBD
Click! Net OC12	$3,100 – $12,000	TBD	TBD	TBD	TBD	TBD
Click! Net OC48	$10,000 – $30,000	TBD	TBD	TBD	TBD	TBD
Click! Net 1 Includes an Internet DS1 Product – Click! Net 3 Includes an Internet DS3 Product – Click! Net OC3 Includes a 100 Base-T						
[1] Actual pass-through carrier fees with a 10% administration fee.						
[2] Actual monthly Hub cost for maintaining connection.						
[3] Actual costs to engineer the job.						
[4] Actual cost to terminate the circuit(s) in the Hub.						
[5] Actual costs for current labor rates and materials. A 10% handling fee will apply to the materials.						

(Ord. 27007 § 2; passed Nov. 19, 2002)

12.13.040 Applicable taxes and franchise fees.

The cable television prices and charges set forth in this chapter shall be subject to all applicable taxes and franchise fees.

(Ord. 27007 § 2; passed Nov. 19, 2002)

12.13.050 Promotional pricing.

Click! staff may offer promotional pricing to attract new customers in a manner consistent in amount and duration with the practices of its industry peers and market competitors.

(Ord. 28408 Ex. A; passed Jan. 31, 2017)

EXHIBIT 5

April 2, 2019

Ms. Jackie Flowers
Director
Tacoma Public Utilities
1224 Martin Luther King Jr. Way
Tacoma, WA 98405

Re: Proposed Partnership for Tacoma Power's Click! Network

Dear Ms. Flowers:

The purpose of this Letter of Intent ("LOI") is to outline the terms upon which Rainier Connect is willing to enter into a proposed transaction with the City of Tacoma ("City") Department of Public Utilities ("Tacoma Public Utilities") by which Rainier Connect would partner with Tacoma Public Utilities to preserve and enhance the robust competitive communications services market environment envisioned by the leaders of the City and Tacoma Public Utilities and to do so in a manner that is consistent with the 12 Click! Policy Goals adopted by the Tacoma Public Utilities Board and the Tacoma City Council in 2018. In the proposed transaction, Rainier Connect would obtain an exclusive indefeasible right to use ("IRU") and operate the hybrid fiber coaxial system that today the Department of Public Utilities, Light Division ("Tacoma Power") d/b/a Click! Network ("Click!") operates to provide wholesale and retail video and broadband products and services to residents and businesses in the City and in the other jurisdictions in which Click! is franchised to operate. In exchange, Rainier Connect would commit to upgrade and improve the system, offer new and expanded cable TV and high-speed broadband internet services as well as new and expanded services to residents and businesses served by the system, and pay other financial consideration to Tacoma Public Utilities. This LOI is intended to be a binding commitment by Rainier Connect with respect to the terms upon which Rainier Connect is willing to enter into the proposed transaction.

A term sheet outlining the key terms of the proposed transaction is set forth on Attachment A attached hereto and incorporated herein.

Approvals. Rainier Connect has obtained the necessary corporate approvals to undertake the proposed transaction outlined in this LOI and the attached term sheet subject to completion of due diligence and negotiations of the definitive IRU and other transaction documents.

Responsibility for Costs. Each of Rainier Connect and Tacoma Public Utilities will be responsible for and bear all of its own costs and expenses incurred at any time in connection with pursuing or consummating the proposed transaction.

Binding Commitment to Negotiate in Good Faith. Although this LOI (including Attachment A) does not contain all of the material terms and conditions necessary for the proposed transaction, this LOI is intended as a binding commitment of Rainier Connect and Tacoma Public Utilities to negotiate the definitive agreements in good faith and consistent with the terms and conditions described herein within ninety (90) days following approval by the Tacoma Public Utilities Board and Tacoma City Council of this LOI. The parties may extend the timeline to negotiate the definitive agreements through mutual written consent.

Notwithstanding anything herein to the contrary, the obligation to consummate the proposed transaction contemplated herein is expressly made contingent upon and subject to: (i) the negotiation of definitive agreements, the terms of which must be acceptable to each party, acting in its discretion; (ii) the approval of the definitive agreements by the City of Tacoma Public Utilities Board; (iii) the approval of the definitive agreements by the Tacoma City Council (acting in its proprietary capacity and not as a franchising authority); (iv) the execution of definitive agreements; and (v) the fulfillment or waiver of the closing conditions to be further specified in the definitive agreements.

Please sign as indicated below to signify Tacoma Public Utilities' concurrence with the intent of the terms proposed herein. Rainier Connect understands that execution of this LOI, and further pursuit of the proposed transaction by the Tacoma Public Utilities management is subject to approval by the Tacoma Public Utilities Board and the Tacoma City Council.

Very Truly Yours,

Brian Haynes
President and Chief Executive Officer
Rainier Connect

Agreed and accepted this 2nd day of April,

2019. Tacoma Public Utilities

By: _____
Jackie Flowers,
Director, Tacoma Public Utilities

ATTACHMENT A

(Term Sheet)

Tacoma Click!/Rainier Connect Public-Private Partnership Term Sheet
March 4, 2019

1. **Continued public ownership of the infrastructure assets**
    a. IRU assets: Rainier Connect will be granted an indefeasible right of use ("IRU") for the hybrid fiber-coaxial network assets owned by Tacoma Public Utilities (TPU) and used by Tacoma Click! ("Click!) to provide cable television and broadband data services to residents and businesses ("Network") in the existing Click! service area ("Click! Service Area"). The Network includes the outside plant assets associated with the Click! network, including fiber optics, coaxial cable, cabinets, splitters, backup powering equipment, and other outside plant physical assets including those discussed in 14(b) below.

    b. IRU term: The IRU term will be 20 years ("IRU Term"). On the expiration of the IRU Term, the IRU can be renewed for two additional periods of 10 years ("Extension IRU Terms") so long as Rainier Connect is in compliance with all the terms of its contractual relationships with the City of Tacoma and TPU.

    c. Other assets: Rainier Connect will be granted use of other assets currently used by Click! in the provision of cable television and broadband data services, including equipment used to operate the Network and deliver services to customers, customer accounts, inventory of spare parts and equipment, prepaid items, and material contracts, in each case related to the operation of the Network and the provision of products and services (collectively, "Related Assets"). The Related Assets will be conveyed to Rainier Connect subject to the terms of an asset purchase agreement ("APA") to be negotiated between the parties.

    d. Network upgrades: Rainier Connect commits to complete ubiquitous upgrade to DOCSIS 3.1 throughout the Click!' Service Area within 36 months of transfer of control of the Network from TPU to Rainier Connect.

    e. Ownership of new and upgraded assets:

        i. Subject to the IRU, TPU will own any outside plant asset constructed or upgraded by Rainier Connect on the existing Network within and throughout the Click! Service Area, with the exception of outside plant that is owned by Rainier Connect as of the date of execution of the IRU.

ii. Rainier Connect will own any electronic asset it purchases that is not located on TPU property and that can be removed at the end of the IRU. In the event of contractual default by Rainier Connect and termination by TPU, TPU and Tacoma Power will have an unrestricted right of use for any equipment and other assets, including customer accounts and customer data, with respect to the Network, but not with respect to Rainier Connect Plant, in use to support operations, so as to enable continuity of services and seamless migration to a new operator. Following execution of the agreements between the parties, the two parties will develop a mutually-agreeable plan for such migration, and will review and revise the plan every three to five years throughout the IRU Term and Extended IRU Terms. In the event of termination by TPU, the demarcation point between Rainier Connect Plant and TPU-owned Network will be the splice points or similar physical interconnection points.

2. **Ensure equitable access regardless of geographic location, socioeconomic status, or technology used to access online content**
   a. Equity in pricing and service levels. Rainier Connect commits that it will offer like services, at like prices, across the entire Click! Service Area. The DOCSIS 3.1 upgrade, as well as subsequent upgrades to successive generations of DOCSIS technology, will be undertaken on a ubiquitous basis to 100 percent of the Network. Upgrades to fiber-to-the-premises will be undertaken based on economic feasibility without any consideration of impermissible demographic considerations.

      i. Rainier Connect will actively work to eliminate racial and socioeconomic disparities as it upgrades the network across the Click! Service Area and beyond.

      ii. Rainier Connect commits to purposeful citizen outreach and engagement with diverse community partners to better understand the needs of historically underserved populations. Through this, Rainier Connect will provide access based on best available technology to serve the unique needs of any particular area or population.

      iii. Rainer Connect plans to work with community partners and businesses from all parts of the Click! Service Area to promote and track equity and inclusion of services within Tacoma and throughout the region. This will allow Rainier Connect to quantify measurable im-

provements as they relate to broadband and telecommunication access in the community.

iv. As it does in its other service areas, Rainier Connect will provide guidance, education, and assistance to all community members to help achieve equitable service outcomes as it relates to broadband and telecommunications offerings.

v. Rainier Connect commits to being transparent and collaborative with individuals and community groups, holding itself accountable for measurable improvements and outcomes as it relates to equitable penetration of telecommunications and broadband services in the TPU footprint.

b. Equity in access to service. Rainier Connect commits that it will not decline service to any customer in good standing and that its services will be available on an equitable basis throughout the Click! Service Area. Consistent with its existing practices, Rainier Connect will reinstate service for delinquent customers so long as they pay outstanding balances and remain current.

3. **Create low-income affordable access to telecommunications services**
   a. Rainier Connect will offer the federal Lifeline subsidy to qualified low-income consumers. Rainier Connect is a certified Lifeline provider.

   b. Rainier Connect will offer a substantially reduced-cost service, at or above the federal definition of broadband, to households that are eligible for Tacoma Power's electric service low-income program. In compliance with this obligation, in the immediate period after transfer of Network control, Rainier Connect will offer a 30 Mbps download/10 Mbps upload package for $10 per month.

   c. Rainier Connect will provide free wired or Wifi service to at least 30 locations within the existing Click! Service Area that provide services to low-income members of the community, as a means of facilitating broadband access for those who cannot access it elsewhere. The locations will be determined in collaboration with TPU.

4. **Enforce net neutrality principles for all customers**
   a. Consistent with its longtime policy and practice, Rainier Connect will operate the Network and any other communications assets it builds within the Tacoma Power electric service territory on a net neutral basis.

b. Specifically, Rainier Connect commits to the following:

i. Transparency: Customers will be fully informed about their services, including technical characteristics and network management practices, so they can make informed choices.

ii. Free flow of information over the internet: Customers will have access to internet content, applications, and services without intentional degradation.

iii. No blocking of lawful websites: Customers will have access to all lawful websites, resources, applications, and internet-based services.

iv. No discrimination against lawful network traffic: All lawful traffic, including encrypted traffic, will receive similar treatment. No traffic will receive preferential treatment based on affiliation, the identity of the user, the content of the information, the provider of content, or the type of service being provided.

v. No paid prioritization: Rainier Connect will not offer prioritized transmission of certain content, applications, or content providers over other internet traffic sharing the same network facilities.

5. **Allow open access to telecommunications assets by other telecommunications providers, to the extent such access benefits customers**

Rainier Connect will provide wholesale services to other providers consistent with its practices and policies in other geographic areas in which it provides service.

6. **Preserve competition among telecommunications providers that benefits customers (such as high-quality, technologically up-to-date, and reasonably priced telecommunications services), including restricting transfer of ownership or operations that reduce competition**

a. Rainier Connect recognizes TPU's goal of preserving and promoting competition.

b. Rainier Connect commits that it will not sell, grant, or otherwise transfer its rights and obligations under the IRU or asset purchase agreement to any entity without written agreement from TPU, and that such agreement can be withheld in the event that TPU believes that the transfer violates any of the 12 policy principles adopted by the Tacoma Public Utilities Utility Board and City of Tacoma Council regarding Click!. TPU may decline consent based on

the entity's legal, technical, and financial incapacity to meet its obligations under the IRU.

c. Rainier Connect commits that it will not sell, grant, or otherwise transfer its rights and obligations under the IRU or asset purchase agreement to any facilities-based entity that has residential data market share of 25 percent or more in the existing Click! Service Area.

d. All the terms of this document, the IRU, and the APA will transfer to any entity to whom Rainier Connect sells, grants, or otherwise transfers its rights and obligations under these documents.

7. **Safeguard municipal use of telecommunications services by Tacoma Power, the City, and other local governments**

a. Maintenance of Tacoma Power Fiber: The parties recognize that large parts of the Network were constructed for the primary purpose of supporting Tacoma Power operations, and the 24 strands of Tacoma Power Fiber on the routes mapped in Appendix A (Critical Routes) provide substantial and essential support for critical Tacoma Power functions and assets. The Tacoma Power Fiber on Critical Routes is collocated with the fiber optic strands that are used by Click! and are now planned to lease to Rainier Connect under the IRU. With respect to any components of the Network or Tacoma Power Fiber on Critical Routes, Rainier Connect will not provide maintenance, including infrastructure repair; splicing; replacement; emergency restoration; pole transfers; road projects and overhead-underground conversions; cable restoration; locates; reattachment; moves; make-ready compliance; route-relocation, and other standard processes undertaken by communications infrastructure owners ("Maintenance"). Rather, Tacoma Power will provide all Maintenance on Critical Routes for the term of the IRU, Extended IRU Terms, and thereafter. Tacoma Power will provide Rainier Connect a service level agreement (SLA) for on-going physical maintenance and restoration of the Network (including both fiber and coaxial cable) on Critical Routes per the specifications in Appendix B. In the event that Tacoma Power no longer utilizes fiber on Critical Routes to support critical functions and assets, the two parties will develop a plan for expanding Rainier Connect's access to Tacoma Power fiber and reducing Tacoma Power's Maintenance obligations.

b. Maintenance of Coaxial Network on Critical Routes: Rainier Connect will perform regular maintenance on the coaxial cable as needed on critical routes. These tasks may include RF level measurements, noise measurements, and industry standard troubleshooting or regular maintenance tasks. If needed

Rainier connect will repair or replace active or passive coaxial network components when necessary to eliminate service impairment or outages.

c. Fiber overlash or delash on Critical Routes: Rainier Connect may not overlash or delash fiber to the Network on Critical Routes without the express written consent of Tacoma Power, consistent with Tacoma Power's standard requirements. This limitation will not apply to potential overlash or delash of Network not located on Critical Routes, to which Rainier Connect may overlash or delash additional fiber plant subject to Tacoma Power's standard pole attachment terms and conditions. This limitation also does not limit Rainier Connect's opportunity to attach new fiber optic plant on Critical Routes, subject to Tacoma Power's standard pole attachment terms and conditions.

d. Maintenance on Non-Critical Routes: The Network on routes that are not Critical Routes as defined by Appendix A does not carry traffic that is critical to Tacoma Power operations and assets ("Non-Critical Routes"). Rainier Connect will provide Maintenance for the Network on Non-Critical Routes during the IRU Term and Extended IRU Terms and will be responsible for supporting and maintaining that plant to meet its own needs. In the event that Rainier Connect upgrades existing coaxial plant on Non-Critical Routes to fiber optics or otherwise adds new infrastructure on those routes, it will be responsible for Maintenance. In the event that Tacoma Power has reason to re-designate Non-Critical Routes as Critical Routes, it will notify Rainier Connect and the two parties will work collaboratively to determine the terms of the changed designation and a date for transfer of Maintenance responsibilities.

e. New Routes: For those routes on which Rainier Connect constructs new communications infrastructure where Click! does not currently have outside plant ("New Routes"), Rainier Connect will be responsible for all Maintenance on the same terms as for Non-Critical Routes.

f. Splicing on Critical Routes: Rainier Connect will not access splice panels or fiber access points anywhere on Critical Routes. Rather, qualified Tacoma Power staff will provide splicing services to Rainier Connect upon request based on the price schedule in Appendix C. Tacoma Power will provide qualified staff to provide splicing services at a time of mutual agreement between Tacoma Power and Rainier Connect based on notice of 10 business days. If Rainier Connect chooses to build new splicing access points for its own use on Critical Routes so as to separate Network access points from Tacoma Power Fiber access points, Tacoma Power will provide qualified staff to pro-

vide this construction service based on the price schedule in Appendix C and notice of 10 business days.

g. Energized vaults: For safety and regulatory compliance reasons, only qualified Tacoma Power staff can access Network assets that are contained within energized vaults (estimated as approximately four percent of total access points in the Network). In the event that Rainier Connect needs to access these assets, qualified Tacoma Power staff will provide access services to Rainier Connect upon request based on the price schedule attached hereto as Appendix C. Tacoma Power will provide qualified staff to provide these access services at a time of mutual agreement between Tacoma Power and Rainier Connect based on notice of five business days. Rainier Connect may build new infrastructure to avoid the energized vaults.

h. Hub site access and security: Under the IRU, Rainier Connect will have independent, 24-hour access to the six secured Click! hub site locations, which are located adjacent to Tacoma Power's substations and can therefore be entered by Rainier Connect staff without entering the substations. Rainier Connect will also have use of all existing racks in the hub site, other than those reserved for the I-Net and TPU. Rainier Connect can add racks within the hub site. All parties will purchase appropriate lockable racks for housing of their equipment or install a secure cage within the hub site and will be responsible for the security of their own equipment only. With respect to existing shared racks and patch-panels, Tacoma Power will ensure they are lockable.

i. Updates to infrastructure documentation: On a monthly basis, Rainier Connect will provide Tacoma Power with as-built drawings indicating construction type, routes, and strand count for any new construction, upgrades, or other efforts on both Critical Routes and Non-Critical Routes over the previous month. The data will be provided in a format to be agreed to by the parties and that is intended to make sharing of data as efficient and useful as possible. At the end of the IRU term or Extended IRU Term, or in the event of Rainier Connect's default, Tacoma Power will be entitled to all data regarding the existing network and its use, without exception, and nothing in this paragraph will limit Tacoma Power's access to Rainier Connect's data, maps, and information regarding the Network.

8. **Maintain financial stability of the telecommunications business operations utilizing the Click! assets**
   a. Direct Lease Fee

i. Rainier Connect will pay TPU $2.5 million annually ("IRU Fee") during each of the first five years of the IRU term, increasing to $3 million annually for all subsequent years of the IRU Term and Extended IRU Terms, adjusted annually based on increases in the Consumer Price Index ("CPI").

b. Capital Expenditures

i. Beginning with the date of closing, Rainier Connect will immediately begin investing the capital needed to accomplish Network upgrades and improvements to migrate the Network to DOCSIS 3.1 and to enable the provision of gigabit speed internet service to the existing Click! Service Area within 24 to 36 months. At least one third of the Click! Service Area upgrade will be completed each year and the phasing of upgrades will include consideration of the City's Equity Principles.

ii. Throughout the IRU and Extension IRU Terms, Rainier Connect will make continuous financial investments in the Network to maintain a state-of-the-art distribution network carrying products and services, and with service quality standards equal to or better than the products and services offered by the leading ISPs in the Seattle metropolitan area.

iii. All responsibility for capital expenditures for the provision of the products and services to Network subscribers will be borne by Rainier Connect during the IRU Term and Extension IRU Terms other than expenditures necessary to meet Tacoma Power's obligations for Maintenance on Critical Routes.

iv. To achieve these goals, Rainier Connect will make at least $1.5 million in capital expenditures ("Capital Expenditures") on the physical assets of the Network during each year of the IRU Term and Extended IRU Terms, adjusted annually based on increases in the Consumer Price Index ("CPI").

v. Capital Expenditures on the physical assets of the Network will include, but not necessarily be limited to, expenditures on upgrades to successive generations of DOCSIS, expenditures on upgrades to fiber-to-the-premises, and network equipment.

vi. These improvements will be physical assets of the Network and owned by TPU subject to the IRU.

vii. Expenditures on physical assets that do not become part of the Network (such as customer premises equipment, cloud-based services, web-based services, support and maintenance, or a soft switch located elsewhere) will not be credited toward Capital Expenditures. In the event of contractual default by Rainier Connect and termination by TPU, TPU and Tacoma Power will have an unrestricted right of use to support operations for a defined period of time, so as to enable continuity of services and seamless migration to a new operator.

viii. Expenditures on physical assets that are not related to provision of wireline broadband data and cable services (such as wireless communications facilities, including wireless attachments to enable cellular, small cell, and distributed antenna systems) will not be credited toward Capital Expenditures.

ix. TPU will have the right to audit these expenditures. In any two-year period, with the first two-year period beginning as of the date of execution of the IRU, in which Rainier Connect's Capital Expenditures are less than its obligations under this agreement, it will pay to TPU funds equal to the amount not spent on Capital Expenditures. Capital Expenditures in excess of the amount required under this agreement will be credited to future years' obligations.

c. Operating and Maintenance Costs

i. All of the operating expenses of the operation of the Network will be borne by Rainier Connect during the IRU Term, other than the Maintenance obligations to be assumed by Tacoma Power on Critical Routes.

ii. In addition, Rainier Connect will assume and perform a maintenance and support agreement for the coaxial-based service to the approximate 14,000 wired gateway meters utilized by Tacoma Power to collect electric service usage data over the Network until a substitute meter reading network is deployed by Tacoma Power. Tacoma Power plans to gradually phase out use of these meters over approximately two years, depending on the timeline and progress for its wireless Automated Metering Infrastructure ("AMI") initiative. Tacoma Power and Rainier Connect agree to work together to determine a reasonable arrangement for support of the meters and migration away from their use. Tacoma Power understands that continued use of the meters could slow Rainier Connect's upgrade of the network to DOCSIS 3.1 if the upgraded equipment cannot support the meters. Similarly, Rainier Connect understands that Tacoma Power is en-

gaged in deploying the AMI solution to replace the wired gateway meters, and that the AMI deployment process may entail two or more years.

iii. Energy Costs: Rainier Connect's use of energy provided by Tacoma Power will not be included in the IRU and will be paid for by Rainier Connect consistent with Tacoma Power's standard commercial pricing.

9. Promote economic development and educational opportunities

a. Rainier Connect will work with TPU to develop an internship program to provide work opportunity and training for students and residents of Tacoma, including veterans.

b. Rainier Connect will work directly with TPU to assist the City's economic development department to support efforts to attract businesses to Tacoma and to provide data about Rainier Connect's commercial broadband data offerings that can be provided to businesses considering locating in Tacoma.

10. Provide job options and security for Click! staff

a. Rainier Connect will make a good faith commitment to interview current employees of Click! who express an interest in potential employment and will potentially make offers of employment prior to execution of the IRU and APA to those employees who have the required skill sets and who meet Rainier Connect's hiring criteria.

b. The terms and conditions of employment will be established by Rainier Connect under its standard employment terms and conditions.

11. Protect customer privacy

a. Consistent with its existing policy and practice, Rainier Connect will comply with City Council Resolution No. 39702 regarding privacy. This Resolution prohibits ISPs that serve as retail broadband data providers on the Click! network from collecting or selling personal information from a customer without express written approval.

b. Resolution No. 39702 will be incorporated in the IRU as an obligation of Rainier Connect with respect to both its own broadband data service offerings and those of the ISPs that serve as retailer broadband data providers on the Network.

12. Preserve Click!'s goodwill, including its market-leading customer service

a. Rainier Connect recognizes the importance of customer service to Click!'s customers, TPU, and the City. It commits to adhering to robust customer service

standards under a cable franchise agreement for cable television services and under the IRU for internet services.

b. Customer Service Contacts: Rainier Connect will maintain a local or toll-free telephone line for taking customer calls and will provide other forms of customer contact that will be available 24 hours per day, seven days per week, including on holidays. During hours during which most similar businesses in Tacoma are open to serve customers ("Normal Business Hours"), company representatives will be available to respond to customer inquiries. After Normal Business Hours, Rainier Connect may make provision for electronic response pending opportunity the following day for a response by a company representative. A company representative will respond to inquiries received after Normal Business Hours on the next business day.

    i. Under normal operating conditions that are within the control of Rainier Connect ("Normal Operating Conditions"), calls and other forms of customer contacts will be answered by a company representative within 30 seconds after the connection is made. If the call or contact is transferred, the transfer time will not exceed 30 seconds. These standards will be met at least 90 percent of the time, measured quarterly. Under Normal Operating Conditions, customers will receive a busy signal no more than three percent of the time. Normal Operating Conditions include special promotions and normal system maintenance and upgrades, but do not include natural disasters, civil disturbances, power outages, telephone network outages, and severe or unusual weather conditions.

c. Service Calls: Rainier Connect will schedule appointments for installations and other service calls either at a specific time or, at a maximum, during a four-hour time block during normal business hours. Rainier Connect may also schedule service calls outside of normal business hours for the convenience of the customer. Rainier Connect will not cancel an appointment with a customer after the close of business on the business day prior to the scheduled appointment. If the service technician is running late and will not meet the specified appointment time, Rainier Connect will contact the customer and reschedule the appointment at the convenience of the subscriber.

    i. Standard installations that are located up to 125 feet from the existing distribution system will be performed within seven days after an order has been placed.

ii. Except during conditions beyond its control, Rainier Connect will begin working on a service interruption no later than 24 hours after being notified of the problem.

iii. These standards concerning installations, outages and service calls will be met under normal operating conditions at least 95 percent of the time, measured quarterly, and Rainier Connect will provide to TPU quarterly reports regarding compliance.

d. Billing Practices: Thirty days advance notice will be given to subscribers of any changes in rates or services if the change is within the control of Rainier Connect. Refunds will be issued no later than either the customer's next billing cycle or 30 days following resolution of the request, whichever is earlier, or upon the return of equipment when service is terminated. Credits will be issued no later than the billing cycle following the determination that a credit is warranted.

e. Physical Presence: Rainier Connect will maintain a physical presence in the City of Tacoma, including a store that will be open during all Normal Business Hours, including on Saturday mornings, where consumers can transact business in person with Rainier Connect staff-persons. Rainier Connect customer service staff will be located in Tacoma.

f. Branding: The City agrees that, upon request by Rainier Connect, it will grant a limited license to allow Rainier Connect to use the "Click!" trademark and copyright for marketing, advertising and branding purposes if Rainier Connect desire to do so.

13. Timeline, Process, and Approvals

a. Closing of the proposed transaction will be conditioned, among other typical conditions, on regulatory consents and approvals and any third-party consents relating to designated material contracts to be assumed by Rainier Connect.

b. The parties contemplate the IRU and APA will be fully negotiated within 60 to 90 days following required approvals by the City of Tacoma Public Utilities Board and by the Tacoma City Council.

c. The IRU and APA will be executed following required approvals by the City of Tacoma Public Utilities Board and by the Tacoma City Council.

d. At the time of execution of the IRU, the Related Assets will be conveyed to Rainier Connect and Rainier Connect will assume such liabilities related to the Network and Related Assets as have been mutually agreed.

e. The parties anticipate a six-month transition period after closing, with Rainier Connect taking over operations on a mutually-acceptable schedule reasonably determined to cause the least disruption to Click!'s customers. The parties will, during negotiations for the IRU and APA, also negotiate a mutually-agreeable agreement to govern the transition period and transfer of control of the Network to Rainier Connect.

f. During the six-month post-closing transition period, Rainier Connect will compensate TPU for any transition services, ongoing back-office support, or other arrangements necessary to facilitate the continued operation of Click!'s business and the transfer of operations to Rainier Connect.

g. Prior to the closing of the proposed transaction, Rainier Connect will either obtain approval from the jurisdictions with whom Click! has franchise agreements to assume those agreements or will enter into its own franchise agreements to serve these jurisdictions.

h. On a periodic basis to be mutually agreed by the parties, Rainier Connect and TPU will meet to review Rainier Connect's operations, the status of the Network, and the state of the 12 policy goals adopted by the Council. In addition, on an annual basis, beginning one year after execution of the IRU, Rainier Connect will provide a report to the Utility Board and City Council of its operations, the status of the Network, and the state of the 12 policy goals adopted by the Utility Board and City Council.

i. Rainier Connect will agree to inclusion of language in the IRU acknowledging that, under Section 7 of the National Labor Relations Act (NLRA) 29 U.S.C. § 157, employees have the right to self-organization, to form, join or assist labor organizations, to bargain collectively through representatives of their own choosing, and to engage in other concerted activities for the purpose of collective bargaining or other mutual aid or protection and to engage in other activities protected under the NLRA (29 U.S.C. §§ 151-169).

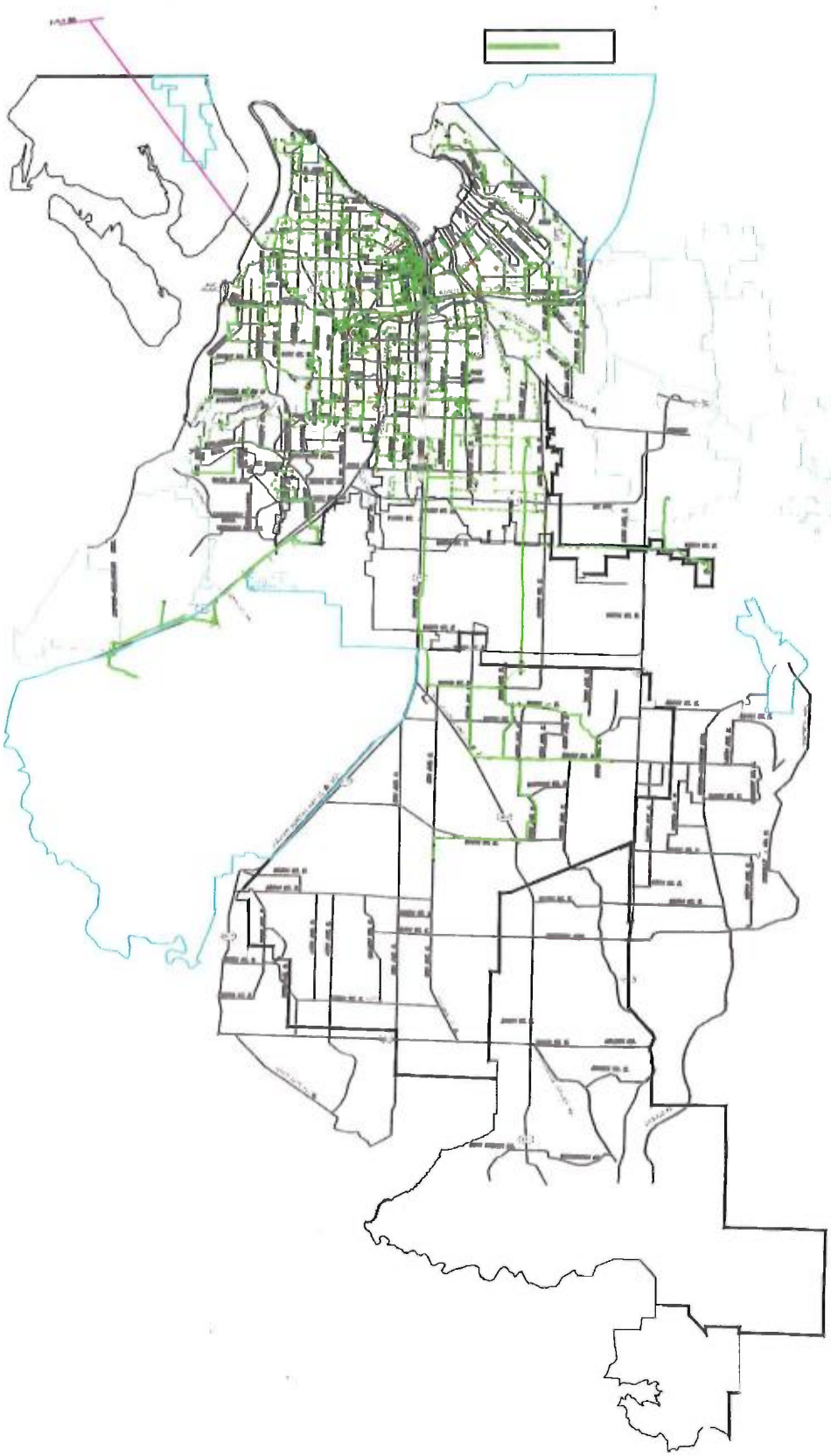
14. Additional Technical Matters

a. Permitting and pole attachments: TPU will work with Rainier Connect to support efficient and expeditious application for City permits, consistent with City policy and practices and with the appropriate franchise agreement(s) to be negotiated by the parties. TPU will also work with Rainier Connect to efficiently and expeditiously issue permits, consistent with Tacoma Power policy and practices and with pole attachment and conduit access agreements in existence or to be negotiated by the parties.

b. Backup generation, batteries, and power supply at hub sites. Tacoma Power will have no obligation to provide or maintain backup batteries, power supplies, or emergency generation within the hub sites. Existing equipment of this sort will be conveyed to Rainier Connect as part of the Asset Purchase Agreement and Rainier Connect will hold all obligations for the ongoing fueling, operations, maintenance, monitoring, repair, and replacement of this equipment. If Rainier Connect needs to perform upgrades to back up power equipment outside of the hub structure requiring more space than what is currently utilized it will notify Tacoma Power. The two parties will work together to accommodate a solution that is both secure and accessible to Rainier Connect. Example: Replacing an existing generator that requires a larger concrete pad or placing new fuel tanks.

c. Construction engineering meetings: During the first 36 months following execution of the IRU and APA, the technical teams for both parties will meet on a monthly basis for purposes of sharing information, data, and plans regarding upcoming construction and upgrades, so as to enable both parties to plan accordingly based on shared expectations. The parties anticipate that these monthly meetings will serve to provide predictability and enable both parties to facilitate the support the needs of the other, as well as to plan appropriately for staffing and other upcoming efforts. Following the first 36 months (or at another time of mutual agreement), the meetings will be held on a quarterly rather than monthly basis.

Appendix A: Critical Routes



Appendix B: Service Level Agreement

Section 1 Maintenance

a) TPU will perform Maintenance for fiber on Critical Routes. Scheduled maintenance will include the following activities:
    a. Patrol of the fiber on a regularly scheduled basis
    b. Maintenance of a "Call-Before-You-Dig" program and all required and related cable locates
    c. Maintenance of sign posts along the TPU System with the number of the local "Call-Before-You-Dig" organization

b) TPU will perform unplanned, emergency or non-routine maintenance, demand call-out, and repair ("Unscheduled Maintenance") for fiber on the Critical Routes. Unscheduled Maintenance includes the following activities:
    a. Respond to troubleshooting requests by Rainier Connect
    b. Respond to any notification by Rainier Connect or notification by any third party of any failure, interruption or impairment in the operation of the fiber on the Critical Routes, or any event imminently likely to cause the failure, interruption or impairment in the operation of the fiber on Critical Routes or demand maintenance requested by Rainier Connect
    c. Respond to any potential service-affecting situation to prevent any failure, interruption or impairment in the operation of the fiber on Critical Routes
    d. Rainier Connect shall immediately report the need for Unscheduled Maintenance to TPU in accordance with procedures promulgated by TPU from time to time. TPU shall log the time of Rainier Connect's report, verify the problem and dispatch personnel immediately to take corrective action in accordance with this Agreement.

Section 2 Time to Response

TPU personnel shall dispatch maintenance and repair personnel to handle and repair problems detected in the fiber on Critical Routes: (i) upon notification by Rainier Connect to TPU, or (ii) upon notification by a third party. TPU's maintenance employees shall be available for dispatch twenty-four (24) hours a day, seven (7) days a week. TPU shall have its first maintenance employee at the site requiring Emergency Unscheduled Maintenance activity within two (2) hours after the time TPU becomes aware of an event requiring Emergency Unscheduled Maintenance, unless delayed by a Force Majeure Event or other circumstances beyond the reasonable control of TPU.

Section 3 Cooperation and Coordination

TPU shall provide Rainier Connect with a contact/escalation list ("Escalation List") to aid in trouble reporting and resolution. The current Escalation List shall be made available to Rainier Connect and may be revised by TPU from time to time by written notice. In performing Maintenance, TPU shall take workmanlike care to prevent impairment to the signal continuity and performance of the IRU Fibers. The precautions to be taken by TPU shall include notifications to Rainier Connect when there may be service-affecting Maintenance. In addition, TPU shall reasonably cooperate with Rainier Connect in sharing information and analyzing the disturbances regarding the IRU Fibers. If any Maintenance requires a traffic roll or reconfiguration involving fibers, electronic equipment, or regeneration or other facilities of Rainier Connect, then Rainier Connect shall, at TPU's reasonable request, make such personnel of Rainier Connect available as may be necessary to accomplish such Maintenance, which personnel shall coordinate and cooperate with TPU in performing such Maintenance.

Section 4 Maintenance Window

Scheduled Maintenance, which is reasonably expected to produce any signal discontinuity, must be coordinated between the parties to determine the appropriate time for the scheduled Maintenance. Generally, this work should be scheduled after 11:00 p.m. and before 6:00 a.m. local time and on certain weekends (the "Maintenance Window"). Scheduled Maintenance must be scheduled so that it is completed by the end of the Maintenance Window. If any scheduled Maintenance goes beyond the end of the Maintenance Window and the IRU is unavailable, such time shall be considered a SLA Failure for which Rainier Connect shall be entitled to a service credit. The parties shall agree upon a detailed Maintenance Window calendar. Major system work, such as fiber rolls and hot cuts, shall be scheduled for Maintenance Window weekends. The intent is to avoid jeopardy work on high-traffic holidays. TPU shall notify Rainier Connect of any scheduled Maintenance and as soon as possible after becoming aware of the need for Unscheduled Maintenance. Rainier Connect shall have access to the IRU Fibers during the performance of any scheduled Maintenance or Unscheduled Maintenance so long as this requirement does not interfere with TPU's ability to perform its obligations under this Agreement. If scheduled Maintenance is canceled or delayed for whatever reason as previously notified, TPU shall notify Rainier Connect at its earliest opportunity.

Section 5 Testing and Restoration of the IRU Fibers

a) TPU shall respond to any failure, interruption, impairment in the operation of, or unavailability of the IRU Fibers, but excludes any failure, interruption, impairment in the operation of, or unavailability of the IRU Fibers based upon a Force Majeure Event ("Fault") as quickly as possible following commencement of the Fault (allowing for delays caused by Force Majeure Events and other circumstances beyond the reasonable control of TPU) in accordance with the procedures set forth in this document. A Fault commences upon the earlier of (i) Rainier Connect's notification to TPU or (ii) when indicated by network control information actually or reasonably

known to TPU. Each Fault terminates upon restoration of the IRU Fibers as evidenced by appropriate network tests by TPU, so long as access to Rainier Connect fiber terminations is granted to TPU, copies of which shall be provided to Rainier Connect upon request.

b) TPU shall maintain sufficient capability to teleconference with Rainier Connect during emergency restoration or Unscheduled Maintenance in order to provide regular communications during the restoration process. When correcting or repairing fiber optic cable discontinuity or damage, including but not limited to an event of emergency Unscheduled Maintenance, TPU shall use commercially reasonable efforts to repair traffic-affecting discontinuity of the affected IRU Fibers within six (6) hours of learning of discontinuity, with repair of the other unlit IRU fibers to occur expeditiously after TPU's maintenance employee's arrival at the problem site and after power restoration. In order to accomplish such objective, it is acknowledged that the repairs so effected may be temporary in nature. In such event, within twenty-four (24) hours after completion of any such Emergency Unscheduled Maintenance, TPU shall commence its planning for permanent repair and thereafter promptly notify Rainier Connect of such plans, and shall implement such permanent repair within an appropriate time thereafter. Restoration of open IRU fibers on fiber strands not immediately required for service shall be completed on a mutually agreed-upon schedule.

c) During restoration, the parties agree to work together to restore all traffic as quickly as possible.

d) In performing permanent repairs, TPU shall comply with industry standards and when possible Rainier Connect's standard splicing specifications. TPU shall provide to Rainier Connect any modifications to these specifications as may be necessary or appropriate in any particular instance for Rainier Connect's approval, which approval shall not be unreasonably withheld.

e) TPU's representatives that are responsible for initial restoration of a cut fiber optic cable shall carry on their vehicles the typical appropriate equipment that would enable a temporary splice, with the objective of restoring operating capability in as little time as possible. TPU shall maintain and supply an inventory of spare fiber optic cable in storage facilities supplied and maintained by TPU at strategic locations to facilitate timely restoration.

f) Upon permanent restoration, TPU shall perform appropriate testing on the IRU Fibers in accordance with TPU's then current preventative maintenance procedures, which shall not substantially deviate from standard industry practice.

Section 6 Step-In Rights In the event of a failure by TPU to perform its Maintenance obligations, Rainier Connect will have the right to cause performance to be completed by or through a third-party contractor that is pre-approved by TPU.

Section 7 Fiber Replacement

In the event that all or any part of the IRU Fibers shall require replacement, such replacement shall be made as soon as reasonably practical by TPU using fiber to be provided by Rainier Connect and credited toward Rainier Connect's Capital Expenditures.

Section 8 Chronic Failure

In the event a portion of the IRU Fibers suffers from a Fault (i) lasting more than 48 hours in the aggregate during any calendar month, (ii) lasting more than 24 hours consecutively in any three of the past 12 consecutive calendar months, or (iii) occurring on two or more separate occasions of more than 12 hours each in the aggregate in any calendar month, such a Fault will be considered a chronic failure ("Chronic Failure"). In the event of a Chronic Failure, TPU shall present a remediation plan to Rainier Connect to address the Chronic Failure. Following the parties' mutual agreement of a plan to solve the Chronic Failure, TPU shall implement the plan within 30 days. In the event that IRU Fiber requires replacement, TPU will replace the Fiber per Section 7.

Section 9 Fault Notification and Response Time

TPU shall contact Rainier Connect within 15 minutes of learning of any Fault if Rainier Connect has not first notified TPU. Notification shall be provided to the Rainier Connect NOC. TPU shall respond to any Fault within 2 hours after receiving a report of any such Fault, unless delayed by a Force Majeure Event or other circumstances beyond the reasonable control of TPU. Rainier Connect shall be entitled to a service credit in accordance with the following table for each failure of TPU to meet the notification or response times set forth above, which service credit shall equal the following percentage for the affected IRU Fibers in the month in which such failure occurs:

Service Level Failure	Credit Amount
Notification	$120
Response	$120

Section 10 Service Availability

a) Network and Fiber Availability Commitment. TPU shall use commercially reasonable efforts to maintain availability of the IRU Fibers 100 percent of the time. Fiber Unavailability shall exist when unavailability of IRU Fibers causes disruption in service ("Fiber Unavailability"). Fiber Unavailability duration is measured from the time TPU detects Fiber Unavailability or TPU or Rainier Connect opens a trouble ticket until the time Rainier Connect confirms that the Fiber Unavailability has been remediated, which confirmation shall be prompt. TPU shall have a 12-hour grace period from the detection by TPU or opening of a trouble ticket before penalty fees. Beginning with the 13th hour of Fiber Unavailability, every hour of Fiber Unavailabil-

ity shall result in penalty fee of $120 per hour payment from TPU to Rainier Connect. Such payments shall be capped at one month total. To claim payment, Rainier Connect must provide TPU with a written request within five business days of the last day of the month in which Fiber Unavailability occurred.

b) Terrestrial Fiber Commitment. TPU commits to maintain attenuation levels not to exceed an overall end to end dB loss greater than 35 dB at the beginning of the IRU term and not to exceed 39.4 dB for the duration of the IRU Term. End to end dB loss shall be calculated by adding together the loss from each of the segments on the TPU System.

c) Penalty Fees. Service fees shall not be available to Rainier Connect in cases where the issue arises from result of (a) the acts or omissions of Rainier Connect or its employees, contractors, agents or end-users; (b) the failure, malfunction, or limitation of throughput of equipment, network, software, applications or systems not owned or directly controlled by TPU; (c) circumstances or causes beyond the control of TPU, such as Force Majeure Events and third-party attacks on the IRU Fibers; (d) scheduled maintenance; or (e) urgent maintenance with notice provided as soon as is commercially practicable under the circumstances.

Appendix C: Tacoma Power Price Schedule

Work Item	Description	Measured By	Cost
1. **Fusion Fiber Splicing (Existing Splice Case)**	Labor, materials and equipment required for fusion splicing, including dress and storage of unspliced fibers within the splice tray. A minimum of 24 fiber splices will be performed at each location. Provide electronic documentation and analysis of each splice. Includes installation of splice cases and storage loops with snowshoes, grounding and bonding of all equipment. Encapsulate and flash test as required. Support and secure per manufacture's specifications.	Per fiber splice, tested and documented	$37.00
2. **Fusion Fiber Splicing (Mid-Entry, Create Splice Case)**	All labor, materials and equipment costs necessary to de-lash and re-lash system up to 1000', retrieve fiber storage, prepare mid-entry case, fusion splicing, including dress and storage of unspliced fibers within the splice tray. A minimum of 24 fiber splices will be performed at each location. Provide electronic documentation and analysis of each splice. Includes installation of splice cases and storage loops with snowshoes, grounding and bonding of all equipment. Encapsulate and flash test as required. Support and secure per manufacture's specifications. Includes all safety measures and traffic control.	Per fiber splice, tested and documented	$77.00

Work Item	Description	Measured By	Cost
3. Fusion Fiber Splicing (at Hub and Headend Buildings)	All costs associated with the labor, materials and equipment necessary for fusion splicing to be performed at hub and headend locations, including dress and storage of unspliced fibers within the splice tray. A minimum of 96 fiber splices will be performed at each location. Provide electronic documentation and analysis of each splice. Includes installation of splice cases and storage loops, grounding and bonding of all equipment. Encapsulate and flash test as required. Support and secure per manufacture's specifications.	Per fiber splice, tested and documented	$16.00
4. Access Management – Access Energized Power Vaults	All costs for labor, materials and equipment to provide escorted access to Tacoma Power energized vaults in the downtown business network. This unit includes a composite crew of Wire and HFC personnel, who would perform work on behalf of partner. 4% of the system splice cases reside inside energized vaults.	Time and Materials (Per hour, five-Person Crew)	$541.00

EXHIBIT 6

EXHIBIT A

TELECOMMUNICATIONS PROJECT

The Telecommunications Project will include some or all of the following elements:

Infrastructure improvements

Construct a hybrid fiber coax ("HFC") telecommunications infrastructure consisting of fiber optic rings and branches connecting nodes throughout the Light Division service area. This telecommunications system will be asymmetrically two-way capable. It will interconnect all Light Division substations. Connections may also be made with Light Division customers and with other providers of telecommunications infrastructure and services. This telecommunications system will have 500 channels. It will utilize existing Light Division rights-of-way.

Functions to be performed by infrastructure improvements

Through construction of the HFC telecommunications system, the Light Division's Telecommunications System will be capable of performing some or all of the following functions:

- conventional substation communications functions
- automated meter reading (electric and water)
- automated billing (electric and water)
- automated bill payment (electric and water)
- demand side management (DSM) functions, such as automated load (*e.g.* water heater) control
- provision of information to customers that is relevant to their energy and water purchasing decisions (*e.g.* information on time-of-use or "green" power rates)
- distribution automation
- remote turn on/turn off for electric and water customers
- city government communications functions
- CATV service
- transport of signals for service providers offering telecommunications services (*e.g.* Personal Communications Service (PCS), video on demand, high speed data, as well as conventional wired and wireless telecommunications services)
- Internet access service

55

EXHIBIT 7

RESOLUTION NO. U-10879

A RESOLUTION relating to Click! Network; approval of an All-In business and Tacoma Power funding plan to provide retail telecommunication services.

#1. WHEREAS the City Council of Tacoma delegated authority to the Public Utility Board and the Department of Public Utilities ("TPU"), Light Division (dba "Tacoma Power"), to implement and manage a broadband telecommunications system ("Click! Network" or "Click!", as authorized through City Council Substitute Resolution No. 33668, approved April 8, 1997, and Public Utility Board Amended Substitute Resolution U-9258, approved April 9, 1997), and

#2. WHEREAS the 1997 business plan contemplated that the revenues associated with telecommunications services related to city government communications, cabletelevision ("CATV") service, transport of signals to service providers offering telecommunications services, and internet access services would pay for the costs of such services and would provide an additional revenue stream to Tacoma Power to help offset the construction and operations costs associated with the telecommunications system, and

#3. WHEREAS many of the functions of the telecommunications system envisioned in the 1997 business plan have been achieved in their entirety since the infrastructure improvements were completed in 1999 including: conventional substation communication functions, distribution automation, city government communications functions, CATV service, and transport of signals for service providers offering telecommunications services (the last three functions are "Click!") and internet access services (through third-party providers), and

#4. WHEREAS other contemplated functions have been partially achieved for certain electric customers through the Gateway meter program, which include: remote turn on/off for electric customers, automated meter reading (electric), and provision of information to customers that is relevant to their energy purchasing decisions, and

#5. WHEREAS the customers of the fully implemented uses of the telecommunications system (city government communications functions ("I-Net"), CATV service, and transport of signals for service providers offering telecommunications services) have shared in part of the capital costs of constructing the telecommunications system as well as the operation and maintenance of the infrastructure to the benefit of electric customers who would have paid 100% of these costs, and

#6. WHEREAS the telecommunications system continues to provide interconnectivity, advanced control, and power management between electrical substations, which provide safe, reliable, and efficient use of electrical resources for the benefit of all Tacoma Power customers, and

#7. WHEREAS the existing business plan and current cost allocations for Click! functions do not generate sufficient revenues to fund current expenses and capital improvement costs related to these functions, and

#8. WHEREAS, on an ongoing basis, Tacoma Power will continue to use portions of the telecommunications system for conventional substation and other communications, distribution automation, etc., and

#9. WHEREAS, for a period of time, portions of the telecommunications system will continue to be utilized by Tacoma Power to support the Gateway meter program, which serves over 15,000 Tacoma Power customers, and

#10. WHEREAS future advanced meter infrastructure may use portions of the fiber network facilities of the telecommunications system and may, in part, rely on the hybrid fiber-coaxial ("HFC") infrastructure to fully implement the remaining functions described in the 1997 business plan, and that if and when such future uses occur, Tacoma Power should pay a share of the costs of the telecommunications system related to such uses, and

#11. WHEREAS, following a nine-month review by the Click! Engagement Committee (a committee comprised of representatives of the City, TPU, and citizens appointed by the City), the Engagement Committee described the community benefits of an enhanced Click! telecommunications system and an outline of the features of such a system, and

#12. WHEREAS Tacoma Power has determined, in part as a result of the Click! Engagement Committee work, that to increase revenues, Click!'s retail products must be enhanced to include retail internet services and voice-over internet phone services that can be bundled with the current CATV services (Click! would continue offering wholesale data transport services and city governmental communications functions), and

#13. WHEREAS the studies by the Click! Engagement Committee and Tacoma Power's financial analysis demonstrate that continuing to provide CATV services in support of retail internet services makes the sale of such

services a more competitive overall product and improves the financial sustainability of Click!, with estimations that Click! customers cover over 90% of the cost of service, and

#14. WHEREAS the studies of the Click! Engagement Committee, Tacoma Power's financial analysis, and industry experts conclude that high-speed internet access of 1 gigabit will be the standard for the next generation. Click! needs to make capital improvements to the current telecommunications system infrastructure to achieve these or greater speeds and to keep the competitiveness of Click! internet services in the community, and

#15. WHEREAS all financial models studied by the Click! Engagement Committee and Tacoma Power nonetheless show that the market price that can be charged for these enhanced Click! services and the market penetration that can be achieved will be insufficient to cover all of the costs associated with the operations and maintenance of the telecommunications system and the capital improvements necessary to update the HFC to allow for 1 gigabit service, and

#16. WHEREAS the internet-related uses of the current Click! telecommunications system and an enhanced Click! telecommunications system would provide Tacoma Power customers benefits by giving them access to advanced customer services options such as: power use monitoring, outage reporting, scheduling of services, bill paying, and electrical appliance control, and

#17. WHEREAS, in planning for an uncertain and unknown future, there may be other potential functions related to the supplying of electricity to

customers not considered in the existing business plan that might also make use of the telecommunications system infrastructure including: cyber security, electric car charger locations and metering, and enhanced customer information products (power usage by time of day, behavior-based saving programs, outage communications, energy audits, and participation in Evergreen Options), and

#18. WHEREAS the Board has a duty to ensure that Tacoma Power ratepayers pay in their power rates only those costs that are directly and reasonably related to the provision of electric service, and

#19. WHEREAS the Board has a duty to ensure that Tacoma Power and Click! are in compliance with legal and statutory requirements, and

#20. WHEREAS Tacoma Power has excess power generation capacity within its service territory. In the past, Tacoma Power has benefited greatly by selling this excess capacity in the wholesale power markets to the benefit of all retail electric customers. Over the past few years, wholesale power prices and sales have dropped substantially. In support of Tacoma Power's strategic business plan, Tacoma Power wants to make up this lost revenue by looking at ways to increase its retail power sales through economic growth in the community. Communities across the nation have benefited economically from competitive access to internet services in their communities. Tacoma Power's continued operation and maintenance of the telecommunications system for internet access purposes assists in making the internet services competitive in

Tacoma Power's service area, which increases economic growth that leads to greater retail power sales, and

#21. WHEREAS, in order to preserve the functionality and value of the telecommunications system for the benefit of Power customers, the Board has determined there should be a supplemental level of funding from Power to the telecommunications system based on direct services reasonably related to the provision of electric services as enumerated herein, and

#22. WHEREAS the Board nonetheless finds it wasteful and unproductive to abandon or leave unutilized the HFC components, which are currently used to provide Click! functions (including CATV and internet access services) and, in order to preserve the functionality and value of the Click! telecommunications system, the Board determines it prudent to provide a supplemental level of funding from Tacoma Power to the telecommunications system for a limited period of time until a stable source of funding from an alternate source can be secured, and

#23. WHEREAS the Board has determined that along with enhanced product offerings, the new business plan should also grant Click! management flexibility to change product offerings, prices, and marketing strategies, excluding the leasing of the entire network, without prior Board or Council approval so as to effectively compete with private companies offering similar products and services, and

#24. WHEREAS the Board finds it to be in the best interests of its electric customers and the citizens of Tacoma that a new business plan be approved for Click! functions; Now, therefore,

BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

Sec. 1. Click!'s proposed high-level "All-In" business plan (the "Business Plan"), attached as Exhibit A to this resolution, is approved.

Sec. 2. The Clerk of the Board is directed to forward this Resolution and the Business Plan to the City Council for immediate consideration. The Board requests, due to budget timing constraints, that the City Council make its decision in a timely manner. Upon approval of the Business Plan, funding, and other provisions of this resolution by Council, TPU staff is directed to complete the more detailed aspects of the Business Plan and then implement that plan.

Sec. 3. TPU's request that Click! management be delegated authority to make changes to products and service offerings, prices (within the limitations set forth in the Click! rates/charges ordinance approved by the Board and Council), and marketing strategies contained within the Business Plan without further approval by the Board and City Council is approved, and the Council is requested to concur in such approval. All significant material changes to the Business Plan that would remove TPU as the primary operator of Click! including, but not limited to, the sale or lease of telecommunications system equipment or capacity, outsourcing of work, permanent discontinuance of products or services, etc. shall be brought to the Board and City Council for approval. Such delegation would allow private third-parties to lease, rent, or buy unused portions of the network to supply services to customers and maximize revenue generation to Click!. Click! shall continue to bring contracts for the purchase of goods, services, and materials in excess of $200,000 to the Board for approval.

Sec. 4. Tacoma Power's request to transfer an annual amount to the Click! fund from Tacoma Power electric revenues, to appropriately compensate Power's past, current and future beneficial uses of the telecommunications system infrastructure, which shall be used to pay Click! operating, maintenance, taxes, capital costs and debt, is approved. Tacoma Power's transfer from electric revenues under this Section 4 shall be a minimum of $6 Million annually, and in the event Click!'s costs exceed $6 Million for the year, Tacoma Power is approved to transfer additional funds not to exceed $10 Million per year. Click! may use these transferred funds to make capital improvements and purchase equipment as necessary to meet the objectives of the All-In Business plan.

Sec. 5. Staff will present, not less than annually, to the Board and Council on Click!'s status relative to its business plan objectives and any changes made to the business plan and business outlook for Click!. In 2020 and 2025, staff will prepare a report to the Board and Council detailing business plan objective achievements and financial status of Click! to determine any adjustments in future funding. Staff reports will describe the past, current, and future expected use of the telecommunications network by Tacoma Power.

Sec. 6. The Board directs staff to identify business efficiencies and savings that can be made through staff reorganization, looking at both represented and non-represented positions. Staff will negotiate with appropriate union representatives to collaboratively identify opportunities for efficiencies and savings.

Approved as to form and legality:

William Fosbre

Chief Deputy City Attorney

Clerk

Chair

Secretary

Adopted

Exhibit A

Key Business Plan Elements:

- Click! is expected to provide retail cable modem internet, voice over internet protocol, commercial broadband services, and other advanced telecommunications services in addition to retail cable television service to residential and commercial customers.
- Click! is expected to provide bundled service of cable television, internet and phone services.
- The Click! network is expected to continue operating as an Open Access Network.
- Click! is expected to maintain its existing wholesale relationships with the Internet Service Providers (ISP), including Rainier Connect, Net-Venture and Advanced Stream. No buy out of the ISPs' businesses is assumed. Wholesale internet pricing offered to ISPs will need to be addressed.
- Click! is expected to maintain its existing wholesale relationships with the Master Service Agreement (MSA) holders, including Rainier Connect, Optic Fusion, twtelecom, Integra, CenturyLink, Spectrum Networks and Noel Communications. No buyout of the MSAs' businesses is assumed. Wholesale broadband pricing offered to ISPs will need to be addressed.
- Click! is expected to remain a unit of Tacoma Power within Tacoma Public Utilities and be governed by the Tacoma Public Utilities Board. More independent and flexible governance is a key element of the plan.
- Tacoma Power is expected to pay 6% of the total O&M costs as its proportionate share for utilizing the telecommunications network. Tacoma Power's proportionate share of O&M costs may change over time as its use of the telecommunications network changes.
- Click! is expected to upgrade its hybrid fiber coaxial (HFC) network to 1 Gigahertz, deploy DOCSIS 3.1 technology, and, over time, build new plant extension with fiber-to-the-home (FTTH) technology.
- Click! is expected to offer Gigabit and multi-Gigabit service to residential customers.
- Click! is expected to continue offering Gigabit and multi-Gigabit Metro Ethernet services to commercial customers.
- Click! is expected to continue maintaining and supporting the City's Institutional Network (I-Net).
- Click! is expected to offer discounted residential Cable TV and Phone services to payment challenged customers based on existing Federal poverty guidelines (up to 100% of the income threshold) that have been adopted by Tacoma Public Utilities.
- Click! is expected to offer a $14.95 internet service for qualified low income customers, of which $9.25 of the charge is expected to be covered by the new Federal Lifeline program leaving a customer out-of-pocket cost of $5.70 per month.
- Click! is expected to achieve labor cost and operating savings by negotiating work rule changes, providing employee training and contracting out new and certain existing functions.
- Click! is expected to conduct door-to-door Sales Burst campaigns during the first and third years of the new business plan period, which are expected to generate between 4,000 and 6,000 new customers.

Financial and Customer Summary (Low/High Growth):

Base - Assumptions		Year 2 - 2017	Year 5 - 2020	Year 10 - 2025
Homes Passed		113,950	113,950	113,950
# of Retail Internet Customers	L	10,416	26,215	31,379
	H	10,750	28,919	35,713
# of Wholesale Internet Customers	L	17,333	5,695	3,754
	H	17,333	4,556	3,003
Internet Market share	L	24.4%	28.0%	30.8%
	H	24.6%	29.4%	34.0%
# of Phone Customers	L	1,800	4,566	5,399
	H	2,173	6,058	7,557
Phone Market share	L	1.6%	4.0%	4.7%
	H	1.9%	5.3%	6.6%
# of Cable Customers	L	19,035	18,544	13,831
	H	19,185	19,378	15,136
Cable Market share	L	16.7%	16.3%	12.1%
	H	16.8%	17.0%	13.3%
# of employees	L	89	101	104
	H	91	106	110
Cumulative Capital investment	L	$16.0M	$29.5M	$49.3M
	H	$16.1M	$30.0M	$50.2M
Annual Cash Flow/Subsidy	L	($19.5M)	($4.9M)	($5.7M)
	H	($19.6M)	($4.4M)	($4.2M)
Cumulative Cash Flow	L	($19.5M)	($39.5M)	($65.6M)
	H	($19.6M)	($38.6M)	($58.7M)
NPV	LH	($19.5M)	($36.6M)	($56.5M)
		($19.6M)	($35.9M)	($51.2M)

- It is anticipated that Click! will continue to operate in a deficit situation for the foreseeable future.
- The viability of this business plan is contingent upon securing external funding.

EXHIBIT 8

CITY OF TACOMA, WASHINGTON
DEPARTMENT OF PUBLIC UTILITIES
CLICK! NETWORK
COMMERCIAL OPERATIONS

OPERATIONAL SUMMARY - January 31, 2019

	January 2019	January 2018
TELECOMMUNICATIONS REVENUE		
CATV	$1,380,613	$1,467,922
Broadband	83,570	89,311
ISP	660,432	610,757
Interdepartmental	25,580	22,346
Total Operating Revenue	2,150,195	2,190,336
TELECOMMUNICATIONS EXPENSE-COMMERCIAL		
Administration & Sales Expense		
Salaries & Wages Expense	195,820	260,364
General Expense	26,932	27,567
Contract Services	959,674	1,015,922
IS & Intergovernmental Services	110,586	140,559
Fleet Services	176	53
Capitalized A & G Expense	(5,597)	(1,303)
Total Admin. & Sales Expense	1,287,591	1,443,162
Operations & Maintenance Expense		
Salaries & Wages Expense	306,856	404,973
General Expense	17,245	22,260
Contract Services	78,644	29,723
IS & Intergovernmental Services	1,888	2,324
Fleet Services	15,795	9,959
New Connect Capital	(4,805)	(11,243)
Total Oper. & Maint. Expense	415,623	457,996
Total Telecommunications Expense	1,703,214	1,901,158
Net Revenues (Expenses) Before Taxes and Depreciation and Amortization	446,981	289,178
Taxes	293,575	296,335
Depreciation and Amortization	146,903	192,495
	440,478	488,830
NET OPERATING REVENUES (EXPENSES)	$6,503	($199,652)

EXHIBIT 9

RESOLUTION NO. 39577

BY REQUEST OF COUNCIL MEMBERS BLOCKER, IBSEN, MCCARTHY, AND WOODARDS

A RESOLUTION directing the City Manager to hire an independent third-party consultant or consultants to audit, analyze, and establish a reasonable methodology for cost allocation between Tacoma Power and Click! Network and evaluate the expansion of Click! Network; authorizing the execution of professional services agreements, as necessary, which outline the scope and deliverables; and authorizing the use of up to $100,000, budgeted from the City Council Contingency Fund, to pay the costs associated therewith, pending reimbursement from Click! Network.

WHEREAS, on December 15, 2015, the City Council approved Resolution No. 39347, which required Tacoma Power to develop a business, financial, and marketing plan to provide Click! Network ("Click!") customers with retail cable television, voice, and internet services, and

WHEREAS, following a nine-month review, the Click! Engagement Committee ("Committee") described the community benefits of an enhanced Click! telecommunications system and an outline of the features of such a system, and

WHEREAS, on September 28, 2016, pursuant to Resolution No. U-10879 ("Resolution"), the Tacoma Public Utility Board ("Board") approved the Click! "All-In" Business Plan ("Plan"), and

WHEREAS, since its inception in 1996, Click! has been part of Tacoma Power's telecommunications system and was initially financed with Tacoma Power electric revenues, and

WHEREAS, since that time, the internal cost allocation between Click! and Tacoma Power has changed significantly and, over time, Tacoma Power has substantially increased the cost allocation borne by Click!, and

WHEREAS the most recent shift in cost allocation is supported by an accountant assessment which relies predominantly upon the cost-accounting recommendations of Tacoma Power, and

WHEREAS this dramatic change in cost allocation has been the key driver underlying the debate over the future of Click!, and has encouraged considerable public scrutiny as to the veracity and appropriateness of the current accounting assumptions and methodology implemented by Tacoma Power, and

WHEREAS the concerns raised about the current cost allocation methodology and the implications of said methodology on the Plan are significant and must be resolved, and

WHEREAS, at the October 25, 2016, City Council Study Session, Council Member McCarthy shared a Council Consideration Request directing the City Manager to hire an independent third-party consultant or consultants to audit, analyze, and establish an independent cost allocation methodology between Tacoma Power and Click! and evaluate the expansion of the telecommunications system contemplated by the proposed Plan in the context of an evolving broadband telecommunications industry, and, further, to authorize the use of up to $100,000 of City Council Contingency Funds for said purposes, and

WHEREAS the purpose of the proposed audit is to provide the City Council with the best analysis and information available for its deliberations on the proposed Plan, and to encourage the public's confidence in both the process and underlying assumptions of the Plan, and

WHEREAS Ordinance No. 22569 requires an affirmative vote of not less than six members of the Council in order to withdraw moneys from the City Council Contingency Fund; Now, Therefore,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF TACOMA:

Section 1. That the City Manager is hereby directed to hire an independent third-party consultant or consultants to audit, analyze, and establish a reasonable methodology for cost allocation between Tacoma Power and Click! Network, and evaluate the expansion of Click! Network.

Section 2. That the City Manager is hereby authorized to execute professional services agreements, as necessary, which outline the scope and deliverables necessary to perform the work described in Section 1.

Section 3. That the use of up to $100,000, budgeted from the City Council Contingency Fund, is hereby authorized to pay the costs associated with the work authorized herein, pending reimbursement from Tacoma Power.

Section 4. Concurrent with the third-party consultant review requested by the City Council, Tacoma Public Utilities staff will complete the more detailed aspects of the Business and Marketing Plan for the "All-In" Business Plan ("Plan")

consistent with the direction provided in City Council Resolution No. 39347. This Plan will be reviewed and revised based upon the findings of our third-party audit.

Adopted NOV 01 2016

Mayor

Attest:

City Clerk

Approved as to form:

City Attorney

City of Tacoma City Council Action Memorandum

TO: Mayor and Members of the City Council
FROM: T.C. Broadnax, City Manager, City Manager's Office
COPY: City Council and City Clerk
SUBJECT: Resolution authorizing the use of up to $100,000 of City Council Contingency Funds to hire third party consultant or consultants for a Click!! analysis and audit – November 1, 2016
DATE: October 25, 2016

SUMMARY:
Resolution directing the City Manager to hire independent third party consultant or consultants, to audit, analyze and establish a reasonable methodology for cost allocation between Tacoma Power and Click! and evaluate the expansion of the Click! Network, and to execute a professional services agreement(s) outlining the scope of work and deliverables; and, further authorizing the use of up to $100,000 of City Council Contingency Funds to pay for the costs pending reimbursement from Click!.

COUNCIL SPONSORS:
Council Members Blocker, Ibsen, McCarthy, and Woodards

STRATEGIC POLICY PRIORITY:
This City Council action best aligns with the following strategic policy priorities:

- Ensure all Tacoma residents are valued and have access to resources to meet their needs; and,
- Encourage and promote an efficient and effective government, which is fiscally sustainable and guided by engaged residents.

BACKGROUND:
On December 15, 2015, the City Council approved Resolution 39347 which required Tacoma Power to develop a business, financial and marketing plan to provide Click! customers with retail cable television, voice, and internet services. Following a nine-month review by the Click! Engagement Committee, the Committee described the community benefits of an "All-In" Business Plan ("Plan"). On September 28, 2016, the Tacoma Public Utility Board approved Resolution No. U-10879, wherein the Board approved the Plan. The Resolution and Plan rely upon Tacoma Power's most recent O&M cost allocation scheme and further requires an additional contribution of six to ten million dollars per year from "electric revenues" to Click!. Per the Resolution, these monies will be used to appropriately compensate Power's past, current and future beneficial uses of the telecommunications system infrastructure..."

Since its inception, in 1996, Click! has been a part of Tacoma Powers' telecommunications system. Click! was initially financed with Tacoma Power electric revenues. Since that time, the internal cost allocation between Click! and Tacoma Power has changed significantly. Over time, Tacoma Power has substantially increased the cost allocation borne by Click!. The most recent shift in the cost allocation is supported by an accountant assessment which relies predominantly upon the cost-accounting recommendations of Tacoma Power. This dramatic change in cost allocation spurred scrutiny as to the financial viability and prospective legality of Click!, and has been the key driver underlying the debate over the future of Click!. It has also encouraged considerable public scrutiny as to the veracity and appropriateness of the current accounting assumptions and methodology implemented by Tacoma Power. Ultimately, The sponsoring City Council Members feel that the concerns raised about the current cost allocation methodology and the implications of said methodology on the proposed Plan are significant and must be resolved prior to making a final decision on the Plan.

At the October 25, 2016 City Council Study Session, Council Member McCarthy shared a Council Consideration Request to put a resolution on the November 1st City Council Agenda directing the City Manager to hire a third party consultant or consultants to audit, analyze, and establish an independent cost allocation methodology between Tacoma Power and Click!, and to evaluate the expansion of the telecommunications system contemplated by the proposed "All-In" Business Plan in the context of an evolving telecommunications industry. The purpose of the analysis and audit will be to provide the City Council with the best analysis and information available in its deliberations on the proposed Plan, and further aims to encourage the public's confidence in the process and the underlying assumptions of the Plan. Also discussed at the Study Session was the City Council's direction to not slow the development of the "All-In" Business Plan consistent with City Council Resolution No. 39347, while the third-party consultant or consultants completed their analysis and audit. Section 1 of this resolution states: "That Tacoma Power shall develop a business, financial and marketing plan (the "Business Plan") to provide customers with comprehensive, accessible, competitive retail cable television and internet services including voice over data internet protocol, retail and commercial broadband, Gigabit service and related and enhanced services responsive to market demand and competition as new technologies and services become available."

ISSUE:
In order to authorize use of the City Council's Contingency Funds for this purpose, a resolution must be adopted.

ALTERNATIVES:
The City Council could choose to adopt or reject the resolution.

RECOMMENDATION:
Recommend that the City Council direct the City Manager to hire third party consultant(s) to audit, analyze and review/establish an appropriate cost allocation method for Tacoma Power and Click!, and evaluate the "All-In" Business Plan to appropriately advise the City Council and provide information to assist the City Council in making an informed policy decision; and, further authorizing the use of up to $100,000 of City Council Contingency Funds to pay for the costs.

FISCAL IMPACT:
If approved, this resolution would authorize the use of up to $100,000 of the City Council's Contingency Funding, which is available in the 2015-2016 biennial budget. Council Contingency Funds would be initially utilized to pay for the costs for this scope of work, and the general government would subsequently seek reimbursement of these expenditures from Click!.

CITY OF TACOMA, WASHINGTON
OFFICE OF THE CITY COUNCIL
COUNCIL CONSIDERATION REQUEST (CCR)

TO:	City Council Members
FROM:	Councilmember Conor McCarthy
COPIES TO:	T.C. Broadnax, City Manager; Mark Lauzier, Assistant City Manager; Nadia Chandler Hardy, Assistant to the City Manager; Executive Leadership Team; File
SUBJECT:	Click
DATE:	October 19, 2016

ITEM/ISSUE PROPOSED FOR COUNCIL CONSIDERATION:

The following item will be scheduled on the agenda of the earliest available Study Session:

We respectfully ask for City Council consideration of a resolution directing the City Manager to hire third party consultant(s) to audit, analyze, and establish a reasonable methodology for cost allocation between Tacoma Power and Click, and to evaluate the expansion of the Click! network in the context of an evolving telecommunications and cable industry. This process will take into account the past and present benefits of Click to Tacoma Power, as well as the future prospective benefits that could be derived from improvements to the Click! network.

BRIEF BACKGROUND:

On December 15, 2015, the City Council approved Resolution 39347 which required Tacoma Power to develop a business, financial and marketing plan to provide Click customers with retail cable television, voice, and internet services. Following a nine-month review by the Click Engagement committee, the committee recommended approval of its 'All-In Compete Business Plan' ("Plan"). On September 28, 2016, the Tacoma Public Utility Board approved Resolution No. U-10879, wherein the Board approved the Plan. The Resolution and Plan rely upon Tacoma Power's most recent O&M cost allocation scheme and further requires an additional contribution of six to ten million dollars per year from "electric revenues" to Click. Per the Resolution, these monies will be used to "appropriately compensate Power's past, current and future beneficial uses of the telecommunications system infrastructure..."

Since its inception, in 1996, Click has been a part of Tacoma Powers' telecommunications system. Click was initially financed with Tacoma Power electric revenues. Since that time, the internal cost allocation between Click and Tacoma Power has changed significantly. Over time, Tacoma Power has substantially increased the cost allocation borne by Click. The most recent shift in the cost allocation is supported by an accountant assessment which relies predominantly upon the cost-accounting recommendations of Tacoma Power. This dramatic change in cost allocation spurred scrutiny as to the financial viability and prospective legality of Click, and has been the key driver underlying the debate over the future of Click. It has also encouraged considerable public scrutiny as to the veracity and appropriateness of the current accounting assumptions and methodology implemented by Tacoma Power. Ultimately, we feel that the concerns raised about the current cost allocation methodology and the implications of said methodology on the proposed Plan are significant and must be resolved prior to making a final decision on the Plan.

Therefore, in order to provide the City Council with the best analysis and information available in its deliberations on the proposed Plan, and further in order to encourage the public's confidence in the process and the underlying assumptions of the Plan, we respectfully ask for City Council consideration of a resolution directing the City Manager to hire third party consultant(s) to audit, analyze, and establish independent reasonable methodology for cost allocation between Tacoma Power and Click, and to evaluate the expansion of the Click! network in the context of an evolving telecommunications and cable industry, as well as the future prospective benefits that could be derived from improvements to the Click! network.

SUBMITTED FOR COUNCIL CONSIDERATION BY: _____

Councilmember Conor McCarthy

CITY OF TACOMA, WASHINGTON
OFFICE OF THE CITY COUNCIL
COUNCIL CONSIDERATION REQUEST (CCR)

SUPPORTING COUNCILMEMBERS SIGNATURES (2 SIGNATURES ONLY)
(Signatures demonstrate support to initiate discussion and consideration of the subject matter by City Council for potential policy development and staff guidance/direction.)

1. _____ **DISTRICT#** _____ **at large** ____

2. _____ **DISTRICT#** ____3____

3. _____ **DISTRICT#** ____1____

RESOLUTION NO. 39577

BY REQUEST OF COUNCIL MEMBERS BLOCKER, IBSEN, MCCARTHY, AND WOODARDS

A RESOLUTION directing the City Manager to hire an independent third-party consultant or consultants to audit, analyze, and establish a reasonable methodology for cost allocation between Tacoma Power and Click! Network and evaluate the expansion of Click! Network; authorizing the execution of professional services agreements, as necessary, which outline the scope and deliverables; and authorizing the use of up to $100,000, budgeted from the City Council Contingency Fund, to pay the costs associated therewith, pending reimbursement from Click! Network.

WHEREAS, on December 15, 2015, the City Council approved Resolution No. 39347, which required Tacoma Power to develop a business, financial, and marketing plan to provide Click! Network ("Click!") customers with retail cable television, voice, and internet services, and

WHEREAS, following a nine-month review, the Click! Engagement Committee ("Committee") described the community benefits of an enhanced Click! telecommunications system and an outline of the features of such a system, and

WHEREAS, on September 28, 2016, pursuant to Resolution No. U-10879 ("Resolution"), the Tacoma Public Utility Board ("Board") approved the Click! "All-In" Business Plan ("Plan"), and

WHEREAS, since its inception in 1996, Click! has been part of Tacoma Power's telecommunications system and was initially financed with Tacoma Power electric revenues, and

WHEREAS, since that time, the internal cost allocation between Click! and Tacoma Power has changed significantly and, over time, Tacoma Power has substantially increased the cost allocation borne by Click!, and

WHEREAS the most recent shift in cost allocation is supported by an accountant assessment which relies predominantly upon the cost-accounting recommendations of Tacoma Power, and

WHEREAS this dramatic change in cost allocation has spurred scrutiny as to the financial viability and prospective legality of Click!, has been the key driver underlying the debate over the future of Click!, and has encouraged considerable public scrutiny as to the veracity and appropriateness of the current accounting assumptions and methodology implemented by Tacoma Power, and

WHEREAS the concerns raised about the current cost allocation methodology and the implications of said methodology on the Plan are significant and must be resolved prior to making a final decision on the Plan, and

WHEREAS, at the October 25, 2016, City Council Study Session, Council Member McCarthy shared a Council Consideration Request directing the City Manager to hire an independent third-party consultant or consultants to audit, analyze, and establish an independent cost allocation methodology between Tacoma Power and Click! and evaluate the expansion of the telecommunications system contemplated by the proposed Plan in the context of an evolving telecommunications industry, and, further, to authorize the use of up to $100,000 of City Council Contingency Funds for said purposes, and

WHEREAS the purpose of the proposed audit is to provide the City Council with the best analysis and information available for its deliberations on the proposed Plan, and to encourage the public's confidence in both the process and underlying assumptions of the Plan, and

WHEREAS Ordinance No. 22569 requires an affirmative vote of not less than six members of the Council in order to withdraw moneys from the City Council Contingency Fund; Now, Therefore,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF TACOMA:

Section 1. That the City Manager is hereby directed to hire an independent third-party consultant or consultants to audit, analyze, and establish a reasonable methodology for cost allocation between Tacoma Power and Click! Network, and evaluate the expansion of Click! Network.

Section 2. That the City Manager is hereby authorized to execute professional services agreements, as necessary, which outline the scope and deliverables necessary to perform the work described in Section 1.

Section 3. That the use of up to $100,000, budgeted from the City Council Contingency Fund, is hereby authorized to pay the costs associated with the work authorized herein, pending reimbursement from Click! Network.

Section 4. Concurrent with the third-party consultant review requested by the City Council, Tacoma Public Utilities staff will complete the more detailed

aspects of the Business and Marketing Plan for the "All-In" Business Plan ("Plan") consistent with the direction provided in City Council Resolution No. 39347.

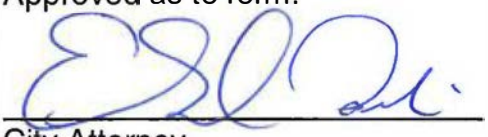
Adopted _____

_____
Mayor

Attest:

_____
City Clerk

Approved as to form:



_____
City Attorney

EXHIBIT 10

MEMORANDUM

TO: Jeff Lueders

FROM: Pam Burgess

DATE: 2/28/2019

SUBJECT: Click! Network 2018 Cable TV Annual Report

CLICK! NETWORK
TACOMA POWER

The following information constitutes Click! Network's 2018 Annual Cable TV Report, as required in Section 9.2 of Ordinance No. 27846. The data is accurate as of yearend 2018.

A. Gross Revenue Report (attached)

B. Summary of activities within the Tacoma city limits:

- Total customers for each general category of service:
  - Broadcast: 11,774
  - Standard: 9,522
  - Digital: 3,233
  - Premium: 2,095
- Number of homes passed: 84,554
- Total miles of cable plant: 912.88
- Miles of overhead plant: approximately 71% = 648.55
- Miles of underground cable plant: approximately 29% = 264.34
- Other system facilities and equipment constructed:

  During 2018, 4,962 radio frequency leaks were detected and resolved, resulting in reduced interference and improved service performance. An annual fly-over test to assess the system's signal leakage in the aeronautical band was performed in March, resulting in a finding that 99.87% of points passed were within the required tolerance of signal egress.

  In 2018, Click! deployed fiber-to-the-premises (FTTP) technology for new plant extension as it is the state of the art technology for modern network architecture and enables reliable and cost efficient delivery of Gigabit internet services. FTTP is currently deployed in The Knolls, a 165 lot subdivision located in University Place. Two multiple dwelling units in Tacoma are currently under construction and being wired for FTTP exclusively. It is anticipated these complexes will be occupant-ready in the 1st quarter of 2019. Internet services delivered over FTTP will be symmetrical with same download and upload speeds ranging from 250 Mbps to 1000 Mbps.

  Several multiple dwelling unit complexes of under 100 units each were wired for Click! service delivery in 2018. One complex of note was Stadium Apartments, a 147-unit complex that is providing internet access directly through a commercial Ethernet connection over the Click! network.

- Services added:

  During the course of 2018, Click! made several channel lineup changes, as follows:

  Additions to the channel lineup:
  KFFV - MeTV
  KFFV - Movies!
  KFFV - Heroes and Icons
  CBAT
  KTBW HD

  Deletions from the channel lineup:
  KFFV - Evine
  KFFV - Azteca
  KFFV – AAT
  CBUT
  CBS Sports Network

  Other channel lineup changes:
  NHK World relocated to channel 518
  Switch from East Coast to the West Coast feed for WGN
  Game Show Network relocated from the Click! ON Digital package to the Standard package, providing many more subscribers the opportunity to enjoy that popular programming.

  At year end, Click!'s programming lineup consisted of 439 channels of which 296 are standard definition and 143 are high definition.

  During 2018, Click! offered 24,000 hours of Video on Demand and access to 100 programming networks on mobile devices through Watch TV Everywhere.

  Click! also enhanced its TiVo whole home service with the addition of voice activated remote controls and audible channel guide and menus in compliance with the 21st Century Video Accessibility Act of 2010.

C. Summary of complaints received, with resolutions:

The majority of complaints received by Click! staff fall into billing and service categories. All complaints were handled satisfactorily. Customers calling about non-pay disconnection notices often are counseled and a payment plan is established. Customers calling to complain about an installation issue are handled by field supervisors. Specific complaints are either resolved by a service credit or repairs made to the customer's satisfaction. No formal complaints were received during 2018.

A summary of damage claims filed and closed during 2018 is attached.

D. Other items required in Title 16A:

- Current channel lineup and cable TV price list – (attached)
- Current cable TV new installation packet – (attached)

E. Other interesting things:

The Click! budget for the 2019-2020 biennium includes two Cable TV rate increases.

The first of the two planned Cable TV rate increases was proposed for approval in October 2018. The Public Utility Board and the City Council approved the proposed rate increase in November, 2018, to become effective as of January 1, 2019. The increase averages 9.8%.

Click! conducted customer satisfaction surveys throughout the year through leave behind survey cards and through the mail. All new Cable TV customers and customers who reported a service issue were surveyed. Click! customer service representatives and technicians received ratings averaging 3.7 and 3.8, respectively, on a scale of 1 – 4.

In January 2018, the Public Utility Board and the City Council adopted Resolutions U-10988 and RES39930, respectively, that rescinded their prior direction to pursue the All-In Retail Model, established twelve community policy goals for setting the future course of the Click! network, and directed the City's key executives to jointly pursue public partnership opportunities. The City engaged CTC Technology & Energy to evaluate its options for Click! network and is currently in the process of selecting a private partner for the Click! network.

If you have questions about anything in this report, please feel free to contact me at 253-502-8015.

Sincerely,

Pam Burgess
Business Operations Manager

EXHIBIT 11

RESOLUTION NO. 39347

A RESOLUTION relating to Click! Network; authorizing Tacoma Power to prepare a business plan to provide, in addition to retail cable television, retail internet services including voice over data internet protocol ("VoIP"), commercial broadband and Gigabit service ("Retail Services").

WHEREAS, in 1997, the City of Tacoma, through its electrical utility, embarked on an effort to construct and operate a state-of-the-art telecommunication system for the benefit of its electric utility and its electric utility customers, and

WHEREAS the telecommunications system was constructed and has been in continuous operation since 1999, and has proven to provide benefits for the City electric utility and electric utility customers located both inside and outside City limits, and

WHEREAS the telecommunication system is now a vital component of the City's electric utility and continued operation and maintenance of the system is an essential function of the electric utility, and

WHEREAS some of the benefits the City's electric utility and electric utility customers have received from the system include (1) enhanced control, reliability and efficiency of the City's electrical system; (2) increased capability to meet the expanding telecommunication requirements in an evolving competitive electric market, including the ability to make real-time, two-way interactive communications with individual energy consumers; (3) improved traditional electric products provided to consumers; (3) diversified revenue streams through

new business lines (i.e., internet transport, cable TV, etc.); and (5) maximized return on the City's electric system assets, and

WHEREAS telecommunication technology is constantly evolving and improving, including recent developments in the areas of voice over data internet protocol, over-the-top video, and Gigabit-type service, and

WHEREAS the City's electric utility telecommunication system needs to be updated and modernized to keep up with current technology, and

WHEREAS some benefits of updating and modernizing the City's electric utility telecommunication system include allowing the utility to continue to efficiently and effectively meet the demands of new federal regulations relating to reliability of the electrical system, combating threats from possible cyberterrorism acts, participating in energy transactions and trades to balance the energy markets in less than 15-minute increments, enhancing communication between electric utility assets and electric utility consumers, and providing electric utility customers a means to instantly access electric utility accounts information for payment of bills, report outages, and obtain energy usage and conservation information, and

WHEREAS the expenditure of City electric utility revenues to update and modernize the electric utility telecommunication system is a necessary operating expense of the utility, and

WHEREAS the updating and modernization of the telecommunication system will have ancillary benefits to the City's electric utility customers by allowing them to access advanced telecommunication products such as voice

over data internet protocol, retail and commercial broadband, digital cable television and video on-demand products, Gigabit service, Smart Cities technology, and related and enhanced services offered as new technologies become available ("ancillary benefits"), and

WHEREAS the efficient and orderly development and distribution of these ancillary benefits to electric utility customers through the electric utility telecommunication system must come through careful and deliberate planning, and

WHEREAS the Public Utility Board passed Amended Resolution No. U-10828, recommending the development of a business plan to the City Council, and

WHEREAS City Council has determined that development and evaluation of a draft business plan is in the best interests of the electric utility customers and the City; Now, Therefore,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF TACOMA:

Section 1. That Tacoma Power shall develop a business, financial and marketing plan (the "Business Plan") to provide customers with comprehensive, accessible, competitive retail cable television and internet services including voice over data internet protocol, retail and commercial broadband, Gigabit service and related and enhanced services responsive to market demand and competition as new technologies and services become available.

Section 2. The Utility Board and the City Council shall, upon adoption of this Resolution, appoint a Click! Engagement Committee to provide oversight and assistance to Click! in the development of the Business Plan. The Click! Engagement Committee shall be comprised of two (2) Public Utility Board Members, two (2) City Council members, two (2) members of the public who have experience in the broadband industry, one selected by the Utility Board Chair and one selected by the Mayor, and one (1) Tacoma Power ratepayer at large selected by the Mayor. All appointments shall be approved by the Board and Council. The Click! Engagement Committee shall meet to consult with Click! on a regularly scheduled basis established by the Committee and Click!.

Section 3. That Tacoma Power shall present an initial Business Plan to the Public Utility Board and City Council on or before April 29, 2016.

Adopted DEC 15 2015

Mayor

Attest:

City Clerk

Approved as to form:

City Attorney

EXHIBIT 12

EXHIBIT 12

TACOMA POWER
TACOMA PUBLIC UTILITIES

3628 South 35th Street
Tacoma, Washington 98409-3192

TACOMA PUBLIC UTILITIES

August 11, 2017

Michael Mirra, Executive Director
Tacoma Housing Authority
902 South L Street
Tacoma, WA, 98405-4037

Dear Mr. Mirra:

Subject: Letter Agreement Regarding Water Heater Demand Response Project

This Letter Agreement ("Letter Agreement") memorializes and specifies the circumstances, terms, and conditions of an agreement between the City of Tacoma, Department of Public Utilities, Light Division d.b.a. Tacoma Power ("Tacoma Power") and the Tacoma Housing Authority ("THA"), pertaining to the water heater demand response project occurring at Salishan Phase 1 located at 1724 East 44th Street, Tacoma, WA.

Recitals

- Water Heater Demand Response Project: Tacoma Power and the Bonneville Power Administration are researching the demand response (DR) effectiveness of the Consumer Technology Association (CTA) 2045 modular communication port in residential water heaters. In compliance with the Seventh Power Plan issued by the Northwest Power and Conservation Council, BPA is seeking new conservation opportunities and ways to increase the cost-effectiveness and reliability of demand response. The result of this Water Heater Demand Response Project will determine whether the CTA 2045 modular communications port will be integrated into production water heaters and incorporated into utility demand response programs nationwide.

- Location of the project: BPA is seeking to test up to 600 water heaters across the region; Tacoma Power will test approximately 90 electric resistance water heaters within the service territory. Tacoma Housing Authority has agreed to host these test water heaters at the Salishan housing development located on East 44th St., Tacoma.

- Common interest between THA and Tacoma Power: Both Tacoma Power and THA share an interest in installing energy efficient equipment in the Salishan housing development homes in order to reduce water heating costs for their tenants and a common interest in researching and documenting new products and methods to save energy.

- Coordination: BPA will negotiate production of and a price for an electric resistance water heater manufactured by AO Smith. These water heaters as well as heat pump water heaters manufactured by AO Smith and others will be used in the project. The water heaters will be made available for purchase by THA by AO Smith during the early summer of 2017. The price THA pays for these water heaters will be at or below $350 as negotiated by BPA and AO Smith. Tacoma Power will coordinate with THA on delivery to THA of the CTA-2045 communications modules and module installation instructions. Tacoma Power will coordinate with Click! to design and install a project specific WIFI network for data transfer back to BPA. Neither THA nor their participating tenants will have access to this WIFI network. THA will purchase and install the water heaters and all code required peripherals. Project communications modules will be installed and a WIFI hook up established at time of water heater installation.

- Project timeline and costs: The Water Heater Demand Response Project is scheduled from July 2017 through August 2018. All costs for replacement and installation of electric water heaters will be borne by the THA. Communications modules and WIFI will be provided by BPA and Tacoma Power. The AO Smith PXNT-50 water heater carries an EF 95 efficiency rating and 10 year manufacturer's warrantee. BPA will negotiate the cost of the AO Smith PXNT-50 water heaters to be comparable to the existing EF 92, 6 year warrantee water heaters currently installed at Salishan Phase 1. In consideration for costs associated with the water heaters, communication module installation, and working with tenants in relation to the program, THA will receive the payments specified in Section 8 below.

Now, therefore, in consideration of the mutual benefits to be realized hereunder, Tacoma Housing Authority and Tacoma Power agree as follows:

Term

The Term of this Letter Agreement will commence on the last date the Parties have signed this Letter Agreement below and will expire on December 31, 2018, unless mutually extended by both parties.

Tacoma Housing Authority Responsibilities

1. Water heaters: THA shall be responsible for purchase and installation of AO Smith PXNT-50 water heaters in identified duplex and triplex housing in Phase 1 of the Salishan housing development. THA shall install communication ports and modules on the water heaters during installation and establish a WIFI connection with the WIFI set up by Tacoma Power. Water heaters will be priced at or below $350 each for this project.

2. Communications devices: Tacoma Power shall provide port adapters that will be affixed to the communications port upon water heater installation by the THA. A UCM communications device will connect to the water heater via the port adapter. The UCM device will receive radio signal commands during the project and control the function of the water heater during specified demand response "events." Upon installation, THA will record the unique MAC address found on each UCM device, the physical address and tenant information for each installation and provide them to Tacoma Power. The UCM communication devices will sync with the dedicated WIFI network built for this project to report data back to Tacoma Power on a daily basis.

3. Coordination of Access during Project: Tacoma Power staff shall be granted reasonable access to the project homes for the purpose of troubleshooting WIFI connection, communication issues and retrieval and replacement of faulty UCM modules. When access is required for the aforementioned reasons, THA will coordinate access needs between Tacoma Power and tenants.

4. Financial responsibility for installation of water heaters: THA accepts financial responsibility for the purchase and installation of the replacement water heaters in each project home. THA further consents to the installation of the following monitoring equipment: a communications port to receive a designated UCM communications module. In addition, a WIFI router will be deployed in or near each project home to facilitate transfer of data back to Tacoma Power. THA expressly acknowledges and agrees that, for the term of this Agreement and the Water Heaters Demand Response Project, the monitoring equipment identified above shall remain the property of Tacoma Power and/or the Bonneville Power Administration and shall not be considered fixtures of the project homes except as provided for in this Letter Agreement even though said equipment shall be attached to real property within the homes. THA acknowledges and agrees that it shall have no, and shall not exercise any, lien or other rights in the monitoring equipment during the term of this Agreement. If THA exercises any rights as a mortgagor or lien holder, THA acknowledges and agrees that it has no lien or other interests in the monitoring equipment and said systems and equipment shall be removed by Tacoma Power.

Tacoma Power Responsibilities

5. Communications hardware and WIFI network: Tacoma Power shall provide port adapters and UCM communication devices for installation on water heaters as they are installed by the THA. A dedicated WIFI network will be designed and installed by Tacoma Power for this project. Tacoma Power will bear all cost for installation, operation and decommissioning of this network.

6. Removal of Study Equipment: At the conclusion of the Water Heater Demand Response Project, Tacoma Power will coordinate with THA and occupants for the removal of monitoring and WIFI equipment.

We request the concurrence by Tacoma Housing Authority by affixing the appropriate signature where indicated below. Thank you.

Sincerely,

Clay Norris
Tacoma Power – Power Manager

City of Tacoma, Department of Public Utilities, Light Division

Accepted:

By: _____
Clay Norris – Power Manager

Date: 8-24-17

Tacoma Housing Authority

Accepted:

By: _____
Michael Mirra, Chief Executive Officer

Date: 8.14.17

Approved:

_____
Leda Voigt – Senior Financial Manager

Date: 8/16/17

Approved as to Form:

_____
Michael Smith – Deputy City Attorney

Date: 8/15/17

EXHIBIT 13

Construction and Maintenance

Tacoma Power has a number of established preventive and predictive maintenance programs and continues to develop more. For example, the substation predictive maintenance program can identify substation equipment requiring corrective action before a failure occurs through utilization of infrared, oil sample testing, and dissolved gas analysis. Tacoma Power owns and maintains approximately 49,000 power poles. The Pole Replacement program strategy is to test and treat 9% of the poles annually maintaining an 11-year cycle. Tacoma Power also performs tree trimming around its distribution and transmission lines, maintaining two and four year trimming cycles along with programs to replace dangerous trees with utility friendly trees.

Telecommunications Infrastructure

Approximately 1,500 miles of fiber and coaxial cable have been constructed by Tacoma Power in the cities of Tacoma, University Place, Fircrest, Lakewood and Fife, and portions of unincorporated Pierce County, providing Tacoma Power with a state-of-the-art telecommunication system with which supports transmission and distribution operations, advanced metering, and retail and wholesale commercial services. The network currently covers approximately 66% of the households in Tacoma Power's service territory.

The network consists of a hybrid fiber-optic coaxial ("HFC") system, which delivers two-way signals for cable TV, cable modem Internet services, and advanced metering. In addition, SONET ("Synchronous Optical Network") and Gigabit Ethernet technologies are used to support communications across Tacoma Power's transmission and distribution system and to carry out data transport services for commercial customers. The network was designed and constructed to meet high telecommunications standards, containing a redundant backbone and redundant service loops, which seek to ensure uninterrupted signal transport in the event of a network break. A network surveillance system allows Tacoma Power to monitor the system at all times.

Commercial Telecommunication Services. Launched in 1998 under the brand name Click! Network, Tacoma Power provides three commercial telecommunication services to customers of Tacoma Power: retail cable television, wholesale broadband transport and wholesale high-speed Internet over cable modem. Click! Network is one of several providers of telecommunications services in the Tacoma area.

Click! Network is accounted for as part of the Electric System. In 2016 Click! Network's annual revenues were approximately $26.6 million, and annual operating expenses plus gross earnings taxes were approximately $29.7 million.

Cable television is Click! Network's primary retail business. Click! currently has approximately a 15% share of a very competitive local cable television market. Cable TV products available to both residential and business customers include broadcast television, digital and high-definition channels, digital video recording capability, TiVo with access to over-the-top ("OTT") content such as Netflix, Hulu, YouTube and Pandora, TVEverywhere, and a wide variety of video-on-demand services. Video-on-demand services include local programming tied to schools, colleges, local governments and community organizations strengthening Click! Network's brand identity in the communities served.

Under wholesale Master Service Agreements, seven telecommunications carriers provide high capacity last mile data transport circuits to their customers utilizing Click! Network's telecommunications infrastructure. The seven telecommunications carriers provide SONET data services ranging from DS-1 lines to OC-48 lines and customized Metro Ethernet circuits to meet data transport and web access needs of large and small businesses in the Tacoma area.

Also under wholesale Master Service Agreements, two qualified locally based Internet Service Providers ("ISPs") provide high-speed Internet services via cable modems to their customers utilizing Click! Network's telecommunications infrastructure. The ISPs provide a variety of speed packages to meet the needs of the residential

and business consumers in the Tacoma area. As part of the contract, the two ISPs also provide customer service, cable modem installation, customer premise equipment and technical support services to their Internet customers.

Click! ended 2016 with 17,468 cable TV customers, 23,344 wholesale high-speed Internet service customers, and 173 wholesale broadband transport circuits.

Click! also continues to provide the City of Tacoma I-Net services to approximately 190 sites to keep the cost of telecommunications low for many governmental entities.

Click! Network implemented a 12.9% cable TV service rate increase effective March 1, 2017. An additional cable TV rate increase is planned for March 1, 2018. These cable TV rate increases are expected to generate approximately $7.7 million in additional revenue. A major portion of additional revenue will be used to cover increases in programming costs.

CAPITAL IMPROVEMENT PROGRAM

Tacoma Power has funded its past capital improvement programs from contributions in aid of construction, proceeds of Parity Bonds and subordinate lien revenue bonds, and Revenues of the Electric System. The actual amounts spent during the past five years, together with the sources of funds used, are displayed in the table below.

Historical Sources of Capital Improvement Funds
($000)

Source of Funds	2012	2013	2014	2015	2016
Parity and Subordinate Lien Bond Proceeds	$ 51,730	$ 35,723	$ 58,834	$ 58,003	$ 50,995
Contributions in Aid of Construction(1)	4,716	3,735	3,029	4,777	3,293
Cash Reserves	16,643	23,656	21,160	19,301	30,536
Total	$73,089	$63,114	$83,023	$82,081	$84,824

(1) Customer contributions to fund capital projects.
Source: Tacoma Power

Tacoma Power has a long-term goal to finance an average of 50% of its normal capital requirements from net operating revenues with the balance from contributions in aid of construction received from customers and borrowed funds. However, due to varying water conditions, the amount of the capital improvement program, and periodic cash defeasance of outstanding Parity Bonds, the amount actually financed from net operating revenues varies from year to year. From 2012 to 2016, Tacoma Power financed an average of 66% of its capital improvements from borrowed funds. Tacoma Power's policy is to fund major projects with borrowed funds.

the City Council. The Department's budget is presented to the Board for review and approval and then forwarded to the City Council for approval and inclusion in the City's budget. The Board meets twice monthly.

The Department consists of the Light Division ("Tacoma Power"), Water Division ("Tacoma Water"), and Belt Line Railroad Division ("Tacoma Rail"). The Board has supervision and control over most Department business. In the case of budgets, rates, bond issues, and additions and betterments to a utility system and system expansions, actions approved by the Board must also be approved by the City Council.

The Board appoints the Director of Utilities who is the chief executive officer of the Department. The Board must evaluate the performance of the Director annually and reappoint the Director every two years subject to reconfirmation by the City Council with the next reconfirmation scheduled for 2017. The reappointment of the Director has been approved by the Board and is currently pending before the City Council. William A. Gaines will retire from the position, effective December 2, 2017. The Director, with the concurrence of the Board, has the power to appoint division superintendents.

Utility rates and charges are initiated by the Board and adopted by the City Council, and are not subject to review or approval by any other governmental agency. See "ELECTRIC SYSTEM CUSTOMERS, ENERGY SALES, REVENUES AND RATES—Electric Rates."

The City Charter provides that the revenues of utilities owned and operated by the City shall never be used for any purposes other than the necessary operating expenses thereof, including a reasonable gross earnings tax imposed by the City Council for the benefit of the general fund of the City, interest on and redemption of the outstanding debt thereof, the making of additions and betterments thereto and extensions thereof, and the reduction of rates and charges for supplying utility service to consumers. The funds of any utility may not be used to make loans to or purchase the bonds of any other utility, department, or agency of the City. See "FINANCIAL INFORMATION—Taxes Imposed on Tacoma Power."

Tacoma Power - General

Tacoma Power is organized into six business units:

- ***Generation*** operates and maintains Tacoma Power's four hydroelectric generating projects (Cowlitz, Cushman, Nisqually and Wynoochee) and the associated recreational facilities, fish hatcheries and other project lands.

- ***Power Management*** manages, schedules and directs the power supply portfolio which includes Tacoma Power-owned generation and power supply contracts. Power Management markets bulk and ancillary power supply services, performs power trading activities, plans for and acquires conservation resources, and is responsible for compliance with various state, regional and federal regulatory mandates.

- ***Transmission and Distribution*** plans, constructs, operates and maintains the transmission and distribution systems including substations, the underground network system, revenue metering facilities and all overhead transmission and distribution systems.

- ***Rates, Planning and Analysis*** plans for and manages the retail rate process, financial planning activities, operations and capital budget development and monitoring, strategic asset management, construction project management, strategy management, and energy risk management analysis and modeling.

- ***Click! Network*** plans, constructs, operates and maintains a hybrid fiber coaxial ("HFC") telecommunications network that supports the operation of Tacoma Power's electrical transmission and distribution system, provides retail cable TV, and wholesale high-speed Internet and data transport services to resellers.

- ***Utility Technology Services*** ("UTS") addresses existing and emerging technology requirements essential to managing Tacoma Power's computing systems. This includes supporting and enhancing utility system operations, communications, metering, cyber security, relevant smart grid applications, and the information technology strategic planning. UTS unifies the planning, design, deployment and maintenance of operational

2016 SUPERINTENDENT'S REPORT
TACOMA POWER

CLICK!

Financial Status

Click! Network commercial revenues declined from $27.3 million in 2015 to $26.7 million in 2016. The retail cable TV customer base dropped 4.6 percent ending the year with 17,468 active customers, and the Internet cable modem customers served by the three wholesale Internet Service Providers (ISPs) - Advanced Stream, Net-Venture, Inc., and Rainier Connect, grew by .4 percent ending the year with 23,344 active customers. Click! provided 173 broadband transport circuits to Click!'s wholesale service providers allowing them to provide an array of telecommunication services to many businesses in the service area. Additionally, Click! continued to provide the City of Tacoma I-Net services to approximately 190 sites, keeping the cost of telecommunications low for many government entities, and also provided support for just over 15,000 gateway power meter connections.

Cable TV Rate Adjustments

Because a final policymaker decision regarding Click! Network's long term business plan remained outstanding in 2016, no cable television rate increases were implemented. Although Cable television prices continue to remain under market, the postponement of rate adjustments contributed to the decline in revenues.

Channel Additions

During 2016, Click! Network migrated 10 networks from optional service levels to its Broadcast package and migrated Big Ten Network and Sprout from its Sports & Family package to its Click! ON Digital package. Three networks discontinued operations in 2016, Pivot, UWTV, and MundoMax, but TV Tacoma HD was added, bringing the total to 376 video and 65 audio channels. Click! also added a variety of national and local video on demand content for a total offering of over 12,000 hours of content to make the product more competitive. Additionally, Click! added new networks to its Watch TV Everywhere service. Click!'s cable TV customers can now enjoy watching Click! video content from 84 networks on any of their mobile devices with an internet connection.

Website Improvements

Click! Network launched a new website in June 2016. Improvements included streamlined navigation, responsiveness to mobile device screen sizes, enhanced TV listings, and an online shopping cart. Click! cable television products, along with ISP internet packages, are now prominently displayed, enabling the potential customer to select services and submit a self-service order online.

Customer Satisfaction Survey

Customer Satisfaction survey cards were mailed to all new cable TV customers and to all customers who had a service related issue. Click! customer service and technicians representatives received ratings averaging 3.7 and 3.8 respectively on a scale of 1 – 4. In addition, a Customer Satisfaction Survey conducted on Click! Network's behalf by Washington State University's Social & Economic Sciences Research Center (SESRC) showed a mean average overall customer satisfaction score of 8.08 on a 1-10 scale. The results revealed that customers are very satisfied with the services provided by Click! and in particular, recognized the quality of service provided by our Sales and Service Representatives and Service Technicians.

New Tools

Click! purchased the CPAT Flex Digital Leakage Monitoring System to address concerns about interference from cable leakage in the aeronautical and LTE bands. The CPAT Flex Digital Leakage Monitoring System automates the signal leakage detection process freeing up technicians for other tasks. Since the tool is continuously monitoring the network, signal leakage is quickly detected and repaired.

Click! also purchased the CheetahXD software to replace the former Cheetah Lite version. The CheetahXD software helps Click! network technicians manage the HFC network by providing end-to-end visibility across the HFC operations environment, and enables NOC personnel to proactively isolate network problems, trace root causes, assess potential impacts, and prioritize truck rolls by pinpointing fault and performance issues in real-time. With CheetahXD software, HFC network assurance is simplified, operational costs are reduced, and network performance is improved resulting in enhanced customer satisfaction.

Spectrum Reclamation

In 2015, Click! fully converted its system from analog to digital and freed up nineteen (19) 6 MHz channel slots. Since then, 6 of those freed up channels have been added to the bank of downstream Internet channels to meet the growth in customers and Internet usage. Therefore leaving 13 channels available for use.

Network Bandwidth

During 2016, Click! added NETFLIX cache servers to the local network. The addition of these cache servers has reduced bandwidth utilization by as much as 30%. Click! added an additional 10 Gig connection at Downtown South and Downtown North for a total of 30 Gig potential capacity at each location. The Core routers are being upgraded from the Cisco 7600 platform to the Cisco ASR 9912 platform. This will provide the necessary 10 gig ports and throughput to support current and future network growth. The Cable Modem Termination Systems (CMTS) are also being upgraded. The existing Cisco uBR 10000 series CMTSs are going to be replaced with new Cisco cBR-8 CMTSs. The first set of Cisco cBR-8 CMTSs were purchased during 2016. These will support DOCSIS 3.1 Gigabit services and provide higher port and bandwidth capacity for meeting bandwidth demands and subscriber growth.

Asset Management Program

During 2016, Click! continued to build its asset list and has developed its registries for the Router, HFC Distribution, and Headend Equipment asset classes, and is prepared to participate in the Tacoma Power's Strategic Asset Management program. Click! also developed a Network Maturity Model, to more effectively manage its asset lifecycles and plan future capital expenditures.

Safety and Work Practices

In 2016, Click! continued to make improvements to its safety management practices. Improvements included: (i) Focusing on reviewing past performance; (ii) improvements in the oversight of injured worker claims; and (iii) increased review of leading indicators such as near misses and non-medical injury reports. Additional training was provided on Home Safety and how the employees and their families can be impacted by the activities we engage in outside of our work life. Safety posters and bulletin board messages were utilized to promote safety awareness. Each business unit held monthly safety meetings and the Click! Safety Committee met quarterly to improve safety related communications.

GENERATION

Hydroelectric Projects

Tacoma Power's hydro plants were available 99.83 percent of the time in 2016 except for scheduled maintenance outages.

Cowlitz

Construction is wrapping up on the Cowlitz Falls North Shore Collector for collection of downstream migrating smolts from the upper Cowlitz River. The collector, located at Lewis County Public Utility District Cowlitz Falls Dam, will improve natural fish runs in the Cowlitz River and help Tacoma Power meet its Federal Energy Regulatory Commission (FERC) license obligations. The $35 million construction project is scheduled for final commissioning and operation in April, 2017. The 70 ton head gate for unit 51 was removed for the first time in 48 years and rehabilitated.

Cushman

Construction on both of the new Cushman fish hatcheries were completed and began operation in 2016. One Cushman unit was modified to allow for synchronous condensing operation which will allow Power Management to supply and sell capacity without consuming water. The 20-year-old exciters for all three generators at Cushman 2 were replaced. Construction of recreation improvements in the Staircase area were completed and opened to the public during 2016.

Nisqually

The 20-year-old exciters were replaced on four units at LaGrande and one governor was upgraded.

EXHIBIT 14

Tacoma Public Utilities

Mark Crisson
Director

3628 South 35th Street
P.O. Box 11007
Tacoma, WA 98411-0007

Divisions
Light
Water
Belt Line

June 30, 1998

Mr. Ray E. Corpuz, Jr.
City Manager
Tacoma, Washington

Dear Ray:

I am forwarding for distribution to the Mayor and City Council copies of a recent article from the Internet. MSNBC has written a very informative piece about Tacoma Power's Click!Network. It was written complete with slides of our work in progress. I know the City Council, as well as the Board, will be proud of this national coverage.

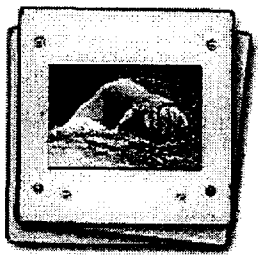
Thank you for your assistance in this matter.

Very truly yours,

Lydia Stevenson
for Mark Crisson
Director of Utilities

Attachment
cc: Public Utility Board
Staff

Terri Harris / Special to MSNBC



Click for slide show

Debra Stewart, ClickNetwork manager, with part of the new fleet of vehicles the utility has acquired.

Tacoma Power to give TCI a jolt

Municipal utility prepares to jump into cable

By David Bowermaster
MSNBC

June 28 — While AT&T officials congratulate themselves on their $48 billion purchase of Tele-Communications Inc., they might want to keep an eye on the Northwest corner of TCI's sprawling cable empire. Tacoma Power, the city-owned utility of Tacoma, Wash., will soon turn on a $100 million broadband communications network that will enable it to sell cable TV and Internet access as well as water and electricity — making it a direct competitor to TCI.

COMPLETE STORY

MSNBC COVERAGE
SPECIAL REPORT AT&T-TCI special report

IF THE PROJECT is successful, it is sure to encourage more municipal utilities to take on TCI and other cable monopolies across the country.

The effort is already getting attention from local governments weary of residents' complaints about high prices and poor service from their incumbent cable provider. Tired of waiting for new competitors to shake things up, many cities and towns are thinking about either constructing their own cable network, or encouraging their local utility to do it for them. Tacoma Power's ClickNetwork is the largest such effort to date.

Concerned cable industry officials are launching a public relations counter-offensive, citing studies that question the viability of such projects and complaining that access to public funds give government-backed systems an unfair competitive edge.

"Financially, they just don't work," says Steven Effros, president of the Cable Telecommunications Association in Washington, D.C.

TCI considered ClickNetwork enough of a threat that Leo Hindery, president of the $7.6 billion cable powerhouse and a Tacoma native, traveled to his old hometown last October to lobby against it.

The visit did not go well. Hindery's first meeting deteriorated into an ugly shouting match when Tacoma City Council members ripped TCI for what they considered its history of abysmal service. And Hindery's offer to work with Tacoma Power (then called Tacoma City Light) and upgrade TCI's cable system to meet the needs of both the city and the utility was disregarded as too little, too late.

"Leo looked us in the eye and said, 'I understand there have been broken promises. I understand there have been a lot of tears. I'm here to make things right,' " recalls city council member Bill Baarsma. "But to have that discussion on the day of the vote created really an impossible situation for us."

Operator-foreman Craig Moore, of Westland Inc., a

By a


Moore, of Westland Inc., a general contractor from Gig Harbor, Wash., uses the "hole hog" to bore a trench in northwest Tacoma prior to placing conduit for ClickNetwork. The neighborhood will be one of the first to receive the new cable service.

Teri Harris / Special to MSNBC

unanimous 9-0 margin, the City Council authorized Tacoma Power to spend $67 million to get the project under way. The utility will have to go back to the council for approval to spend the additional $22.4 million needed to finish the job. The funds will come from a cash reserve of more than $100 million that the utility has accumulated by aggressively buying and selling power on the open market.

Deb Stewart, a 20-year cable industry veteran recruited to run the show, has pushed an aggressive build-out schedule. An official launch date is not set, but Stewart says cable service will be available to selected Tacoma neighborhoods in a few weeks, and all 200,000 residents will have access to both cable and high-speed Internet access from ClickNetwork by the end of 1999.

From the outset the network will offer somewhere between 75 and 85 channels of video programming. Until recently TCI's 50,000 customers in Tacoma have received just 40 channels, but TCI spokesman Steven Kipp says the company is spending "tens of millions of dollars" on upgrades in Tacoma that are boosting capacity to around 70 channels. The upgrades have reached about 20,000 customers so far and should hit the rest by the end of the year.

TCI is also beta-testing the At Home high-speed Internet access service in Tacoma and should start rolling it out in the fall. Stewart says ClickNetwork will begin offering high-speed Web surfing capabilities at roughly the same time.

Stewart refused to disclose pricing for either service, but says they will be "extremely competitive" with TCI.

FRINGE BENEFITS

Tacoma Power did not have cable on its mind when it first considered building a fiber-optic network three years ago. Rather, the initial plan was to build an internal network that would improve communications between the company's far flung electric, water and railway operations. Deregulation of the power business was looming, and Tacoma Power knew it needed to operate more efficiently in a competitive world.

'The system is not being built as a cable system. We have got a multilayered business model.'
— **DEB STEWART**
ClickNetwork

Consultants from Stanford Research Institute brought in to review the project told Tacoma Power officials that the utility could vastly improve the economics of the planned network by extending it throughout the city and selling a mix of cable TV, high speed Internet access and telephone service.

"The system is not being built as a cable system," insists Stewart, general manager of ClickNetwork. "We have got a multilayered business model."

The distinction is an important one, intended to counter arguments that the financial returns of a cable "overbuild" — a new network infrastructure built over the same area as an existing one — can not cover the costs.

A recent study by telecommunications consulting firm The Strategis Group examined the prospects for utility-built cable networks in cities with 5,000 homes, 50,000 homes and 150,000 homes. Even if the municipal utility secured a 50 percent market share and also sold high-speed Internet access services, The Strategis Group concluded that in all cases "an overbuilder would not generate sufficient cash flow from operations of the cable system to pay back its debt."

Carol Mann, one of the study's authors, says the review did not account for potential revenues from telephone service — which ClickNetwork plans to offer eventually — or cost savings from the utility's internal operations. Stewart says those added benefits will enable Click to pay off with just a 25 percent cable market share.

"I would not recommend that any cable operator, or a municipality, do an overbuild just to get a 50 percent market share of cable customers," Stewart says.

WILL EFFORT SPREAD?

Utilities are looking at 'whatever they can provide to give them more stability in their customer base.'
— **BRIAN TOURNIER**
A.G. Edwards & Sons

Projects like ClickNetwork are also extremely important to the core business of utilities like Tacoma Power, says Brian Tournier, a municipal bond analyst with A.G. Edwards & Sons, since new communications services will help discourage customers from fleeing to new competitors.

"In almost every case the interest in telecommunications and cable is being driven by the desire to keep their electric services competitive with other electricity providers," Tournier says. Utilities are looking at "whatever they can provide to give them more stability in their customer base," he says.

So far most of the new municipal utility cable projects have been built in small, often remote towns. But if the Tacoma project does well, big cities are likely to jump into the fray as well. If that happens, conflicts with the cable industry are sure to grow in intensity.

"If you're a small municipality, it's likely you can do this and not incite the wrath of the cable industry,"

Tournier says, "but you will see very bitter fights in any large cities where a municipal systems tries to introduce cable service. The existing companies will fight them tooth and nail."

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INTERNET AT&T
INTERNET Tacoma Power
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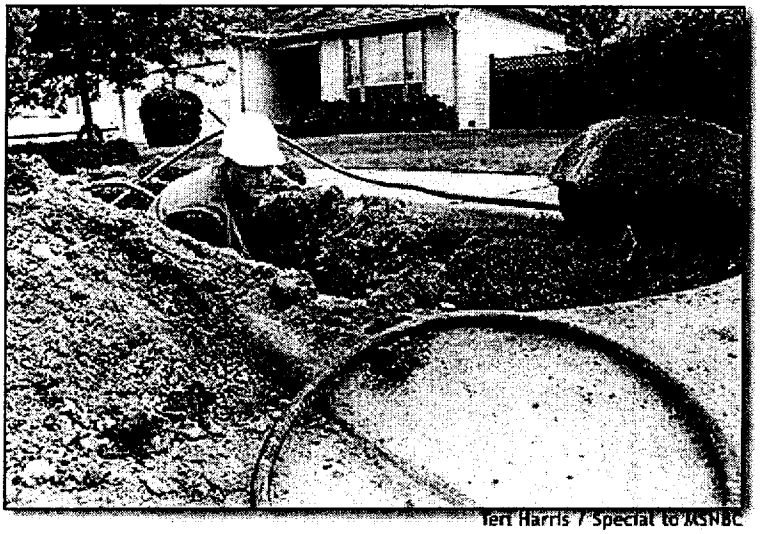
Going whole hog



Teri Harris / Special to MSNBC

Operator/foreman Craig Moore, of Westland Inc., a general contractor from Gig Harbor, Wash., uses the "hole hog" to bore a trench in northwest Tacoma prior to placing conduit for Click!Network. The neighborhood will be one of the first to receive the new cable service.

MSNBC COVERAGE

•Return to story

MSNBC HOME

Keeping in touch

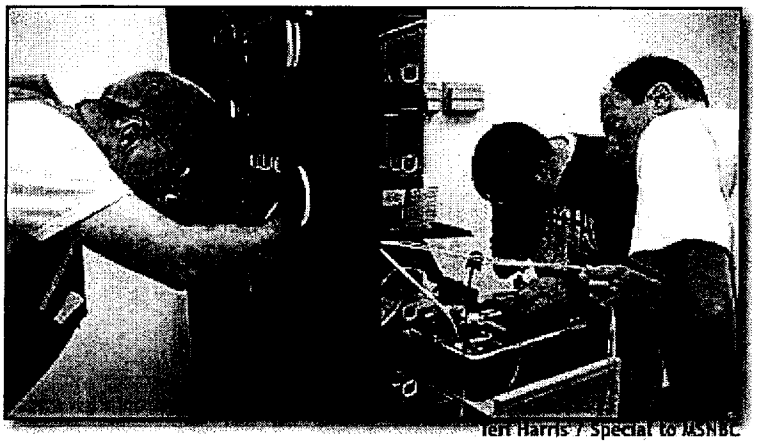
Jeri Harris / Special to MSNBC

Click!Network customer care representatives Josh Newman, left, and Jan Stacy study a Tacoma area map to verify new construction for a customer. Poor customer service from TCI in the past is one reason Click!Network got a go-ahead from city officials.

MSNBC COVERAGE

- Return to story

Data Splicing



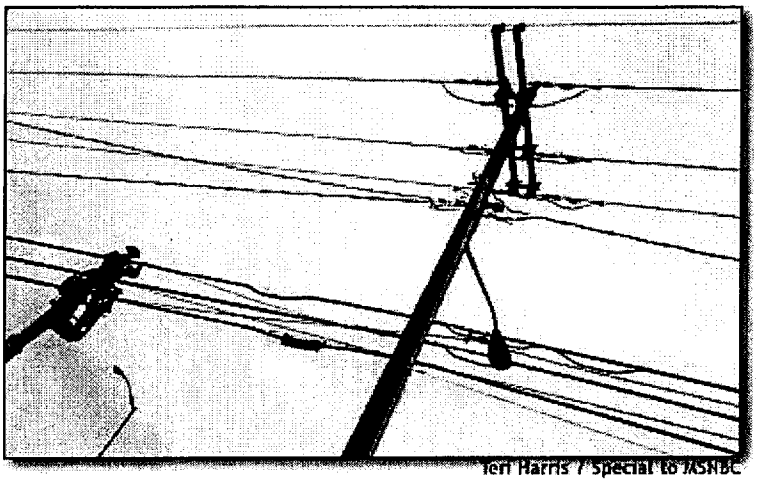
Jeff Harris / Special to MSNBC

Network technicians Craig Taylor, left, Tim Normandin and Tim Hogan splice fiber for incoming data at the Click!Network headend facility. The information will enable technicians to monitor the network's performance.

MSNBC COVERAGE

- Return to story

More Fiber



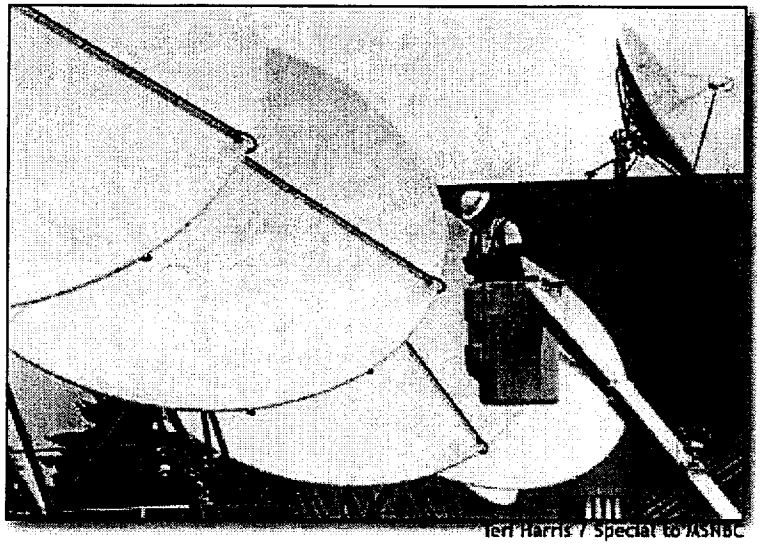
Teri Harris / Special to MSNBC

Lineman Andrew Hannah, of Florida-based subcontractor Fibre Cable Inc., pulls extra fiber for future expansions of Click!Network. Eighty percent of the installation is overhead work.

MSNBC COVERAGE

- Return to story

Doing the Dishes



Teri Harris / Special to MSNBC

Network technician Craig Taylor checks the alignment on one of the six satellite receiving dishes at Click!Network. Each of the dishes is aligned on a different satellite in geosynchronous orbit 26,000 miles above the earth.

MSNBC COVERAGE

•Return to story

EXHIBIT 15

Step 1—Service contract or lease?

As I previously stated, the first step in determining when to recognize revenue is to evaluate whether the contract between the provider and purchaser of the capacity is an arrangement for the provision of a service or a lease. Although service contracts may have attributes similar to those embodied in leases, the accounting results may be dramatically different for service transactions than for leases.

Accounting for service contracts: Under generally accepted accounting principles ("GAAP"),[3] revenues associated with long-term service contracts are generally recognized over time as performance occurs. The accounting guidance as to when to recognize revenue for service contracts is limited, but can be primarily attributed to the conceptual framework of the FASB and a paper published by the FASB on accounting for service contracts. The SEC staff communicated its views on various issues related to revenue recognition for service contracts in Staff Accounting Bulletin No. 101.[4]

Accounting for leases: FASB Statement of Financial Accounting Standards ("SFAS") No. 13, *Accounting for Leases*, and the related interpretations of this standard, provide the relevant GAAP for lease accounting, including the definition of a lease. This accounting literature defines a lease as an agreement conveying the right to use property, plant or equipment for a period of time, and specifically excludes agreements that are contracts for **services** that do not transfer the right to use property, plant or equipment.

To the extent that a network capacity contract conveys to the purchaser the right to use specific identifiable assets[5] for a period of time, providers of this capacity have concluded that such a contract meets the definition of a lease. If the network capacity contract does not convey to the purchaser the right to use specific identifiable assets, the contract would be viewed as an arrangement for the provision of services, and revenue would be recognized over the period of the contract as the services (the access to the network capacity) are provided.

Step 2—It is a lease, but what kind of lease?

For capacity contracts that meet the definition of a lease, the next significant accounting consideration is the determination of the appropriate lease classification. In a network capacity contract or arrangement that meets the definition of a lease, the capacity provider is the lessor, and the

EXHIBIT 16

CITY OF TACOMA
CITY COUNCIL MEETING
REMOTE BROADCAST CAPTIONING
TUESDAY, MARCH 26, 2019

Services provided by:
QuickCaption, Inc.
4927 Arlington Avenue
Riverside, CA 92504
Telephone - 951-779-0787
Fax Number - 951-779-0980
quickcaption@gmail.com
www.quickcaption.com

* * * * *

* * * * *

we hear from.

I want to make sure you understand that.

I want to thank Council Member Hunter for giving an example.

I want to give another example.

And that is Cheney stadium and our private partnership with the Tacoma Rainiers.

That stadium has been around longer than Click!

1960 we had a team in Tacoma.

Several years ago we entered into a public private tip with Cheney stadium because we couldn't afford to maintain it.

Now we have a public/private partnership with them and they have a lease on stadium to 2041 which is well over 20 years.

Great partnership.

We still own it.

It's still our asset.

We have say over it but they operate it which is same thing we're talking about with Rainier Connect.

Having worked on this issue and I understand that this is a passionate thing, but I have to be honest, this council has turned over every stone.

We have looked at this thing backwards, forwards, upside down and tried to find every way we could. I didn't want to

talk about all-in.

I wanted to keep the ISPs whole and do Click!, and we couldn't make that work.

We looked at all-in and couldn't make that work.

We're here tonight and we're going to make a tough decision.

Every decision doesn't make everyone happy but we have to make sure that will we're doing what citizens called us to do and that's their business.

And to take care of the assets that we own in the best way that we can.

I will sleep tonight difficultly because I hate that when we can't get to the decision that makes everyone happy that we can't make everyone happy but that happens in some of the decisions we have to make.

I was looking out at the people who were wearing the "stick with Click!" T-shirts.

And I would have one right now because I believe what we're doing tonight is sticking with Click!

We want to keep the asset in this community and not have to lose it in its entirety.

Much like Cheney stadium and the success we've had there.

We're finding a partner.

In this day and age of collaboration and partners, this

is how work gets done.

But I will promise you this, we will hold them accountable.

I will make sure that whatever comes back to this council is something that I can live with knowing that all of the concerns that you've raised can be addressed by our partners.

And so, and I am sure that this entire council, I can probably speak on behalf of them that they're going to do the same thing.

What we're voting for is to start the conversation.

It's not the end of the conversation.

The confers tonight does not include everything that we'll ask from them or demand from them on behalf of the citizens.

We've made too much of an investment to let go now.

We have to find a better model so that we can continue with Click! and our community and not shut it down because we can't continue to operate in the model that we have.

With that, seeing no further council comments, all those in favor of adopting 40272, signify by saying "aye."

Any opposed?

Roll call is not necessary.

The resolution is declared adopted.

[gavel]

EXHIBIT 17

JOINT BOARD COUNCIL STUDY SESSION

MAY 14 2019

STATUS OF CLICK! NEGOTIATIONS

INTRODUCTION:

2. PURPOSE:

The purpose of the study session presentation is TWO-FOLD:

- Status of Transaction/Negotiations. To update the Board and Council regarding the status of the negotiations with Rainier Connect, and
- Summary of Concepts. To provide a high-level summary of certain contract concepts being discussed with RC for inclusion in the Contracts.

NEXT SLIDE

3. THREE CATEGORIES OF CONTRACT CONCEPTS.

The contract concepts FALL INT 3 categories (Compliance/Protection):

- Conditions Precedent. Major pre-conditions to transfer of operational control to Rainier Connect
- Self-Reports. Reports and monitoring
- Remedies. Remedies to ensure contract compliance

NEXT SLIDE

4. BACKGROUND

- Resolutions. The Board on March 18th and the City Council on March 26th authorized execution of a Letter of Intent to negotiate in good faith with Rainier Connect formal contracts related to the operation and use of the Click! Network.
- Letter of Intent. Letter of Intent was executed on April 2, 2019. The letter of intent includes as an exhibit a term sheet setting forth how the 12 policy goals would be implemented in the final contracts.

NEXT SLIDE

5. BACKGROUND.

Since signing the Letter of Intent on April 2, 2019,

- Meetings. Parties held numerous planning meetings

- First meetings on the 17th and 18th of April to map out the work to be done.

- On-going meetings between technical staff of Click! and Rainier Connect to discuss technical and transition issues

- On-going internal meetings of city's negotiating team which consists of outside counsel Gail Karish, Joanne Hovis with CTC, Deputy City Attorney Martha Lantz, Chief Deputy City Attorney Tom Morrill, Jeff Lueders with MCO, Tenzin Gylatzen with TPU and myself.

- Shared the contract concepts we will discuss today with Rainier Connect

- Progress on Transition. Substantial progress made on developing more definitive plans and a timeline for Rainier Connect to assume responsibility for the operation and use of the Click! Network

- Final Contracts. We are also working on the final contracts

  - Two primary agreements.

    1. A Transition Agreement (Asset Purchase Agreement). This is a short-term agreement that will establish, among other things, a schedule of equipment to be transferred to RC as well as assumed liabilities, the transition plan, the services to be provided by Click! to RC during the transition, and a form of communication to Click! employees. This agreement will carry the parties through to the transfer date.

    2. Indefeasible Right of Use Agreement (IRU). This will be the long-term agreement that will become effective upon the date of transfer which is when RC will take over all operation of the network, begin provide services directly to customers and begin billing for those services.

    This agreement will grant RC exclusive access to use the Click! network to deliver voice, video and internet services. While it could be compared to a lease, it is not a lease agreement.

    The IRU will include exhibits that implement a number of the policy goals including, net neutrality principles, equitable access requirements, network upgrade requirements and customer privacy requirements.

NEXT SLIDE

6. Major Pre-Conditions to Transfer of Operational Control

- Financial Assurances,
  - e.g., at closing providing assurance that capital resources are available for the commitments in the IRU; in the event of a transfer establishing new entity has financial resources for commitments; annual letter of financial strength during first five years and less frequently thereafter.
- Funding Assurances/Commitments
  - Focused primarily upon assurances that capital funds are available for the upgrade requirements and payments to TPU,
- Performance Security
  - A form of financial/funding assurance such as a letter or line credit, cash deposit performance bond, or cash deposit
  - e.g. draw on security in the event that RC does not fulfill certain obligations may subject to this requirement such as the capital improvements or payment of liquidated damages.
- Parental Guarantee
  - In the event that a separate LLC or affiliate of the parent company is the transacting party, the parental guarantee would obligate the parent company to fulfill all of the commitments of its affiliate.
- Insurance
  - e.g. certificate of insurance

NEXT SLIDE

7. Major Pre-Conditions to Transfer of Operational Control (cont'd)

- Legal Compliance Assurances
  - e.g. RC must provide assurance that it meets all legal requirements as a service provider
- Franchises in place
  - e.g. RC must have in place appropriate franchise agreements for the jurisdictions in which it will operate:

    Pierce County
    University Place
    Lakewood
    Fircrest
    Fife, and
    Tacoma
- Transparency/website postings (mainly related to 12 policy goals)
  - e.g. RC must have in place and advertise the end-user obligations under the agreement such as,

    Net Neutrality
    Customer Privacy
    Federal Lifeline subsidy program for qualified low-income users
    Reduced cost service to households eligible for Tacoma Power's electric service low-income program, and
    Program for wholesale service to providers

- Corporate Approvals
  - e.g. approval of the transaction by the governing entity
- Disclosure of Ownership Interests
  - e.g. Disclosure of the principle owners

NEXT SLIDE

15. PROPOSED PUBLIC MEETINGS

June 18th	Presentation to Board and Council at Joint Study Session of proposed material terms and transition framework
June 25th	Council resolution and final draft contracts on Council agenda for public comment only
June 26th	Board resolution and final draft contracts on Board agenda for public comment only
July 10th	Board to consider approval of final contracts
July 16th	If Board votes to approve on July 10th, Council to consider concurrence with Board's approval

NEXT SLIDE

QUESTIONS

EXHIBIT 18

LETTER OF AGREEMENT
Between
City of Tacoma
and
International Brotherhood of Electrical Workers, Local 483
And
AFSCME Local Number 120
Subject: Click! Retention Incentive
Date: _____

This Letter of Agreement (LOA) is by and between the City of Tacoma (City and/or Employer), and the IBEW Local 483 and AFSCME Local 120, herein referred to as "the Parties".

The LOA describes the Parties' agreement regarding the parameters of a retention incentive program for employees whose employment is considered essential for the continued operations of Click!.

Background

The City is exploring new avenues and how to continue providing service to Click! customers, including the potential of contracting out many functions of current Click! operating staff. As Click! continues to provide service until decisions are reached, the parties recognize that certain employees and/or positions are considered "essential" to continue operations. As recognition of this, the Parties have agreed to the following as compensation for a retention incentive for specifically identified employees.

Agreement

1. Essential Employees Defined: The Parties agree to incentivize the retention of employees that are deemed essential by management, at its sole discretion, to the continued operation of Click! These essential employees are listed on "Exhibit A" to this LOA. Only employees identified as "essential" may qualify for the retention incentive under the terms of this LOA.

2. Timeline for Payment: Upon completion of their time as deemed "essential" by the Director of Tacoma Public Utilities, *or* until Click! ceases operations as a City-owned entity, *or* until the City Council and Public Utilities Board adopt a resolution to end the pursuit of a public-private partnership agreement, whichever is first, "essential" employees shall receive a one-time lump sum payment of fifteen thousand dollars ($15,000) in compensation for their successful contribution to the transition of Click! operations. The parties recognize that the successful completion of an employee's time as deemed "essential" may differ between employees based upon the business needs of the Click! organization. Accepting this incentive shall not prohibit employment at the City in another capacity after

the time period is served. The Employee shall also be eligible for benefits under the terms of “Click! Employee Severance LOA” upon completion of this period if the employee does not achieve employment in another position within the City. There does not have to be a break in City employment for an employee to qualify for this incentive.

3. Floating Holidays: Throughout the time period an employee is deemed “essential” under the provisions of paragraph #2 of this LOU, such employees shall receive one (1) Floating Holiday (eight hours) every two months during the time they are employed with Click!. The first Floating Holiday will be awarded April 1, 2019, with subsequent days awarded every two months thereafter (eg: June 1, 2019, August 1, 2019, etc.) These Floating Holidays will be subject to customary usage and cash out restrictions, consistent with TMC 1.12.200(2).

4. Processed Through Payroll: This one time lump sum will be processed through the City’s payroll system and is subject to taxes as required by state and federal law. Consistent with the TMC, lump sum payments are not considered in TERS contributions or benefit calculations.

5. Ineligible for Retirement Incentive: Click! employees listed as “essential” under the terms of this LOA are not eligible for participation in any retirement incentive program the time period when an employee is deemed “essential.”

This Letter of Agreement shall not establish precedent for the parties hereto, nor for any other collective bargaining units or departments of the City.

FOR THE CITY:

_____

Elizabeth Pauli Date
City Manager

_____

Jackie Flowers Date
Director of Utilities/CEO

_____

Dylan Carlson Date
Senior Labor Relations Manager

FOR THE UNION:

_____

Alice Phillips Date
Business Manager, IBEW Local 483

_____

Miguel Morga Date
Staff Representative, Local 120

EXHIBIT 19

LETTER OF AGREEMENT
Between
City of Tacoma
and
International Brotherhood of Electrical Workers, Local 483
And
AFSCME Local Number 120
Subject: Click! Employee Severance
Date: _____

This Letter of Agreement (LOA) is by and between the City of Tacoma (City and/or Employer), and the IBEW Local 483 and AFSCME Local 120, herein referred to as "the parties".

The LOA describes the Parties' agreement regarding the parameters of severance payments for employees who lose their employment with the City through the layoff process.

Severance Pay

- Employees laid off from Click! Network as a result of downsizing, shall be entitled to a lump sum severance payment equal to eighty (80) hours of the Employee's current base salary (including applied rate and longevity) for each full year of the Employee's employment in the Click! business unit up to a maximum of four hundred and eighty (480) hours.

- In addition, any employee laid off through this process will receive the equivalent of four (4) months medical insurance premiums COBRA coverage including vision and dental) in a lump sum payment.

- These payments shall be subject to normal and customary taxes.

- The City shall consider an employee's request for voluntary layoff in lieu of an employee with lower seniority, regardless of classification.

The Parties agree that the entitlement to the severance is based on the following conditions:

1. The Employee is laid off by the Employer;
2. The Employee does not accept another position at the City of Tacoma prior to layoff; and
3. The Employee executes a release of any claims against Employer in connection with the end of the Employee's employment.

This Letter of Agreement shall not establish precedent for the parties hereto, nor for any other collective bargaining units or departments of the City.

FOR THE CITY:

_____

Elizabeth Pauli Date
City Manager

_____

Jackie Flowers Date
Director of Utilities/CEO

_____

Dylan Carlson Date
Senior Labor Relations Manager

_____

Andy Cherullo Date
Finance Director

FOR THE UNION:

_____

Alice Phillips Date
Business Manager, IBEW Local 483

_____

Miguel Morga Date
Staff Representative, Local 120

Approved as to form:

_____

Paul Goulding, Date
Deputy City Attorney

EXHIBIT 20

AMENDED RESOLUTION NO. U-10828

A RESOLUTION relating to Click! Network; authorizing Click! to prepare a business plan to provide, in addition to retail cable television, retail internet services including voice over data internet ("VoIP") protocol, commercial broadband and Gigabit service ("Retail Services").

WHEREAS the City Council of Tacoma authorized the Department of Public Utilities ("TPU"), Light Division (dba "Tacoma Power"), to implement and manage a broadband telecommunication system ("Click! Network" or "Click!" as authorized through City Council Substitute Resolution No. 33668, approved April 8, 1997, and Public Utility Board Amended Substitute Resolution U-9258 approved April 9, 1997), and

WHEREAS Tacoma Power provided retail cable TV services to customers, wholesale internet to independent Internet Service Providers ("ISPs") who served retail customers and wholesale broadband service to business customers, and

WHEREAS the broadband telecommunication system is critical infrastructure for Tacoma Power, including the connection of substations, support of approximately 18,000 Gateway smart meters, as well as providing support for the City's I-net system, and

WHEREAS the City Charter Section 4.6 requires a vote of the people before the City may sell, lease, or dispose of any utility system, or parts thereof essential to continued effective utility service, and

WHEREAS the presence of Click! Cable TV in the marketplace provided savings for all cable TV customers, regardless of provider, in the Click! Market

territory as compared to other Puget Sound market areas to an estimated average savings of $10 million dollars a year, between 2004 and 2008, and

WHEREAS Click! services currently reaches 26.2% of the customers in the service territory with one or more of its services (Cable TV only, Internet only or Cable TV and Internet) according to Click! customer counts, and

WHEREAS 61% of those polled in May of 2015 said that it would be a good idea for Click! to provide internet service directly to customers, and

WHEREAS Click! infrastructure could provide Gigabit internet speeds to customers in the entire service territory with capital investment, and

WHEREAS customers' use of internet is increasing and use of Cable TV is decreasing, just as the cost for Cable TV is increasing significantly for the Click! network, and

WHEREAS Click!'s current business model creates future potential financial losses that may require the use of Tacoma Power ratepayer funds, and

WHEREAS the Public Utility Board has determined that the most reasonable path to meeting community objectives and financial sustainability is to pursue a business model where Click! offers additional retail products directly to its customers, including retail cable TV, Internet, voice over Internet (VoIP), and commercial broadband services ("All-In Retail model"); Now, therefore,

BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

Sec. 1. Definitions.

a. "Click! or Click! Network" shall mean the telecommunication section of the Light Division of the Department of Public Utilities for the City of Tacoma, as established and described in Public Utility Board Amended Substitute Board Resolution U-9258 and City Council Substitute Resolution No. 33668.

b. "Tacoma Power" shall mean the Light Division (doing business as Tacoma Power), of the Department of Public Utilities, for the City of Tacoma, as established by the City of Tacoma Charter Section 4.10.

c. "Tacoma Public Utilities" shall mean the Department of Public Utilities (doing business as TPU), for the City of Tacoma, as established by the City of Tacoma Charter Article 4.

d. "Retail Services" shall mean cable television and retail internet services including voice over data internet protocol, retail and commercial broadband, Gigabit service and related and enhanced services offered to customers from time to time as new technologies and services become available.

e. "Expenditures" shall mean capital (including debt service) and operations and maintenance ("O&M") expenses determined on a "cash flow" basis incurred by Click! after January 1, 2016. "Expenditures" shall not include, and Click! shall not be charged Click! past physical plant and capital related costs made by Tacoma Power on behalf of Click! prior to January 1, 2016.

Sec. 2. Click! shall work with consultants as appropriate to develop a detailed business, financial and marketing plan (the "Business Plan") to provide customers the Retail Services and other aspects of the Business Plan contemplated herein. The goal will be for Click! to present to the Public Utility Board and the City Council an initial detailed Business Plan on or near April 7th, 2016. The goal will be for the Public Utility Board and City Council to approve the initial detailed Business Plan within 60 days thereafter.

a. The Business Plan shall include annual, biennial and longer term goals, benchmarks and measures of financial progress and success, including
    i. building customer counts and increasing market penetration
    ii. financial projection and benchmarks
    iii. designing and implementing rates that support customers count goals while providing revenue to pay Expenditures

iv. achievement of revenues that exceed Expenditures to the extent reasonably feasible
v. capital expenditure planning, including debt financing where appropriate
vi. charging just and proper proportions of the cost and expenses of other departments or offices of the City rendering service to Click!, as required under City Charter section 4.5.

b. The Business Plan shall also include annual, biennial and longer term goals, benchmarks and measures of progress and success for non-financial achievement, including
   i. coordination with goals and strategic plans of TPU and the City of Tacoma
   ii. promotion of market competition
   iii. fostering and enhancing educational opportunity and economic activity in Tacoma and Pierce County
   iv. ensuring just access to internet service regardless of economic condition, social barriers and physical challenges.

c. The Business Plan will make adapting to changing market conditions and increased competition a priority, including necessary capital investments to improve technologies and stay competitive.

d. The Business Plan will authorized, but not obligate, Click! to enter into negotiations for new contracts with internet services providers using its network on terms and conditions economically acceptable to Click! and consistent with the Business Plan, including authority to purchase the businesses of the existing private internet service providers using its network. Click! will be authorized to utilize the services of third-party business valuation consultants, acceptable to all parties, in connection with such negotiations.

e. The Business Plan will include analysis and action plans for the structure of the Click! workforce, including the negotiation with the relevant labor organizations when necessary, to meet the requirements of the Business Plan.

f. The Business Plan shall require a separate enterprise fund (subaccount) within the Tacoma Power fund to account for Click! revenues and Expenditures.

g. Subject to the outcome of the legal analysis authorized under Sec. 4, from January 1, 2016, going forward if Expenditures made on behalf of

Click! by Tacoma Power exceed Click! revenues during any month, such "Excess Expenditures" shall constitute a loan or advance from Tacoma Power to Click!, which shall be reimbursed as follows:

i. "Target Date" means December 31, 2021 or a date when the cumulative Excess Expenditures reach $31.6 million, whichever occurs first.

ii. Click! shall reimburse the loans or advances from revenue exceeding Expenditures as soon as possible.

iii. If Click! revenue in excess of Expenditures is insufficient to reimburse loans or advances in full by the Target Date, Click! revenue shall be supplemented with City of Tacoma non-utility revenue that, together with Click! revenue, will be sufficient to provide full reimbursement of cumulative loans or advances accrued prior to the Target Date within ten (10) years of the Target Date.

iv. The Utility Board and the City Council may, at any time, fulfill their obligation to reimburse the cumulative loans or advances by applying the proceeds from a transaction (license, lease, sale, etc.) transferring some or all of the City's telecommunications system business to a private third-party. The Business Plan shall require Public Utility Board and City Council approval of budgets, expenditures, rates, and charges necessary to implement the business plan contemplated herein as part of the regular Tacoma Power budgeting, contract, and rates approval processes.

h. The Business Plan shall require Public Utility Board and City Council approval of budgets, expenditures, rates, and charges necessary to implement the business plan contemplated herein as part of the regular Tacoma Power budgeting, contract, and rates approval processes.

i. The Business Plan shall provide quarterly and annual reports to the Public Utility Board and to the City Council to monitor Click!'s actual performance relative to the approved business plan. Such reports shall include financial gains and losses and the balance of the loan account described below.

Sec. 3. The Public Utility Board and the City Council shall, upon adoption of this Resolution, appoint a Click! Engagement Committee to provide oversight and assistance to Click! in the development and implementation of the Business Plan. The Click! Engagement Committee shall be comprised of two (2) Public Utility Board Members, two (2) City Council members, two (2) members of the public who have experience in the broadband industry, and one (1) Tacoma Power ratepayer at large appointed by the City Council. The Click! Engagement Committee shall meet to consult with Click! on a regularly

scheduled basis established by the Committee and Click!. The Public Utility Board and the City Council may consider delegating specific authority in the governance of Click! to the Click! Engagement Committee in the future as the Business Plan is further developed and implemented.

Sec. 4. Prior to implementing the Business Plan contemplated in this resolution, TPU and the City's Legal Department, shall seek a legal opinion or declaratory judgment in Pierce County Superior Court, to confirm that Tacoma Power may operate the City of Tacoma's telecommunications system in accordance with the business plan. The City's Legal Department shall include in its request for a legal opinion or declaratory judgment, those specific components of the business plan necessary to provide the Utility Board and the City Council comfort that they may fully implement the business plan reasonably without threat of disruption by legal challenge. TPU and the City's Legal Department are authorized to utilize the services of third-party legal advisors in connection with this activity.

Sec. 5. Click! shall review and resubmit rate adjustments budgeted and proposed by Click! and approved by the Public Utility Board (previously approved by Board Resolution U-10773 on April 22, 2015), that support the Business Plan and the City Council is requested to approve an ordinance amending Tacoma Municipal Code Chapter 12.13, to authorize said rate adjustments.

Sec. 6. A fiscal note is attached to and incorporated in this Resolution U-10828. The fiscal note estimates the Capital and O&M budget requirements and impacts in addition to the financial gains and losses anticipated over the next five (5) years, in connection with the Click! business plan contemplated herein.

Approved as to form and legality:

William C. Fosbre
Chief Deputy City Attorney

Chair

Monique Trudnowski
Secretary

Chaveen Jacobs
Clerk

Adopted 12-3-15

TACOMA PUBLIC UTILITIES
3628 South 35th Street
Tacoma, Washington 98409-3192

To: Chair and Members of the Public Utility Board

From: William A. Gaines, Director of Utilities/CEO

Date: November 25, 2015

Subject: Financial Impact of Authorizing Click! to Provide Retail Internet Service Including Gigabit Internet Service, Voice over Internet Protocol Service and Commercial Broadband Service, and Approving a Five Year Business Plan

Background:

A variety of business models have been developed and presented to policymakers, including a base case or status quo model and prospective models for Click! offering retail internet and cable television services, Click! offering wholesale-only internet (no video) and Click! entering into a private use contract involving Tacoma Power/Click! facilities. The financial models considered both low and high growth assumptions. This report addresses the fiscal impact of authorizing Click! to provide retail Internet service including Gigabit Internet service, Voice over Internet Protocol Service and Commercial Broadband Service ("All-In Retail with Gigabit model") along with cable television services. The All-In Retail with Gigabit model anticipates a loss of 1,916 Cable customers under the low growth option and a gain of 1,152 Cable customers under the high growth option in five years. It also anticipates a gain of between 6,412 and 12,124 Internet customers, and a gain of between 5,168 and 7,563 Voice over Internet Protocol customers, low and high respectively. Table 1 below shows the financial metrics of the All-In Retail with Gigabit option.

Table 1

	All-In Retail w/Gigabit Low Option	All-In Retail w/Gigabit High Option
Revenue	$181.4	$207.1
O&M Expenditures	$185.3	$206.3
Capital Investment	$27.7	$28.8
Cumulative Cash Flow	($31.6)	($28.0)

Fiscal Impact:

The impact of pursing the All-In Retail with Gigabit option is that the City will incur deficit spending in the range of $28 million to $31.6 million over the five-year business plan period, as shown in Table 1. However, as noted in Table 2 below, the Retail All-In with Gigabit model begins to produce positive cash flow in Year 8 under the high growth option.

Table 2

	LOW OPTION		HIGH OPTION	
	Cash Flow	Cumulative Cash Flow	Cash Flow	Cumulative Cash Flow
2016	($13,375,861)	($13,375,861)	($14,141,034)	($14,141,034)
2017	(4,894,538)	(18,270,399)	(4,728,564)	(18,869,598)
2018	(5,064,295)	(23,334,693)	(4,541,133)	(23,410,731)
2019	(4,430,859)	(27,765,552)	(2,866,053)	(26,276,783)
2020	(3,829,670)	(31,595,222)	(1,750,548)	(28,027,331)
2021	(3,482,159)	(35,077,381)	(945,919)	(28,973,250)
2022	(3,832,725)	(38,910,106)	(608,528)	(29,581,779)
2023	(3,114,794)	(42,024,900)	480,572	(29,101,207)
2024	(2,877,105)	(44,902,005)	1,146,032	(27,955,175)

TACOMA POWER

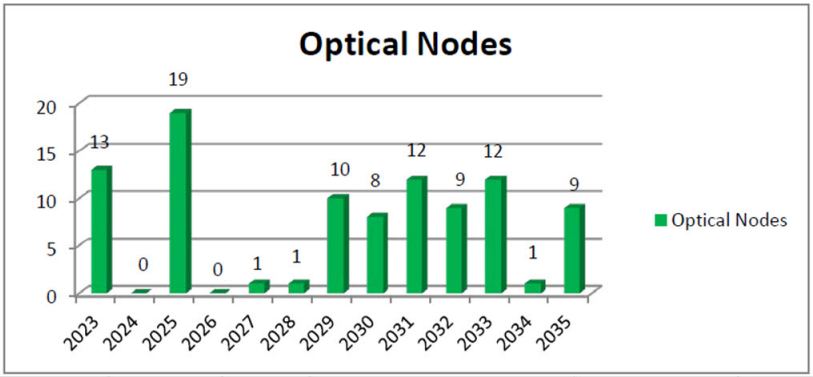
TACOMA WATER

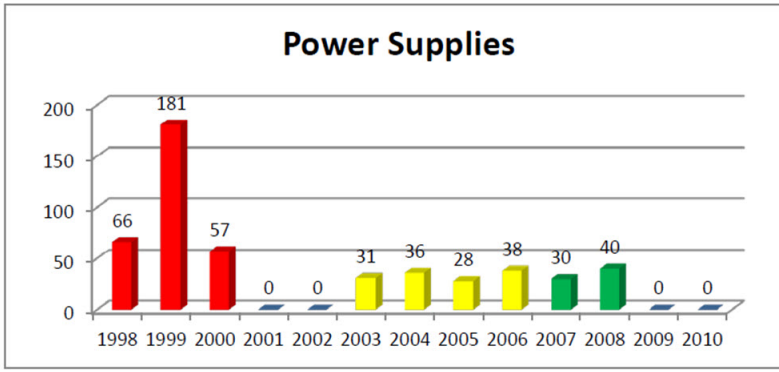
TACOMA RAIL

EXHIBIT 21

NE06	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2025	1/4/2000	Cisco GS-7000	$5,500.00
NE07	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2023	11/2/1999	Cisco GS-7000	$5,500.00
NE08	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2023	10/22/1999	Cisco GS-7000	$5,500.00
NE09	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2025	3/17/2000	Cisco GS-7000	$5,500.00
NE10	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2025	6/16/2000	Cisco GS-7000	$5,500.00
NE11	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2025	6/16/2000	Cisco GS-7000	$5,500.00
NEC13	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	11/01/06	Cisco GS-7000	$5,500.00
NEC14	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	09/28/06	Cisco GS-7000	$5,500.00
FF15	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	06/07/06	Cisco GS-7000	$5,500.00
FF16	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	07/20/06	Cisco GS-7000	$5,500.00
FF17	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	05/11/06	Cisco GS-7000	$5,500.00
FF18	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	05/12/06	Cisco GS-7000	$5,500.00
FF19	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	08/02/06	Cisco GS-7000	$5,500.00
FF20	Motorola			Optical Node	NE HUB	SG2000	$2,200	25 Yrs	2031	08/16/06	Cisco GS-7000	$5,500.00
							$41,800					
		41/0										
SW01	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	04/05/00	Cisco GS-7000	$5,500.00
SW02	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	03/23/00	Cisco GS-7000	$5,500.00
SW03	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	12/06/04	Cisco GS-7000	$5,500.00
SW04	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	04/12/00	Cisco GS-7000	$5,500.00
SW05	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	05/23/00	Cisco GS-7000	$5,500.00
SW06	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	05/18/00	Cisco GS-7000	$5,500.00
SW07	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	05/08/00	Cisco GS-7000	$5,500.00
SW08	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	06/09/00	Cisco GS-7000	$5,500.00
SW09	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	05/24/00	Cisco GS-7000	$5,500.00
SW10	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	06/20/00	Cisco GS-7000	$5,500.00
SW11	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	02/28/00	Cisco GS-7000	$5,500.00
SW12	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2025	02/28/00	Cisco GS-7000	$5,500.00
UP13	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	05/05/03	Cisco GS-7000	$5,500.00
UP14	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	05/29/03	Cisco GS-7000	$5,500.00
UP15	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	09/01/04	Cisco GS-7000	$5,500.00
UP16	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	09/17/03	Cisco GS-7000	$5,500.00
UP17	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	08/14/03	Cisco GS-7000	$5,500.00
UP18	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	07/18/03	Cisco GS-7000	$5,500.00
UP19	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	11/05/03	Cisco GS-7000	$5,500.00
UP20	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	02/19/04	Cisco GS-7000	$5,500.00
UP21	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	03/12/04	Cisco GS-7000	$5,500.00
UP22	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	04/16/04	Cisco GS-7000	$5,500.00
UP23	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	05/20/04	Cisco GS-7000	$5,500.00
UP24	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	12/09/03	Cisco GS-7000	$5,500.00
UP25	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2028	12/01/03	Cisco GS-7000	$5,500.00
UP26	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	05/11/04	Cisco GS-7000	$5,500.00
FC27	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	06/29/04	Cisco GS-7000	$5,500.00
FC28	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	08/13/04	Cisco GS-7000	$5,500.00
FC29	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2029	09/20/04	Cisco GS-7000	$5,500.00
LK30	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2031	02/08/06	Cisco GS-7000	$5,500.00
LK31	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2031	01/11/06	Cisco GS-7000	$5,500.00
LK32	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	12/12/05	Cisco GS-7000	$5,500.00
LK33	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	01/10/05	Cisco GS-7000	$5,500.00
LK34	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	09/20/05	Cisco GS-7000	$5,500.00
LK35	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	08/17/05	Cisco GS-7000	$5,500.00
LK36	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	11/07/05	Cisco GS-7000	$5,500.00
LK37	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	08/17/05	Cisco GS-7000	$5,500.00
LK38	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	05/23/05	Cisco GS-7000	$5,500.00
LK39	Motorola			Optical Node	SW HUB	SG2000	$4,200	25 Yrs	2030	12/13/05	Cisco GS-7000	$5,500.00
							$163,800					
		46/0										
SE01	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	03/05/99	Cisco GS-7000	$5,500.00
SE02	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	02/09/99	Cisco GS-7000	$5,500.00
SE03	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	03/04/99	Cisco GS-7000	$5,500.00
SE04	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	05/12/99	Cisco GS-7000	$5,500.00
SE05	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	04/14/99	Cisco GS-7000	$5,500.00
SE06	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	06/28/99	Cisco GS-7000	$5,500.00
SE07	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	03/22/99	Cisco GS-7000	$5,500.00
SE08	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	04/03/99	Cisco GS-7000	$5,500.00
SE09	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	11/05/99	Cisco GS-7000	$5,500.00
SE10	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	06/04/99	Cisco GS-7000	$5,500.00
SE11	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	04/03/99	Cisco GS-7000	$5,500.00
SE12	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	08/30/99	Cisco GS-7000	$5,500.00
SE13	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	08/04/99	Cisco GS-7000	$5,500.00
SE14	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	04/23/99	Cisco GS-7000	$5,500.00
SE15	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	02/19/99	Cisco GS-7000	$5,500.00
SE16	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2024	07/09/99	Cisco GS-7000	$5,500.00
SE17	Motorola			Optical Node	SE HUB	SG2000	$4,200	25 Yrs	2023	12/11/98	Cisco GS-7000	$5,500.00

SW HUB								
Line Extender		37		Line Extender	SW01	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		28		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		22		Line Extender	SW02	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		16		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		11		Line Extender	SW03	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		12		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		21		Line Extender	SW04	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		16		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		18		Line Extender	SW05	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		20		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		20		Line Extender	SW06	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		34		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		25		Line Extender	SW07	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		29		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		27		Line Extender	SW08	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		22		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		15		Line Extender	SW09	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		31		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		26		Line Extender	SW10	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		28		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		15		Line Extender	SW11	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		23		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		3		Line Extender	SW41	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger		3		Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		1		Line Extender	SW42	BLE-750 MHz	$2,800	25 yrs	2025
Mini Bridger				Mini Bridger		MB-750 MHz	$3,100	25 yrs	2025
Line Extender		241							
Mini Bridger		262							
Line Extender		14			SWF27	BLE-750 MHz	$2,800	25 yrs	2029
Mini Bridger		20				MB-750 MHz	$3,100	25 yrs	2029
Line Extender		22			SWF28	BLE-750 MHz	$2,800	25 yrs	2029
Mini Bridger		26				MB-750 MHz	$3,100	25 yrs	2029
Line Extender		15			SWF29	BLE-750 MHz	$2,800	25 yrs	2029
Mini Bridger		21				MB-750 MHz	$3,100	25 yrs	2029
Line Extender		27			SWL30	BLE - 870 MHz	$2,800	25 yrs	2031
Mini Bridger		19				MB - 870 MHz	$3,100	25 yrs	2031
Line Extender		12			SWL31	BLE - 870 MHz	$2,800	25 yrs	2031
Mini Bridger		19				MB - 870 MHz	$3,100	25 yrs	2031
Line Extender		22			SWL32	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		28				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		23			SWL33	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		18				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		23			SWL34	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		12				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		23			SWL35	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		18				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		12			SWL36	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		12				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		16			SWL37	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		19				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		14			SWL38	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		16				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		0			SWL39	BLE - 870 MHz	$2,800	25 yrs	2030
Mini Bridger		7				MB - 870 MHz	$3,100	25 yrs	2030
Line Extender		25			SWU13	BLE - 750 MHz	$2,800	25 yrs	2028
Mini Bridger		25				MB - 750 MHz	$3,100	25 yrs	2028
Line Extender		19			SWU14	BLE - 750 MHz	$2,800	25 yrs	2028
Mini Bridger		29				MB - 750 MHz	$3,100	25 yrs	2028





Network ID	Vendor	Service/Spare	Status	System Function	Physical Location	Model No:	Installation Cost	Life Expectancy of Equipment	Proj Replacement Date	In Servi
Nodes										
		46/0								
NW01	Motorola	36/0	In Service	Optical Node	NW Hub	SG4000	$4,200	25 Yrs	2035	
NW02	Motorola	10/0	In Service	Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW03	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2037	
NW04	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2037	
NW05	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2037	
NW06	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW07	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW08	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW09	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW10	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW11	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW12	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW13	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW14	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW15	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW16	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW17	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW18	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW19	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW20	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW21	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW22	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW23	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW24	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW25	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW26	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2023	
NW27	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW28	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW29	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW30	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	
NW31	Motorola			Optical Node	NW HUB	SG4000	$4,200	25 Yrs	2035	
NW32	Motorola			Optical Node	NW HUB	SG2000	$2,200	25 Yrs	2024	

EXHIBIT 22

COMMUNITY-BASED BROADBAND SOLUTIONS

THE BENEFITS OF COMPETITION AND CHOICE FOR COMMUNITY DEVELOPMENT AND HIGHSPEED INTERNET ACCESS

The Executive Office of the President

January 2015

Contents

Executive Summary

Affordable, reliable access to high speed broadband is critical to U.S. economic growth and competitiveness. Upgrading to higher-speed broadband lets consumers use the Internet in new ways, increases the productivity of American individuals and businesses, and drives innovation throughout the digital ecosystem. As this report describes, while the private sector has made investments to dramatically expand broadband access in the U.S., challenges still remain. Many markets remain unserved or underserved. Others do not benefit from the kind of competition that drives down costs and improves quality. To help fill the void, hundreds of towns and cities around the country have developed their own locally-owned networks. This report describes the benefits of higher-speed broadband access, the current challenges facing the market, and the benefits of competition – including competition from community broadband networks.

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Since President Obama took office, the United States has significantly expanded its broadband network and increased access. Investments from the federal government have helped deploy or upgrade more than 78,000 miles of network infrastructure since 2009, and more than 45 million Americans have adopted broadband Internet during the President's time in office. Today, more than 90 percent of Americans can access the Internet on a wired line and 98% by either wired or wireless connection.

Competitive markets have helped drive expansion in telecommunications services as strong infrastructure investments and falling prices have opened up a wide range of new communications products and services. Where there is strong competition in broadband markets today, it drives similar improvements. Unfortunately, competition does not extend into every market and its benefits are not evenly distributed. While the U.S. has an extensive network "backbone" of middle-mile connections (long, intra- or interstate physical fiber or cable network connections) with the capacity to offer high-speed Internet to a large majority of Americans, many consumers lack access to the critical "last-mile" (the last legs of the physical network that connect homes and businesses to the broader system), especially in rural areas. It is these last-mile connections that make higher speeds possible. For example, 94 percent of Americans in urban areas can purchase a 25 Mbps (megabit per second) connection, but only 51 percent of the rural population has access to Internet at that speed.

Competition has also been slow to emerge at higher speeds. Nearly forty percent of American households either cannot purchase a fixed 10 Mbps connection (i.e. a wired, land-based connection), or they must buy it from a single provider. And three out of four Americans do not have a choice between providers for Internet at 25 Mbps, the speed increasingly recognized as a baseline to get the full benefits of Internet access.

Without strong competition, providers can (and do) raise prices, delay investments, and provide sub-par quality of service. When faced with limited or nonexistent alternatives, consumers lack negotiating power and are forced to rely on whatever options are

available. In these situations, the role of good public policy can and should be to foster competition and increase consumer choice.

At the federal level, the government has already taken active steps to support broadband, committing billions of dollars to deploy middle-mile and last-mile infrastructure, and to ensure that our public schools and libraries have high speed broadband connections.

But local governments also have an important role to play. As this report details, communities around the country like Chattanooga, TN and Wilson, NC have developed a variety of strategies for building locally-owned broadband networks and promoting higher-speed Internet access. Over the past few years, these municipal networks have emerged as a critical tool for increasing access, encouraging competition, fostering consumer choice, and driving local and regional economic development. Local investments have also spurred the private sector to compete for customers, improving services, increasing broadband adoption, and providing more choice for consumers.

Not all communities, however, have the choice to pursue a local broadband network. 19 states currently have barriers in place limiting community broadband and protecting incumbent providers from competition. President Obama believes that there should be a level playing field for community-based solutions and is announcing today a series of steps that the Administration will be taking to foster consumer and community choice.

Economic Benefits of Broadband

In technical terms, broadband refers to a method of transmitting information using many different frequencies, or bandwidths, allowing a network to carry more data. For most Americans, however, the term broadband simply refers to a fast Internet connection—whether fixed or wireless.

Over time, our perceptions of what constitutes a "fast" Internet connection have changed. As consumer and business uses of the Internet evolve, and new applications become more deeply embedded into everyday life, higher speeds frequently shift from being a luxury to a requirement for many users. For example, beginning in 2000 the Federal government defined "broadband" as any service with a download speed of 200 kilobits per second (kbps) or faster.[1] In 2010, the Federal Communications Commission redefined "basic" broadband service as a connection with speeds of at least 4 megabits per second (Mbps) downstream – 20 times faster than the 2000 definition – and at least 1 Mbps upstream.[2]

Today, as everyday experiences for tens of millions of Americans suggest, even these speeds are insufficient for some applications, particularly when a connection is shared by several users. In recognition of the growing need for increased bandwidth, the FCC is considering further revisions to the definition of broadband, and has expressed interest in raising the threshold to 10 or even 25 Mbps downstream and from 1 Mbps to 3 Mbps upstream.[3] The following chart provides a sense of what these definitions mean by showing how long it would take a single user to upload or download different types of content at various connection speeds.

Time Required for Selected Internet-Based Activities at Different Speeds

	3 Minute Song *5 MB (Download)*	**2 Hour Movie** *5 GB (Download)*	**20 Photographs** *40 MB (Upload)*	**5 Minute Video** *200 MB (Upload)*
256 Kbps, 256 Kbps *2000 Broadband*	2m36s	43h24m	20m50s	1h44m
4 Mbps, 1 Mbps *2010 Broadband*	10s	2h46m	5m20s	26m40
25 Mbps, 3 Mbps *Advanced Broadband*	1.6s	26m40s	1m46s	8m53s

Source: CEA Calculations*Note:* These numbers assume that the ISP is meeting its advertised speed. Download times may be greater during periods of peak traffic.

Demand for Internet access is growing quickly. Total wired and wireless Internet access revenues in 2013 were $140 billion, and have increased by about 15 percent per year in real terms since 2005. [4] The rapidly growing demand for bandwidth is driven by new applications of the Internet that effectively require a broadband connection. These applications, which are increasingly central to everyday life for many Americans, include video streaming, which is used for education, entertainment, and communication; teleworking; cloud storage that allows users to store their files on the Internet, share them, and access them from any device; and online games that allow users to interact with one another in a virtual environment.

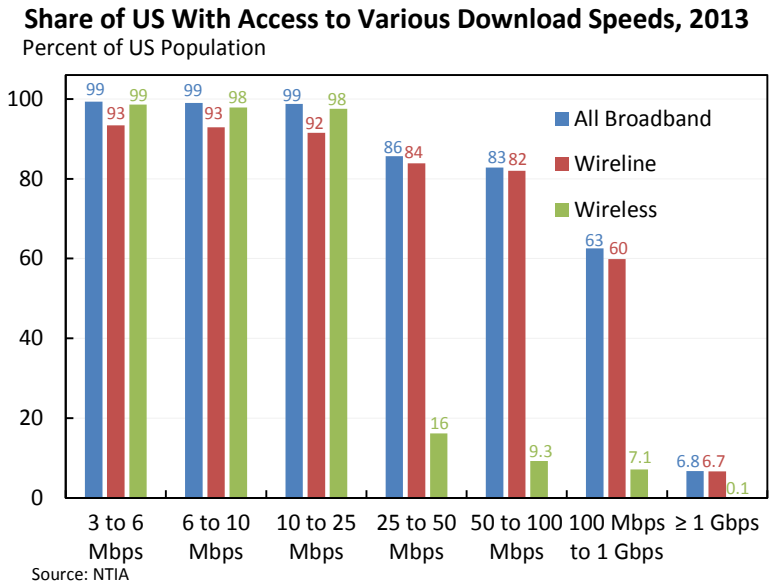
Economic studies confirm that broadband Internet creates significant value for consumers and makes an important and rapidly growing contribution to GDP. For example, one study of expenditures for Internet access estimates that as of 2006 – before the widespread availability of streaming audio and video – broadband Internet accounted for $28 billion in U.S. GDP. That study also found that broadband created an additional $5 to $7 billion in consumer surplus in 2006, meaning that consumers would have been willing to pay that much more for the service.[5] Another industry-sponsored study from 2009 estimates that broadband creates $32 billion in annual consumer surplus.[6] While these studies estimate consumer surplus by examining price sensitivity, another approach is to examine the amount of time users spend online, leading to estimates of $2,500 to $3,800 in value per-user per-year, which imply total consumer surplus in the hundreds of billions of dollars.

Over the longer term, broadband adoption also fuels a virtuous cycle of Internet innovation. This cycle begins when new applications of the Internet create demand for more bandwidth, resulting in a wave of network-level innovation and infrastructure investment. As more bandwidth becomes available, application-sector innovators find new ways to use that capacity, creating additional demand, leading to another round of network investment, and so on. While it is impossible to know what the next bandwidth-hungry killer application will be — perhaps it will be the "Internet of Things" or immersive virtual reality — both history and economic theory show that this virtuous cycle is a powerful driver of innovation and economic growth.[7]

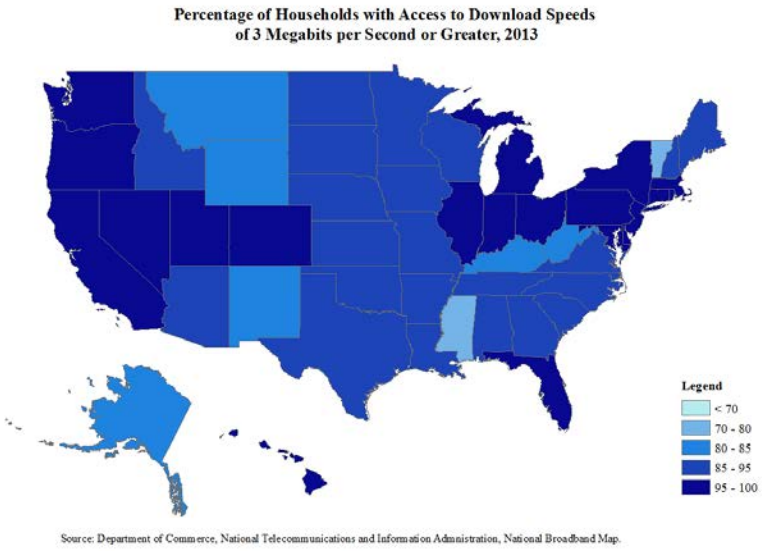
The recent history of wireless broadband provides a good example of the virtuous cycle of innovation and investment. Industry studies suggest that between 2007 and 2011 mobile applications development grew from almost nothing into a $20 billion industry, creating 311,000 U.S. jobs in the process.[8] This led to increased demand for wireless broadband, so that by 2013 private investment in new wireless infrastructure was $34 billion, more than the investments of the big three auto companies combined.[9]

Challenges in Broadband Access and Adoption

Since the President took office, national broadband availability has increased at all advertised speed levels.[10] Today, about 93 percent of Americans have access to wired broadband speeds of at least 3 Mbps downstream (i.e. broadband that allows a user to download 3 megabits per second), and 99 percent of Americans have access to similarly fast mobile wireless broadband. This increased availability reflects both private and public investment, including the $4 billion invested through the National Telecommunications and Information Administration's (NTIA) Broadband Technology Opportunities Program (BTOP) and $3.5 billion invested through the U.S. Department of Agriculture's (USDA) Rural Utilities Service Broadband Initiative Program (BIP), both part of the American Recovery and Reinvestment Act of 2009, as well as $66 million through USDA's ongoing Community Connect grant program.



Nevertheless, nearly 51 million Americans cannot purchase a wired broadband connection with download speeds of at least 25 Mbps, and only 63 percent have access to speeds of 100 Mbps or more.[11] Moreover, the costs, benefits, and availability of broadband Internet are not evenly distributed. For example, the following two maps show the state-level availability of broadband with download speeds of at least 3 Mbps, and at least 25 Mbps respectively as of June 2013. The first map shows that most Americans have access to "basic" broadband, though some work remains to fully connect the most rural states. However, there is considerable variation in the availability of 25 Mbps connections between states, with some reaching 95 percent penetration and others offering this high-quality service to less than 70 percent of households.



The gap in broadband availability between urban and rural communities is linked to the economics of network investment. The costs of providing a connection increase with distance, and the expected profits increase with the number of customers served. This makes it more economical to serve densely populated urban locations, where shorter wires can serve a larger number of potential customers. While satellite and terrestrial wireless technologies continue to deliver promising improvements, more work is needed to close the urban rural gap in broadband availability.

To address this gap, the USDA, BTOP, and the FCC's Connect America Fund program have all invested in creating the middle-mile infrastructure that provides high-speed access to "anchor institutions" such as schools and libraries in many rural communities. With middle-mile and community infrastructure in place, the remaining challenge is to provide last-mile connections so millions of Americans have access to high-speed broadband. As we describe below, the availability of middle-mile connections creates a significant opportunity for municipalities to increase such access.

Affordability

In total, almost 30 percent of American households did not have a home broadband connection as of 2013. One of the main challenges facing increased broadband adoption is price. In a 2010 survey conducted by the FCC, 36 percent of households without a home broadband connection pointed to expense as the major barrier.[12]

Not surprisingly, the cost of broadband represents a greater obstacle for lower-income Americans than middle- and high-income Americans. The NTIA reports that in 2012, 32 percent of families not online with incomes below $25,000 indicated that the high cost of Internet service prevents them from using broadband at home, compared to less than 22 percent of households not online with annual incomes above $50,000.[13] Overall Internet use is strongly correlated with household income, as illustrated in in the figure below, which plots median income against Internet adoption for a sample of 368 Metropolitan Statistical Areas.

One proven mechanism for increasing Internet access, quality and affordability is to promote competitive markets. Over the past 30 years, telecommunications policy has consistently attempted to encourage market competition in local, long-distance and Internet access markets. For example, the threat of satellite services pushed cable companies to expand their network capacity, positioning them to challenge phone companies in the market for home Internet access. And the ongoing competition between phone and cable companies has created a positive cycle of investment, as providers in many communities continuously upgrade their networks and improve their offerings.[15]

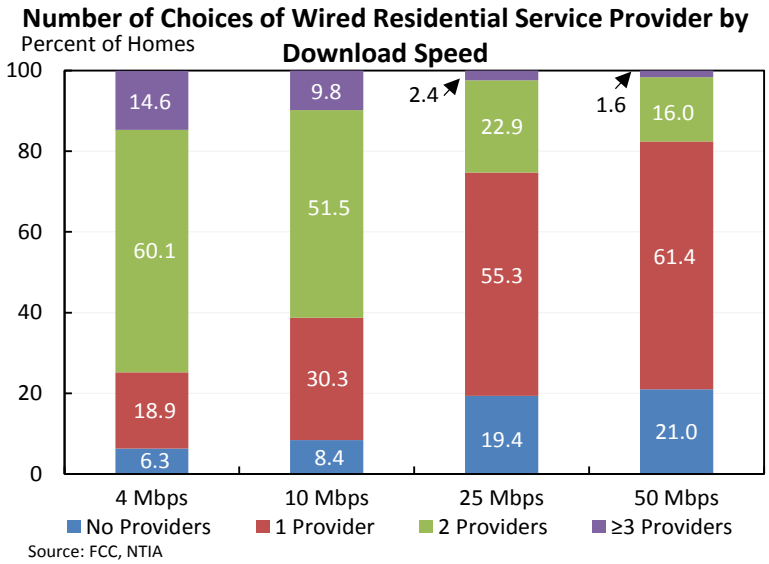
However, the overall national investment picture obscures regional variation. Many local and regional markets today do not have the kind of competition required to continue to ensure affordable access to the higher-speed broadband connections that Americans increasingly require. For example, the following table illustrates the number of choices available to American consumers in fixed and mobile broadband markets. When it comes to wired Internet, which can reliably deliver the highest speeds, the majority of Americans have three choices or less. The situation is somewhat better in wireless markets, although focusing on the number of choices obscures the large share of the market served by a handful of the largest providers. And while competition appears reasonably robust if one focuses on combined choices, it is important to recognize that fixed and wireless Internet are not necessarily substitutes, particularly at speeds of 25 Mbps or higher where there is typically no wireless service available.

Broadband Choice for American Consumers

Number of Choices	Share of U.S. Population (%)		
	Fixed	*Mobile*	*Combined*
1	9	0	0
2	33	3	1
3	37	5	2
4	13	22	4
5	3	26	10
6	1	22	18
7	0	11	19
8+	0	12	46

Source: NTIA, CEA Calculations

To illustrate the declining level of competition at higher speeds, the following chart shows the number of wired broadband service providers serving American consumers at different speeds. At speeds of 4 Mbps or less, 75 percent of consumers have a choice between two or more fixed providers, and 15 percent can select among three or more ISPs. However, in the market for Internet service that can deliver 25 Mbps downstream – the speed increasingly recognized as a baseline to get the full benefits of Internet access – three out of four Americans do not have a choice between providers.



While increased competition will not necessarily solve all broadband access challenges, basic economics suggests that increased competition leads to a better deal for consumers. For example, a 2014 OECD survey of eleven OECD member countries found that new entrants in wireless markets have a substantial impact on both prices and quality of service. Tellingly, the OECD study indicated that this result occurred even when a market already had three participants – that is, the fourth entrant into a wireless market significantly improved costs and services.[16] As shown above, less than 1 out of 40 American homes has 3 or more choices of providers at speeds in excess of 25 Mbps. Entry also had a positive impact on the market even when the new firm was very small.[17] In the U.S., a 2013 NTIA report found that among those who reported switching their Internet service provider, 38 percent did so to get a better price, and this option is simply unavailable to consumers who are only served by a single Internet Service Provider—or a single provider at the speeds they require.[18]

Even the threat of new competition can lead existing firms to make investments to improve the quality of their goods or services. In the Netherlands, for example, incumbent wireless carriers began offering plans at lower rates in an effort to prevent a new entrant from capturing market share by undercutting existing prices.[19] The U.S. cable television industry also provides an example of the benefits of potential competition. Academic research has shown that during the 2000's U.S. cable television operators were more likely to upgrade their systems to allow two-way communications in cities where the cable operator faced a threat of entry from a local municipal electric utility.[20]

Domestic experiences also show how the threat of competition can produce gains for broadband consumers. When Google announced that Google Fiber was coming to Kansas, speeds on existing networks surged 97 percent—the largest year-over-year jump in bandwidth observed in any state, ever. Likewise, when Google indicated that it would begin offering extremely fast connection speeds in Austin, TX, AT&T responded by announcing its own gigabit network.

Community-Based Broadband

Where the market does not generate the optimal level of competition or investment, the public sector can step in to make investments, encourage competition and provide choice to consumers. For example, government infrastructure investments, such as those made by the Department of Commerce and Department of Agriculture or by Massachusetts (as described below), may be able to put in place the "middle mile" network that lowers costs of entering the "last mile" market. These investments can attract the private sector or provide local governments the opportunity to build their own systems at much lower prices.

Antitrust and telecommunications policies can also promote competition. At the Federal level, the Department of Justice has an important role to play in preventing the unlawful acquisition or abuse of market power. The Telecommunications Act of 1996 also empowers the FCC to regulate service providers in a manner that promotes competition both within and between technology-based platforms such as cable, cellular, satellite, and wireless. The President's recent call for strong Net Neutrality rules to ensure that no company can act as a gatekeeper to Internet content are fundamentally about preserving access and competition in the digital marketplace. And states have an important role in promoting competition and ensuring fairness in their local communications markets.

But these federal and state initiatives are only part of the solution. Local governments also have a critical role to play. In markets where private competition is anemic, whether because of regulatory barriers to entry or the high fixed costs of infrastructure investment, town and cities can build their own middle-mile networks and offer competitive access to the private sector, as Scott County, MN has done. Or municipalities can provide service directly to consumers, like in Chattanooga, TN. In either case, municipalities are creating more choices for consumers, fostering competition and creating opportunities for economic growth. Municipal broadband is often a logical choice for towns and cities that are already served by a municipal electric utility, since infrastructure costs can be shared across those two services, just as private cable companies leveraged their networks to provide Internet service. Hundreds of towns and cities around the country have experimented with these networks and created tremendous benefits for consumers and businesses. APPENDIX 1 includes a full list of municipal networks around the country.

Today, however, there are barriers to community-owned broadband in 19 states around the country. The Obama Administration believes that consumers should have the option to provide themselves broadband services through local government and locally-owned utilities and that state and local policy should support a level playing field for these community-based solutions. This section considers several detailed case studies of municipal broadband initiatives and their benefits for consumers, businesses and communities.

Chattanooga, TN: Gigabit service drives investment, innovation

In 2007, Chattanooga's Electric Power Board (EPB), a municipally-owned utility, announced a 10 year plan to build out a fiber network to serve all of Chattanooga. Based on their analysis, EPB had determined that investments in the network could both drive a smart grid system that would generate significant savings by increasing the reliability of its electricity and also provide customers with improved communication services. In 2009, EPB began offering its triple-play services—Internet, phone, and cable television. Since 2009, EPB has upgraded the mid-tier consumer service from 15 to 30, from 30 to 50, and from 50 to 100 Mbps, without raising costs. In 2010, EPB announced it would offer the first 1 gigabit per second (Gbps) service in the United States. Today, EPB operates 8,000 miles of fiber for 60,000 residential and 4,500 business customers out of a potential 160,000 homes and businesses.

EPB's efforts have encouraged other telecom firms to improve their own service. In 2008, for example, Comcast responded to the threat of EPB's entrance into the market by investing $15 million in the area to launch the Xfinity service – offering the service in Chattanooga before it was available in Atlanta, GA. More recently, Comcast has started offering low-cost introductory offers and gift cards to consumers to incentivize service switching. Despite these improvements, on an equivalent service basis, EPB's costs remain significantly lower.

EPB's investments are reshaping Chattanooga's economic landscape. The gigabit broadband service has helped the City attract a new community of computer engineers, tech entrepreneurs and investors. For example, local entrepreneurs have organized Lamp Post, a venture incubator that provides capital and mentorship to startups. Lamp Post now has over 150 employees in a 31,000 square foot office space in downtown Chattanooga. CO.LAB, a local nonprofit organization, provides shared working space, access to investor networks and hosts the annual summer GITANK program, a 14-week business accelerator. The investment community has responded in kind. Since 2009, Chattanooga has gone from close to zero venture capital to at least five organized funds with investable capital of over $50 million. The growing tech ecosystem has been profiled by the *New York Times*, *Washington Post* and *The Atlantic*.

While the broadband network is opening up new economic pathways, EPB itself remains the most important customer for the fiber network, which it has used to develop one of the nation's leading smart grids. The smart grid, which involves 170,000 intelligent electric meters all reporting every 15 minutes, helps EPB monitor and respond to outages, emergencies, and electricity theft in real time. EPB's smart grid has cut duration of power outages by 60 percent, saving local businesses and industry an estimated $45 to $60 million. With the monitoring system in place, EPB crews can also respond in a targeted fashion during emergencies, helping families and businesses cope with tornados and other natural disasters. [21]

Wilson, NC: Municipal broadband encourages private competition

In November of 2006, Wilson's City council voted unanimously to build a fiber-to-the-home (FTTH) network through the town's electricity provider, Greenlight. The City Council issued $28 million in debt to start construction. Greenlight began offering its

services in 2008 and expanded its network to include triple-play (television, phone, and internet) services citywide by January 2009. In 2010, the city took another $4.5 million loan from Wells Fargo to improve its network. The subscription base grew steadily in its first few years and numbers over 7000 today –more than a third of Wilson's 21,000 households.

Greenlight has been a commercial success. Greenlight achieved its first monthly operating profit one year ahead of schedule in October 2010 and made a profit of nearly three-quarters of a million dollars in 2013. However, a 2011 state law prevents municipalities from providing broadband service to other towns outside of its area, limiting further growth.

Greenlight's introduction of its triple-play service has increased industry competition, which has lowered prices for Wilson's residents. From 2007 to 2009, Time Warner raised rates for almost all of its services across the board. According to a December 2009 presentation for the House Select Committee on High Speed Internet Access in Rural and Urban Areas, TWC raised rates in non-competitive areas around Wilson while holding Wilson's rates steady. According to the same report, TWC raised its prices for basic internet service in the North Carolina Research Triangle — as much as 52 percent in Cary — but did not impose any rate hike in Wilson. Moreover, TWC stabilized prices in Wilson for the digital sports and games tier, while Triangle customers paid 41 percent more. The lowered prices in Wilson make a big difference. According to an independent consultant for Wilson, Greenlight saved its residents more than $1 million each year compared to what Time Warner Cable customers in other areas pay.

Increased competition has also yielded increased speeds for Wilson customers. Greenlight's system offers speeds of up to 1 gigabit for consumers and businesses. In 2008, Time Warner's residential Road Runner service in the state offered speeds no higher than 10 Mbps, equivalent to Greenlight's lowest consumer tier. TWC charged $57 per month for the service while Greenlight charged $35. In response, TWC upped its top-tier speed to 15 Mbps "because of the competitive environment," according to a Time Warner spokesperson.[22]

Lafayette, LA: Network increases customer savings, strengthens local anchor institutions

The residents of Lafayette have a long history of supporting local infrastructure initiatives. Recognizing the need to modernize its broadband infrastructure in the early 2000's, the community voted in 2005 to approve construction of a fiber-to-the-home (FTTH) network. After overcoming serious opposition from local broadband service providers, the publicly-owned Lafayette Utilities System (LUS) started connecting homes and businesses to its LUS Fiber network in 2009. The network seeks to provide equitable access to all of Lafayette's citizens, and the system was rolled out across high-income and low-income neighborhoods equally. LUS Fiber now offers 100 Mbps speed for all subscribers.

As competing firms adjusted their plans to account for LUS Fiber's market entry, residents who weren't customers of the network started to see lower prices. Cox Communications, a major regional provider which had raised rates six times in four years, kept its rates stable from 2004 to 2007 to account for LUS's possible market entry. Still, LUS's prices have been consistently lower than those offered by Cox. Terry Huval, the director of LUS, estimates that the community saved $4 million from these deferred rate increases. Using estimates of Cox's average competing discounts and LUS Fiber's lower rates, LUS projects the fiber system will create total savings of between $90 and $100 million over the its first 10 years.

The fiber network has brought in companies eager to obtain fast service at lower prices. Pixel Magic brought 100 to 200 jobs when it built an office in Lafayette to accomplish work on the movie "Secretariat". The high-speed capability of the broadband network was a big factor in their eventual decision to maintain their office in Louisiana permanently. The tech startup firm Skyscraper Holding moved from Los Angeles to Lafayette to obtain 100 Mb/s speeds at a fraction of the cost the company was charged on the west coast. The company pays just $200 a month for more reliable service.

The network has strengthened community anchors as well, delivering greater value and opportunities for connectivity to Lafayette's school and library systems. By mid-2008, all of the schools in the Lafayette Parish School System were able to access 100 Mbps speeds for $390/month. Not only can students now do more to leverage the Internet for better learning opportunities, this monthly fee saves community tax dollars by being a better value than competitors could offer. Lafayette's public libraries also benefit from the network by sharing a 90 Mbps connection from LUS that was rated as the best value amongst possible providers by the federal E-Rate program. [23]

Scott County, MN: Municipal government sees savings for county, school operations

In the early 2000s, Scott County started exploring options for increasing broadband services for county government buildings and schools. In 2007, the County issued $3.5 million in bonds to install a high-speed middle-mile network. The network connects all county-owned facilities, including schools, libraries, city halls, policy and fire departments and public safety towers. It also connects with the state's high capacity backbone network and with multiple private providers. From the beginning, the project was a joint effort between local and state government and the private sector. While the county paid the upfront costs, the state pays for the network's operating costs in exchange for use of the network. The open architecture of the system allows private companies to offer their own services; private providers, in turn, cover the network's maintenance costs.

The network has achieved significant benefits. Scott County's annual bond payment for the construction of the backbone is $35,000 less than what the County was paying for leasing private sector lines. Local schools have seen even greater savings. The costs for Scott County's school districts per megabit of Internet service went from an average of $58.00 to $6.83 per megabit for all school districts—a cost reduction of nearly 90

percent per megabit. The net effect was a tripling of availability (100 to 300 megabits) while costs fell from $5,800 to $2,049 a month. At the state level, the government is saving approximately $1 million per year from access to the public network.

The network has also helped attract significant private investment and fostered job creation. In 2010, for example, Emerson Process Management was finalizing a decision on where to site a new $70 million investment that would create 500 jobs. Emerson's two finalist sites were the town of Shakopee in Scott County, Minnesota and Chihuahua, Mexico. Recognizing the savings from the high-speed broadband network, Emerson chose Scott County. [24]

Leverett, MA: State and federal programs enable local investment

In 2008, Massachusetts Governor Deval Patrick created the Massachusetts Broadband Initiative (MBI). MBI was charged with bringing broadband to all residents and businesses in MA within three years. The Broadband Act provided MBI with initial $40 million in state bond funds. Over the last six years, Massachusetts has built 1,200 miles of new fiber optic cable that provide access to more than 120 communities in Western and North Central Massachusetts.

Of the original state funds, $25 million were directed to build a broadband network in Western, MA. With the support of additional federal funds, MBI developed "MassBroadband 123", a middle-mile network serving 123 communities in the region. MBI worked closely with the private sector to build the project. Today, MassBroadband 123 is operated by Axia NGNetworks. The network has an open architecture that allows any Internet service provider to purchase wholesale services on the network at the same rates. The network also positions municipalities to focus on putting homes and businesses on the network through last-mile connections.

Leverett, MA saw the opportunity to build its own broadband system. In 2012, Leverett voters approved a modest property tax increase and a $3.6 million bond to fund the network. Leverett created a publicly controlled Municipal Light Plant (MLP) entity to own and operate its network, named LeverettNet. The town is currently in the process of building the network – which will provide 1 gigabit service – and connecting it to all 630 households in the community. [25]

Choctaw Nation Tribal Area, OK: Public private collaboration brings broadband to new communities

In early 2009, much of the ten Southeastern Oklahoma counties encompassed by the Choctaw Nation's Tribal Area lacked access to reliable broadband service. The low population density (8.3 to 19.7 people per square mile), the high poverty rate (25 percent of the population below the poverty line) and the rugged terrain made the economics of broadband infrastructure very challenging. Initial capital costs to deploy broadband meant that broadband service was limited only to commercially viable areas.

Pine Tele, the service provider offering voice, video, cell, long distance, and high-speed broadband in SE OK applied for and received 4 American Recovery and Reinvestment awards in 2009 and 2010. One grant was to build out fiber to the home in the area already covered by landlines, and the other three were for wireless – advanced 3G technology – to completely unserved areas. As of September 2014 Pine Tele had deployed 324 miles of fiber, 5,500 fiber drops, and 54 tower sites. New or improved broadband service had been made available to 1,757 fiber customers and 1,194 wireless customers. Today, Pine Telephone provides a variety of broadband packages over both their fiber and wireless facilities ranging from 1.5 Mbps to 5 Mbps for download speeds and 384 Kbps to 5 Mbps for upload speeds.

The benefits for the community have been significant. Every school in the 10 county Pine Tele service area is now connected with high-speed fiber optic broadband service. This has created the ability to integrate online educational tools into everyday teaching and assessments of student comprehension. Broken Bow School District is one example. This district serves approximately 1,280 students per day. They have been able to integrate smart boards, iPads, online lesson plans, and the "I-Ready program" to supplement learning. Hundreds of performance tests are now completed online. And family engagement is improved, as parents are increasingly provided online access to records of attendance, assignments, and test scores. The connectivity also allows the Choctaw Nation to multicast educational videos and share messages from Tribal leadership from a central location. For example, the Choctaw School of Language now offers distance learning courses to approximately 14 head starts and 32 high schools within the Choctaw Nation, in addition to several universities. [26]

Promoting Broadband that Works

Last November, the President outlined his plan to keep the Internet open to new competition and innovation by safeguarding net neutrality — which will help ensure no one company can act as a gatekeeper to digital content. But there is more work to do so that every American has access to a free and open internet. This is particularly true in areas where broadband competition is lacking, resulting in high prices and slow service.

High-speed, low-cost broadband is paving the way for economic revitalization not just in Cedar Falls, but in places like Chattanooga, TN and Lafayette, LA — which have Internet speeds up to 100 times faster than the national average and deliver it at an affordable price. To help more communities achieve these results, support economic growth, and promote a level playing field for all competitors, the Obama Administration is:

- Calling to End Laws that Harm Broadband Service Competition: Laws in 19 states — some specifically written by special interests trying to stifle new competitors — have held back broadband access and, with it, economic opportunity. Today President Obama is announcing a new effort to support local choice in broadband, formally opposing measures that limit the range of options to available to communities to

spur expanded local broadband infrastructure, including ownership of networks. As a first step, the Administration is filing a letter with the Federal Communications Commission (FCC) urging it to join this effort by addressing barriers inhibiting local communities from responding to the broadband needs of their citizens.

- Expanding the National Movement of Local Leaders for Better Broadband: As of today, 50 cities representing over 20 million Americans have joined the Next Century Cities coalition, a nonpartisan network pledging to bring fast, community-supported broadband to their towns and cities. They join 37 research universities around the country that formed the Gig.U partnership to bring fast broadband to communities around their campuses. To recognize these remarkable individuals and the partnerships they have built, in June 2015 the White House will host a Community Broadband Summit of mayors and county commissioners from around the nation who are joining this movement for broadband solutions and economic revitalization.

- Announcing a New Initiative to Support Community Broadband Projects: To advance this important work, the Department of Commerce is launching a new initiative, BroadbandUSA, to promote broadband deployment and adoption. Building on expertise gained from overseeing the $4.7 billion Broadband Technology Opportunities Program funded through the Recovery Act, BroadbandUSA will offer online and in-person technical assistance to communities; host a series of regional workshops around the country; and publish guides and tools that provide communities with proven solutions to address problems in broadband infrastructure planning, financing, construction, and operations across many types of business models.

- Unveiling New Grant and Loan Opportunities for Rural Providers: The Department of Agriculture is accepting applications to its Community Connect broadband grant program and will reopen a revamped broadband loan program which offers financing to eligible rural carriers that invest in bringing high-speed broadband to unserved and underserved rural areas.

- Removing Regulatory Barriers and Improving Investment Incentives: The President is calling for the Federal Government to remove all unnecessary regulatory and policy barriers to broadband build-out and competition, and is establishing a new Broadband Opportunity Council of over a dozen government agencies with the singular goal of speeding up broadband deployment and promoting adoptions for our citizens. The Council will also solicit public comment on unnecessary regulatory barriers and opportunities to promote greater coordination with the aim of addressing those within its scope.

Appendix 1: U.S. Municipalities with Broadband Networks[27]

City	State	Name of Network	Type
Ketchikan	AK	KPU Telecommunications	cable
Kotlik	AK	Kotlik	cable
Statewide	AK	Rural Alaska Video E-Health Network (RAVEN)	inet
White Mountain	AK	White Mountain	cable
Opelika	AL	Opelika	fiber
Opp	AL	Opp Cablevision	cable
Scottsboro	AL	Scottsboro EPB	cable
Sylacauga	AL	Sylacauga	cable
Conway	AR	Conway Corporation	cable
Paragould	AR	Paragould Light Water and Cable	cable
Sells	AZ	Tohono O'odham Last-Mile FTTH and Broadband Wireless Network	partial
Anaheim	CA	Anaheim	dark
Anaheim	CA	Anaheim Fiber	inet
Burbank	CA	Burbank Water and Power	partial
Glendale	CA	Glendale	dark
Humboldt County	CA	Digital Redwoods	inet
Loma Linda	CA	Loma Linda	dark
Loma Linda	CA	Loma Linda Connected Community	fiber
Lompoc	CA	City of Lompoc (LompocNet)	inet
Long Beach	CA	Long Beach	dark
Mendocino County	CA	Mendocino Community Network	inet
Palo Alto	CA	Palo Alto Fiber	dark
Pasadena	CA	Pasadena	dark
San Bruno	CA	San Bruno Municipal Cable TV	cable
San Francisco	CA	SF Fiber	question
Santa Clara	CA	Santa Clara	partial
Santa Monica	CA	Santa Monica City Net	partial
Santa Monica	CA	Santa Monica Fiber	partial
Shafter	CA	City of Shafter, California	partial
Truckee	CA	Truckee Donner Public Utility District	dark
Vernon	CA	Vernon Light & Power	fiber
Cortez	CO	Cortez Community Network	partial
Durango	CO	Durango	dark
Glenwood Springs	CO	Glenwood Springs Community Broadband Network (GSCBN)	partial
Longmont	CO	NextLight	fiber

Bristol	CT	Bristol CT	inet
East Hartford	CT	Connecticut Education Network	dark
Manchester	CT	Manchester Wireless	inet
Fort Pierce	FL	FPUAnet Communications	partial
Gainesville	FL	GATOR NET	partial
Hobe Sound	FL	Martin County Dark Fiber	dark
Indiantown	FL	Martin County Dark Fiber	dark
Jacksonville	FL	Jacksonville iNet	inet
Jensen Beach	FL	Martin County Dark Fiber	dark
Jupiter Island	FL	Martin County Dark Fiber	dark
Lakeland	FL	Lakeland	dark
Leesburg	FL	Leesburg	partial
New Smyrna Beach	FL	Utilities Commission, City of New Smyrna Beach	inet
Ocala	FL	Ocala Utility Services	partial
Ocean Breeze Park	FL	Martin County Dark Fiber	dark
Palm Beach County	FL	Palm Beach County	partial
Palm City	FL	Martin County Dark Fiber	dark
Palm Coast	FL	Palm Coast FiberNET	partial
Port Salerno	FL	Martin County Dark Fiber	dark
Quincy	FL	NetQuincy	fiber
Sewall's Point	FL	Martin County Dark Fiber	dark
Stuart	FL	Martin County Dark Fiber	dark
Tallahassee	FL	Tallahassee	dark
Valparaiso	FL	Valparaiso Broadband	cable
Baconton	GA	Community Network Services - Camilla	cable
Baker County	GA	SGRITA Rural Last-mile Infrastructure Project Last-mile	partial
Cairo	GA	Community Network Services - Cairo (Syrup City)	cable
Calhoun	GA	CALNET	partial
Calhoun County	GA	SGRITA Rural Last-mile Infrastructure Project Last-mile	partial
Camilla	GA	Community Network Services - Camilla	cable
Cartersville	GA	Fibercom	partial
Catoosa County	GA	OptiLink	partial
Columbia County	GA	Columbia County Community Broadband Network	partial
Dalton	GA	OptiLink	fiber
Doerun	GA	City of Doerun	cable
Douglasville	GA	Douglas County School System Fiber	inet
Dublin	GA	Dublin	partial

Early County	GA	SGRITA Rural Last-mile Infrastructure Project Last-mile	partial
Elberton	GA	Elberton Utilities	cable
Flintstone	GA	EPB Fiber Optics	fiber
Forsyth	GA	Forsyth Cablenet	cable
LaGrange	GA	LaGrange Telecommunications Department	partial
Miller County	GA	SGRITA Rural Last-mile Infrastructure Project Last-mile	partial
Mitchell County	GA	SGRITA Rural Last-mile Infrastructure Project Last-mile	partial
Monroe	GA	Monroe Utilities Network	cable
Moultrie	GA	Community Network Services - Moultrie	cable
Murray County	GA	OptiLink	partial
Pelham	GA	Community Network Services - Pelham (Pelnet)	cable
Rossville	GA	EPB Fiber Optics	fiber
Sandersville	GA	Sandersville FiberLink	partial
Thomasville	GA	Community Network Services - Thomasville	cable
Tifton	GA	Tifton	dark
Whitfield County	GA	OptiLink	partial
Wildwood	GA	EPB Fiber Optics	fiber
Algona	IA	Algona Municipal Utilities	cable
Alta	IA	Altatec	cable
Bellevue	IA	Bellevue	fiber
Cedar Falls	IA	Cedar Falls Utilities	fiber
Cedar Falls	IA	Cedar Falls Utilities - rural expansion	partial
Coon Rapids	IA	Coon Rapids Municipal Utilities	cable
Grundy Center	IA	Grundy Center Municipal Light & Power	cable
Harlan	IA	Harlan Municipal Utilities	cable
Hartley	IA	The Community Agency	cable
Hawarden	IA	HITEC - Hawarden Integrated Technology, Energy, & Communication	cable
Independence	IA	Independence Light & Power, Telecommunications	cable
Indianola	IA	Indianola	partial
Laurens	IA	Laurens Municipal Power and Communications	cable
Lenox	IA	Lenox	fiber
Manning	IA	Manning Municipal Communication and Television System Utility	cable
Mapleton	IA	Mapleton Communications	cable

Muscatine	IA	MachLink	cable
Osage	IA	Osage Municipal Utilities	cable
Paullina	IA	The Community Agency	cable
Primghar	IA	The Community Agency	cable
Reinbeck	IA	Reinbeck Telecom	cable
Sanborn	IA	The Community Agency	cable
Spencer	IA	Spencer Municipal Utilities	fiber
Webster City	IA	Webster City	dark
Ammon	ID	Ammon	partial
Idaho Falls	ID	Circa	dark
Plummer	ID	Coeur d'Alene Reservation FTTH Project Last-mile Non-remote	partial
Aurora	IL	Onlight Aurora	partial
Aurora	IL	OnLight Aurora	dark
Champaign	IL	Urbana-Champaign Big Broadband UC2B	partial
DeKalb County	IL	DeKalb Advancement of Technology Authority Broadband	partial
Evanston	IL	Evanston	partial
Highland	IL	Highland Communication Services	fiber
LaSalle County	IL	DeKalb Advancement of Technology Authority Broadband	partial
Princeton	IL	Princeton Municipal Utilities	partial
Rochelle	IL	Rochelle Municipal Utilities	partial
Rock Falls	IL	Rock Falls	partial
Urbana	IL	Urbana-Champaign Big Broadband UC2B	partial
Anderson	IN	Anderson Municipal Light and Power	partial
Auburn	IN	Auburn Essential Services	fiber
Lebanon	IN	Lebanon Utilities	cable
Mishawaka	IN	Saint Joe Valley MetroNet	dark
South Bend	IN	Saint Joe Valley MetroNet	dark
Westfield	IN	City of Westfield	partial
Chanute	KS	Chanute	partial
Lenexa	KS	Lenexa Fiber	dark
Ottawa	KS	Ottawa Network	partial
White Cloud	KS	Iowa Tribe of Kansas and Nebraska Fiber-to-the- Premise	partial
Barbourville	KY	Barbourville	cable
Bardstown	KY	Bardstown Cable	cable
Bowling Green	KY	Bowling Green Municipal Utility	partial
Corinth	KY	City of Williamstown	partial
Frankfort	KY	Frankfort Plant Board	cable

Franklin	KY	Franklin Municipal FiberNET	partial
Glasgow	KY	Glasgow Electric Power Board	cable
Grant County	KY	City of Williamstown	partial
Hopkinsville	KY	Energy Net	cable
Monticello	KY	Community Telecom Services	cable
Murray	KY	Murray Electric System	cable
Owen County	KY	City of Williamstown	partial
Owensboro	KY	OMU Online	partial
Paducah	KY	Paducah Power System	partial
Russellville	KY	Russellville EPB SmartNet	fiber
Williamstown	KY	City of Williamstown	cable
Lafayette	LA	Lafayette Utilities System	fiber
Braintree	MA	Braintree Electric Light Department	cable
Chicopee	MA	Chicopee Electric Light	partial
Holyoke	MA	Holyoke Gas & Electric Co.	partial
Leverett	MA	LeverettNet	fiber
Norwood	MA	Norwood Light Broadband	cable
Russell	MA	Russell Municipal Cable	cable
Shrewsbury	MA	Shrewsbury Electric and Cable Operations	cable
South Hadley	MA	Five College Fiber Optic Network	inet
Taunton	MA	Taunton Municipal Lightning Plant	partial
Worcester	MA	Worcester Municipal Fiber Loop	inet
Carroll County	MD	Carroll County Broadband	dark
Columbia	MD	Howard County Fiber Network	dark
Dayton	MD	Howard County Fiber Network	dark
Easton	MD	EastonOnline	cable
Elkridge	MD	Howard County Fiber Network	dark
Ellicot City	MD	Howard County Fiber Network	dark
Fulton	MD	Howard County Fiber Network	dark
Highland	MD	Howard County Fiber Network	dark
Savage	MD	Howard County Fiber Network	dark
Coldwater	MI	CBPU	cable
Crystal Falls	MI	City of Crystal Falls	cable
Holland	MI	Holland Fiber Network	fiber
Negaunee	MI	City of Negaunee Dept. of Public Works	cable
Norway	MI	City of Norway CATV System	cable
Sebewaing	MI	Sebewaing Light & Water	fiber
Wyandotte	MI	Wyandotte	cable
Bagley	MN	Bagley Public Utilities	fiber
Barnesville	MN	Barnesville Municipal Utilities	partial
Belle Plaine	MN	Scott County Fiber Network	dark

Bingham Lake	MN	SMBS - Bingham lake	fiber
Brewster	MN	SMBS - Brewster	fiber
Carver	MN	CarverLink	dark
Chanhassen	MN	CarverLink	dark
Chaska	MN	Chaska.Net	partial
Cologne	MN	CarverLink	dark
Crosslake	MN	Crosslake Communications	fiber
Eagan	MN	Access Eagan	partial
Elko New Market	MN	Scott County Fiber Network	dark
Hamburg	MN	CarverLink	dark
Heron Lake	MN	SMBS - Heron Lake	fiber
Jackson	MN	SMBS - Jackson	fiber
Jordan	MN	Scott County Fiber Network	dark
Lake County	MN	Lake County	partial
Lakefield	MN	SMBS - Lakefield	fiber
Mayer	MN	CarverLink	dark
Monticello	MN	Monticello Fiber Network	fiber
New Germany	MN	CarverLink	dark
New Prague	MN	Scott County Fiber Network	dark
Norwood Young America	MN	CarverLink	dark
Okabena	MN	SMBS - Okabena	fiber
Pine City	MN	Pine City Fiber Optic Backbone	partial
Prior Lake	MN	Scott County Fiber Network	dark
Round Lake	MN	SMBS - Round Lake	fiber
Savage	MN	Scott County Fiber Network	dark
Shakopee	MN	Scott County Fiber Network	dark
Silver Bay	MN	Lake County Fiber Network	partial
St. Louis Park	MN	St. Louis Park	inet
Two Harbors	MN	Lake County Fiber Network	partial
Victoria	MN	CarverLink	dark
Waconia	MN	CarverLink	dark
Watertown	MN	CarverLink	dark
Westbrook	MN	Westbrook Municipal Light & Power	cable
Wilder	MN	SMBS - Wilder	fiber
Windom	MN	Windomnet	fiber
Kahoka	MO	Kahoka	cable
Marshall	MO	Marshall	fiber
North Kansas City	MO	liNKCity	fiber
Poplar Bluff	MO	City of Poplar Bluff Municipal Utilities	cable
Springfield	MO	SpringNet	partial
Collins	MS	Collins Communications	cable

Asheville	NC	ERC Broadband	dark
Chapel Hill	NC	Chapel Hill Fiber Optic Services	inet
Cornelius	NC	MI-Connection	cable
Davidson	NC	MI-Connection	cable
Mooresville	NC	MI-Connection	cable
Morganton	NC	Morganton	cable
Salisbury	NC	Fibrant	fiber
Sylva	NC	BalsamWest FiberNET	partial
Tryon	NC	PANGAEA	partial
Wilson	NC	Greenlight	fiber
South Sioux City	NE	South Sioux City Municipal Network	inet
Cheshire	NH	Fast Roads	dark
Claremont	NH	Fast Roads	dark
Enfield	NH	Fast Roads	partial
Fitzwilliam	NH	Fast Roads	dark
Goshen	NH	Fast Roads	dark
Hanover	NH	Fast Roads	dark
Keene	NH	Fast Roads	dark
Lebanon	NH	Fast Roads	dark
Lyme	NH	Fast Roads	dark
Marlow	NH	Fast Roads	dark
New London	NH	Fast Roads	dark
Newport	NH	Fast Roads	dark
Orford	NH	Fast Roads	dark
Richmond	NH	Fast Roads	dark
Rindge	NH	Fast Roads	partial
Springfield	NH	Fast Roads	dark
Sunapee	NH	Fast Roads	dark
Swanzey	NH	Fast Roads	dark
Glassboro	NJ	Glassboro Municipal Area Network	inet
Vineland	NJ	Vineland Metropolitan Area Network	inet
Churchill	NV	CC Communications	fiber
Bristol Center	NY	Axcess Ontario	dark
Bristol Springs	NY	Axcess Ontario	dark
Canandaigua	NY	Axcess Ontario	dark
Cheshire	NY	Axcess Ontario	dark
Clifton Springs	NY	Axcess Ontario	dark
East Bloomfield	NY	Axcess Ontario	dark
Farmington	NY	Axcess Ontario	dark
Fishers	NY	Axcess Ontario	dark
Geneva	NY	Axcess Ontario	dark

Gorham	NY	Axcess Ontario	dark
Hogansburg	NY	St. Regis Mohawk Tribe Connect (Economic Development for the 21st Century)	partial
Honeoye	NY	Axcess Ontario	dark
Hopewell	NY	Axcess Ontario	dark
Manchester	NY	Axcess Ontario	dark
Naples	NY	Axcess Ontario	dark
New York City	NY	New York City Wireless Network NYCWiN	inet
Phelps	NY	Axcess Ontario	dark
Rushville	NY	Axcess Ontario	dark
Stanley	NY	Axcess Ontario	dark
Victor	NY	Axcess Ontario	dark
West Bloomfield	NY	Axcess Ontario	dark
Akron	OH	OneCommunity	partial
Ashtabula	OH	OneCommunity	partial
Barberton	OH	OneCommunity	partial
Bryan	OH	Bryan Municipal Utilities	cable
Butler County	OH	Butler County	inet
Canton	OH	OneCommunity	partial
Cincinnati	OH	Hamilton County	inet
Cleveland	OH	OneCommunity	partial
Cleveland Heights	OH	OneCommunity	partial
Dover	OH	Dover Technology	dark
Dublin	OH	Dublink+	partial
Eastlake	OH	OneCommunity	partial
Elyria	OH	OneCommunity	partial
Gahanna	OH	Gahanna	inet
Hamilton	OH	Hamilton Miami U	inet
Lorain	OH	OneCommunity	partial
Mayfield Village	OH	OneCommunity - Mayfield Village	partial
Medina County	OH	Medina County	dark
Mentor	OH	OneCommunity	partial
Middletown	OH	Middletown Miami U	inet
New Albany	OH	BlueAlbany	partial
Sandusky	OH	OneCommunity	partial
Wadsworth	OH	City of Wadsworth Electric & Communications Dept.	cable
Wadsworth	OH	OneCommunity	dark
Woodsfield	OH	Woodsfield Municipal Power	cable
Wooster	OH	OneCommunity	partial
Ponca City	OK	Ponca City Technology Services	partial

Sallisaw	OK	DiamondNet	fiber
Ashland	OR	Ashland Fiber Network	cable
Canby	OR	Clackamas Broadband Express	dark
Damascus	OR	Clackamas Broadband Express	dark
Douglas County	OR	Oregon South Central Regional Fiber Consortium Lighting the Fiber Middle-mile Project	partial
Estacada	OR	Clackamas Broadband Express	dark
Eugene	OR	Eugene	dark
Gladstone	OR	Clackamas Broadband Express	dark
Government Camp	OR	Clackamas Broadband Express	dark
Happy Valley	OR	Clackamas Broadband Express	dark
Independence	OR	MINET	fiber
Klamath County	OR	Oregon South Central Regional Fiber Consortium Lighting the Fiber Middle-mile Project	partial
Lane County	OR	Oregon South Central Regional Fiber Consortium Lighting the Fiber Middle-mile Project	partial
Milwaukie	OR	Clackamas Broadband Express	dark
Molalla	OR	Clackamas Broadband Express	dark
Monmouth	OR	MINET	fiber
Mulino	OR	Clackamas Broadband Express	dark
Oregon City	OR	Clackamas Broadband Express	dark
Sandy	OR	SandyNet	partial
Sherwood	OR	Sherwood Fiber	partial
Springfield	OR	Springfield Utility Board	dark
The Dalles	OR	Q-Life Network	partial
Wilsonville	OR	Clackamas Broadband Express	dark
Beaver County	PA	Beaver County Fiber	inet
Kutztown	PA	Hometown Utilicom	fiber
Pitcairn	PA	Pitcairn Power/Community Cable	cable
Hartsville	SC	Hartsville	question
Oconee County	SC	Oconee FOCUS (Fiber Optics Creating Unified Solutions)	partial
Orangeburg County	SC	Orangeburg	partial
Aberdeen	SD	CityNet (Dakota Interconnect)	inet
Beresford	SD	Beresford Municipal Telephone/Cablevision	cable
Brookings	SD	Swiftel	fiber
Bristol	TN	Bristol TN Essential Services	fiber
Chattanooga	TN	EPB Fiber Optics	fiber
Clarksville	TN	Clarksville CDE Lightband	fiber

Columbia	TN	CPWS Broadband	cable
East Ridge	TN	EPB Fiber Optics	fiber
Erwin	TN	Erwin Utilities	partial
Fayetteville	TN	Fayetteville Public Utilities	cable
Jackson	TN	Jackson Energy Authority	fiber
Johnson City	TN	BVU OptiNet	partial
Lookout Mountain	TN	EPB Fiber Optics	fiber
Morristown	TN	FiberNET	fiber
Nashville	TN	NESNet	dark
Pulaski	TN	PES Energize	fiber
Red Bank	TN	EPB Fiber Optics	fiber
Ridgeside	TN	EPB Fiber Optics	fiber
Signal Mountain	TN	EPB Fiber Optics	fiber
Tullahoma	TN	Tullahoma Utilities Board	fiber
Greenville	TX	GEUS	cable
Lindon	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	partial
Brigham City	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	fiber
Centerville	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA) HQ	fiber
Layton	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	partial
Midvale	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	partial
Murray	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	partial
Orem	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	partial
Payson	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	partial
Perry	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	partial
Spanish Fork	UT	Spanish Fork Community Network	cable
Tremonton	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA)	fiber
West Valley City	UT	Utah Telecommunications Open Infrastructure Agency (UTOPIA) HQ	partial
Abingdon	VA	BVU OptiNet	fiber
Arlington County	VA	ConnectArlington	dark
Atkins	VA	BVU OptiNet	partial
Bluefield	VA	BVU OptiNet	partial

Bristol	VA	BVU OptiNet	fiber
Castlewood	VA	BVU OptiNet	partial
Cedar Bluff	VA	BVU OptiNet	partial
Chillhowie	VA	BVU OptiNet	partial
Clay Pool Hill	VA	BVU OptiNet	partial
Cleveland	VA	BVU OptiNet	partial
Clinchco	VA	BVU OptiNet	partial
Clintwood	VA	BVU OptiNet	partial
Damascus	VA	BVU OptiNet	partial
Danville	VA	nDanville	partial
Duffield	VA	LENOWISCO Planning District Commission	partial
Eastern Virginia	VA	Eastern Shore of Virginia Broadband Authority	question
Emery-Meadow View	VA	BVU OptiNet	partial
Galax	VA	Wired Road	partial
Glad Spring	VA	BVU OptiNet	partial
Grundy	VA	BVU OptiNet	partial
Haysi	VA	BVU OptiNet	partial
Hiltons	VA	BVU OptiNet	fiber
Honaker	VA	BVU OptiNet	partial
Independence	VA	BVU OptiNet	partial
Lebanon	VA	BVU OptiNet	partial
Luray	VA	Page County Broadband Project	partial
Marion	VA	BVU OptiNet	partial
Martinsville	VA	Martinsville Information Network - MINET	partial
Nelson County	VA	Nelson County Virginia Broadband Project	partial
Page County	VA	Page County Broadband Project	partial
Richlands	VA	BVU OptiNet	partial
Rockbridge County	VA	Connect the Dots: Rockbridge Broadband Initiative	partial
Rural Retreat	VA	BVU OptiNet	partial
Saltville	VA	BVU OptiNet	partial
Shenandoah	VA	Page County Broadband Project	partial
St Paul	VA	BVU OptiNet	partial
Stanley	VA	Page County Broadband Project	partial
Staunton	VA	Staunton	dark
Sugar Grove	VA	BVU OptiNet	partial
Tazewell	VA	BVU OptiNet	partial
Troutdale	VA	BVU OptiNet	partial
Vansant	VA	BVU OptiNet	partial

Wytheville	VA	BVU OptiNet	partial
Barnard	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Bethel	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Braintree	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Brookfield	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Hancock	VT	ECFibernet (East Central Vermont Community Fiber Network)	dark
North Randolph	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Pomfret	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Reading	VT	ECFibernet (East Central Vermont Community Fiber Network)	dark
Rochester	VT	ECFibernet (East Central Vermont Community Fiber Network)	dark
Royalton	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Sharon	VT	ECFibernet (East Central Vermont Community Fiber Network)	partial
Stockbridge	VT	ECFibernet (East Central Vermont Community Fiber Network)	dark
Aberdeen	WA	Grays Harbor PUD	partial
Ardenvoir	WA	Chelan PUD	partial
Bauer's Landing	WA	Douglas County Community Network	inet
Benton City	WA	Benton PUD Broadband	partial
Benton County	WA	Benton PUD Broadband	partial
Blewett	WA	Chelan PUD	partial
Bridgeport	WA	Douglas County Community Network	inet
Bridgeport Bar	WA	Douglas County Community Network	inet
Burlington	WA	Mt Vernon Fiber Optic Services	partial
Cashmere	WA	Chelan PUD	fiber
Chelan	WA	Chelan PUD	partial
Chelan County	WA	Chelan PUD	fiber
Cheney	WA	Cheney Fiber Network	partial
Chumstick	WA	Chelan PUD	partial
Clallam County	WA	Clallam PUD	partial
Coulee City	WA	Grant PUD	partial
Coulee Dam	WA	Grant PUD	partial

Desert Aire	WA	Grant PUD	fiber
Desert Canyon	WA	Douglas County Community Network	inet
Douglas County	WA	Douglas County Community Network	inet
Dryden	WA	Chelan PUD	fiber
East Wenatchee	WA	Douglas County Community Network	inet
Edmonds	WA	City of Edmonds	dark
Entiat	WA	Chelan PUD	partial
Ephrata	WA	Grant PUD	partial
Franklin County	WA	Franklin PUD Broadband	partial
Grand Coulee	WA	Grant PUD	fiber
Grant County	WA	Grant PUD	fiber
Hartline	WA	Grant PUD	fiber
Kennewick	WA	Benton PUD Broadband	fiber
Kitsap County	WA	Kitsap PUD	fiber
Leavenworth	WA	Chelan PUD	fiber
Mansfield	WA	Douglas County Community Network	inet
Mason County	WA	Mason County PUD3	partial
Mattawa	WA	Grant PUD	fiber
Meritt	WA	Chelan PUD	partial
Monitor	WA	Chelan PUD	fiber
Moses Lake	WA	Grant PUD	partial
Mt Vernon	WA	Mt Vernon Fiber Optic Services	partial
Newport	WA	Pend Oreille County Public Utility District (PUD) Broadband Network	partial
Okanogan County	WA	Okanogan PUD	fiber
Orondo	WA	Douglas County Community Network	inet
Pacific County	WA	Pacific County PUD#2	partial
Pasco	WA	Franklin PUD Broadband	fiber
Pend Oreille County	WA	Pend Oreille PUD	fiber
Peshastin	WA	Chelan PUD	fiber
Port of Skagit County	WA	Mt Vernon Fiber Optic Services	partial
Prosser	WA	Benton PUD Broadband	fiber
Quincy	WA	Grant PUD	fiber
Royal City	WA	Grant PUD	fiber
Sequim	WA	Clallam PUD	partial
Shelton	WA	Mason County Public Utilities District	partial
Soap Lake	WA	Grant PUD	fiber
Sun Cove	WA	Douglas County Community Network	inet
Tacoma	WA	Click! Network	cable
Warden	WA	Grant PUD	fiber

Waterville	WA	Douglas County Community Network	inet
Wenatchee	WA	Chelan PUD	fiber
Wilson Creek	WA	Grant PUD	fiber
Yodelin	WA	Chelan PUD	partial
Eau Claire	WI	Chippewa Internetworking Consortium (CINC)	inet
Oconto	WI	Oconto Falls Municipal Utilities	cable
Platteville	WI	Chippewa Internetworking Consortium (CINC)	partial
Reedsburg	WI	Reedsburg Utility Commission	fiber
Reedsburg	WI	Reedsburg Utility Commission - rural expansion	partial
Shawano	WI	Shawano Municipal Utilities	fiber
Sun Prairie	WI	Sun Prairie Utilities	partial
Superior	WI	Chippewa Internetworking Consortium (CINC)	partial
Wausau	WI	Chippewa Internetworking Consortium (CINC)	partial
Philippi	WV	Philippi Communications System	fiber
Powell	WY	Powell Fiber Optic Network	fiber

EXHIBIT 23

A Light in Digital Darkness: Public Broadband after Tennessee v. FCC

Mikhail Guttentag[1]

20 YALE J. L. & TECH. 311 (2018)

Ten years ago, the city of Chattanooga, Tennessee built its own high-speed Internet network, and today Chattanooga's publicly owned Internet infrastructure ("public broadband" or "municipal broadband") is faster and more affordable than almost anywhere else in the world. In this Article, I make the case for why other communities currently underserved by private broadband providers should consider building their own high-speed broadband networks and treating Internet as an essential public service akin to water or electricity, and I explore means by which these communities can overcome the legal and political hurdles they may face along the way.

[1] J.D., Yale Law School. My deepest thanks for the guidance of professors Alvin Klevorick, David Schleicher, and Gordon Silverstein; for the feedback and encouragement of Olevia Boykin, Ariel Dobkin, Paul Henderson, Lina Khan, and Theodore Rostow; for the editing of the *Yale Journal of Law and Technology*, particularly editors Anderson Christie, Allison Douglis, and Aislinn Klos; and for Mayor Andy Berke of Chattanooga, Tennessee, who warmly answered a law student's cold e-mail and invited him to check out his city. This Article is dedicated to my former students and coworkers at Heights High School in Houston, Texas, who bring light to darkness, digital and otherwise, and inspire this work. All errors are my own.

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INTRODUCTION: PUBLIC BROADBAND AND PUBLIC POWER

> *"Failure to provide broadband to rural areas of America is a death sentence for those communities. They cannot compete economically without access to broadband."*
>
> —United States Senator Angus King (I-ME)[2]

> *"We see broadband in the 21st century as electricity was in the 20th."*
>
> —Danna Bailey (Vice President, Chattanooga EPB)[3]

Internet can be delivered like other publicly funded services, such as water, electricity, sewers, and roads.[4] To date, Internet provision is left almost entirely to the private sector, leaving many places without affordable or high-speed service. However, there are a growing number of municipalities in the United States who have built their own high-speed Internet networks and offer it like a public utility. More cities should join them.

Many communities currently underserved by Internet providers—rural areas especially—were once underserved by private electricity providers that offered electricity to big cities and wealthy customers but left the rest of the country behind.[5] These communities formed locally owned electric utilities to

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[2] Mal Leary, *Angus King, Senators Want Improved Rural Broadband*, ME. PUB. (July 13, 2016), http://mainepublic.org/post/angus-king-senators-want-improved-rural-broadband [http://perma.cc/HHT5-N77K].

[3] Henry Grabar, *Republicans Are Coming Around to This Public Internet Idea*, SLATE (Sept. 1, 2016, 1:05 PM), http://www.slate.com/blogs/future_tense/2016/09/01/public_broadband_is_a_bipartisan_issue_now.html [http://perma.cc/ML84-6XZA].

[4] *See* Jeff Stricker, Note, *Casting a Wider 'Net: How and Why State Laws Restricting Municipal Broadband Networks Must Be Modified*, 81 GEO. WASH. L. REV. 589, 614 (2013) ("The only unique feature of telecommunications service provision by a government entity as compared to other government-provided services (such as electricity, water, sewers, and roads) is that the telecommunications industry is today predominantly administered by the private sector." (footnote omitted)).

[5] *See* D. Stan O'Loughlin, *Preemption or Bust: Fear and Loathing in the Battle over Broadband*, 28 CARDOZO L. REV. 479, 482-83 (2006) ("Beginning in the 1880s, electric power in the United States was provided primarily by large, private electric companies . . . private power companies did not consider rural electrification to be economically feasible and focused their resources on the more profitable urban market, leaving most of the country's smaller cities and rural areas underserved or totally without access to electricity." (footnotes omitted)).

provide electricity at affordable rates and wider availability than service from private providers.[6] Franklin Delano Roosevelt made public power a central part of his successful 1932 Presidential campaign,[7] and once elected, he created the Tennessee Valley Authority to bring affordable electricity to rural areas.[8] Today, more than two thousand communities in the United States provide their own electricity, including cities like Seattle, San Antonio, and Los Angeles.[9] All told, today more than one in four Americans purchase electricity service from a publicly owned power system or a nonprofit cooperative,[10] and the rest purchase electricity from price-regulated suppliers.

Like electricity in the last century, Americans increasingly see universal, affordable access to broadband Internet as urgent and important for local economies, education, democracy, and good health. A recent study found that nine in ten Americans believe at-home broadband is either "essential" (49%) or "important" (41%), and only one in ten respondents said it was neither.[11] Another poll showed that two-thirds of

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6 *See* David W. Penn, *Competition, the Consumer, and Local Decision Making: Public Power's Important Role*, 10 ELECTRICITY J. 30, 31 (1997) ("Public power utilities are a striking example of the institution of cities themselves—citizens' decisions as to which services they choose to have their local government provide.").

7 *See, e.g.*, Franklin D. Roosevelt, Campaign Address in Portland, Oregon on Public Utilities and the Development of Hydro-Electric Power (Sept. 21, 1932), http://www.presidency.ucsb.edu/ws/?pid=88390 [http://perma.cc/SU74-7BYA] ("Electricity is no longer a luxury. It is a definite necessity. It lights our homes, our places of work and our streets. It turns the wheels of most of our transportation and our factories. In our homes it serves not only for light, but it can become the willing servant of the family in countless ways. It can relieve the drudgery of the housewife and lift the great burden off the shoulders of the hardworking farmer. I say 'can become' because we are most certainly backward in the use of electricity in our American homes and on our farms . . . . What prevents our American people from taking full advantage of this great economic and human agency? The answer is simple. It is not because we lack undeveloped water power or unclaimed supplies of coal and oil. The reason is that we cannot take advantage of our own possibilities. The reason is frankly and definitely that many selfish interests in control of light and power industries have not been sufficiently far-sighted to establish rates low enough to encourage widespread public use.").

8 Adam Cohen, *Roosevelt Understood the Power of a Public Option*, N.Y. TIMES (Nov. 30, 2009), http://www.nytimes.com/2009/12/01/opinion/01Tue4.html [http://perma.cc/JAD8-3Z6T].

9 SUSAN CRAWFORD, CAPTIVE AUDIENCE: THE TELECOM INDUSTRY AND MONOPOLY POWER IN THE NEW GILDED AGE 258 (2013).

10 *America's Electric Cooperatives: 2017 Fact Sheet*, NAT'L RURAL ELEC. COOP. ASS'N (Jan. 31, 2017), http://www.electric.coop/electric-cooperative-fact-sheet [http://perma.cc/3Z9Z-YZ7X].

11 *See* Kenneth Olmstead et al., *Americans Have Mixed Views on Policies Encouraging Broadband Adoption*, FACT TANK (Apr. 10, 2017), http://www.pewresearch.org/fact-tank/2017/04/10/americans-have-mixed-views-on-policies-encouraging-broadband-adoption/ [http://perma.cc/PP97-XB3B].

Americans believe that not having at-home broadband "would be a *major disadvantage* to finding a job, getting health information or accessing other key information," a nearly ten-percent increase over the previous five years.[12]

And yet, Internet access in much of America is dismal. Fifty percent of American households have access to only one Internet provider, with no competition to drive faster or more affordable service, and an additional ten percent of households (including nearly forty percent of households in rural areas) have no access to a broadband Internet provider[13] at all.[14] America's dominant Internet Service Providers (ISPs)—such as Comcast, AT&T and Time Warner Cable—all rank among the country's least popular companies,[15] and with good reason: on average, United States residents pay more money for slower Internet than do people in most countries in the developed world.[16]

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12 JOHN B. HORRIGAN & MAEVE DUGGAN, PEW RES. CTR., HOME BROADBAND 2015 4 (2015), http://www.pewinternet.org/files/2015/12/Broadband-adoption-full.pdf [http://perma.cc/AL48-ZQHG].

13 This is under the FCC's definition of broadband Internet as offering a download speed of twenty-five megabits per second and an upload speed of three megabits per second. *See* FED. COMMC'NS COMM'N, 2016 BROADBAND PROGRESS REPORT 3 (2016), http://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1.pdf [http://perma.cc/FN3B-6P2C].

14 *Id. at* 38 tbl.6.

15 Karl Bode, *Broadband ISPs, CableCos Still Least Liked of Any US Industry*, DSLREPORTS (May 27, 2016, 9:04 PM), http://www.dslreports.com/shownews/Broadband-ISPs-CableCos-Still-Least-Liked-of-Any-US-Industry-137051 [http://perma.cc/5R3A-YERM] ("[B]roadband ISPs and cable companies continue to have the worst customer satisfaction ratings of any industry in the United States.").

16 *See* EXEC. OFFICE OF THE PRESIDENT, COMMUNITY-BASED BROADBAND SOLUTIONS: THE BENEFITS OF COMPETITION AND CHOICE FOR COMMUNITY DEVELOPMENT AND HIGH SPEED INTERNET ACCESS 10 (2015), http://obamawhitehouse.archives.gov/sites/default/files/docs/community-based_broadband_report_by_executive_office_of_the_president.pdf [http://perma.cc/6ZE4-75EU] (noting that when twenty-four United States and international cities were compared, "the median monthly price offered at each Internet speed level in the U.S. was higher than international peers, often by 50 percent or more."); *see also* John Aziz, *Why Is American Internet so Slow?*, WEEK (Mar. 5, 2014), http://theweek.com/articles/449919/why-american-internet-slow [http://perma.cc/5LHT-JYE8] ("According to a recent study by Ookla Speedtest, the U.S. ranks a shocking 31st in the world in terms of average download speeds."); Hannah Yi, *This Is How Internet Speed and Price in the U.S. Compares to the Rest of the World*, PBS NEWSHOUR (Apr. 26, 2015, 12:54 PM), http://www.pbs.org/newshour/world/internet-u-s-compare-globally-hint-slower-expensive [http://perma.cc/EU83-V8MA] ("Even though the Internet was invented in the United States, Americans pay the most in the world for broadband access. And it's not exactly blazing fast. For an Internet connection of 25 megabits per second, New Yorkers pay about $55—nearly double that of what residents in London, Seoul, and Bucharest, Romania, pay. And residents in cities such as Hong Kong, Seoul, Tokyo and Paris get connections nearly eight times faster.").

Although federal law requires every American be given access to phone service, along with other services like water and electricity, there is no such law ensuring universal access to broadband.[17] Fully one-third of Americans do not subscribe to at-home broadband access, and, of non-subscribers, the overwhelming plurality cite cost as the limiting factor.[18] Because most Americans cannot count on their local government to provide broadband service or regulate prices, they are left with "the worst of both worlds in the broadband industry: no competition and no regulation."[19]

In response to America's lagging Internet infrastructure, some communities and lawmakers have begun to form public and public-private partnerships to provide Internet service as a utility service, delivering Internet access to residents at faster speeds and lower costs than before.[20]

Recent polling suggests that these efforts, or at least the right to undertake them, enjoy overwhelming bipartisan support. Seven in ten Americans believe local governments should have the right to build their own broadband networks, including approximately two-thirds of Republicans and three-quarters of Democrats.[21] In 2015, the White House issued a report trumpeting these publicly owned broadband networks, describing affordable, high-speed Internet access as "critical to U.S. economic growth and competitiveness."[22] There are a growing number of successful publicly owned high-speed Internet networks in communities nationwide.[23]

One example of a successful publicly owned Internet network lies in a small city in southeastern Tennessee. The city of Chattanooga quietly launched its publicly owned high-speed Internet network in 2010, and today its city-run Internet is faster and more affordable at its speed than almost any other

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17 *See* CRAWFORD, *supra* note 9, at 12 ("When the telephone was the dominant medium of exchange, U.S. Law required that every American have access to a phone along with other utility services such as water and electricity.").

18 HORRIGAN & DUGGAN, *supra* note 12, at 4.

19 CRAWFORD, *supra* note 9, at 270.

20 *See, e.g.*, HAROLD FELD ET AL., MEDIA ACCESS PROJECT, CONNECTING THE PUBLIC: THE TRUTH ABOUT MUNICIPAL BROADBAND 4 (2005), http://www.freepress.net/sites/default/files/fp-legacy/mb_white_paper.pdf [http://perma.cc/W3NN-8SYX] ("[L]ocal communities are finding they can get better service for less money if they do it themselves."); *see also* EXEC. OFFICE OF THE PRESIDENT, *supra* note 16, at 18 ("[Public broadband networks] in places like Chattanooga, TN, and Lafayette, LA . . . have Internet speeds up to 100 times faster than the national average and deliver it at an affordable price.").

21 *See* Olmstead et al., *supra* note 11.

22 EXEC. OFFICE OF THE PRESIDENT, *supra* note 16, at 3.

23 *See, e.g.*, *Municipal FTTH Networks*, COMMUNITY NETWORKS (Feb. 6, 2017), http://muninetworks.org/content/municipal-ftth-networks [http://perma.cc/Y7NZ-RNGT].

network in the world.[24] Upgrading Chattanooga's grid and network cost $330 million,[25] an investment that appears to be paying off handsomely: in its first five years it brought the city an estimated $865 million in economic and social benefits, including thousands of new jobs.[26]

Given Chattanooga's success, one might expect Tennessee and other states to seek to replicate these networks in other cities. Depending on the community's goals, it need not even operate or manage the network it builds. A single municipal network could host a large number of competing ISPs, if it finances the initial construction of the network (connecting high-speed fiber-optic cables to homes, via its electric grid or a similar network), and then leases those connections to competing ISPs.[27] This model is like an airport: the community finances the network (the airport), then leases the airport's connections (gates) to private ISPs, who compete with each other over providing service to customers.

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[24] Edward Wyatt, *Fast Internet Is Chattanooga's New Locomotive*, N.Y. TIMES (Feb. 3, 2014), https://www.nytimes.com/2014/02/04/technology/fast-internet-service-speeds-business-development-in-chattanooga.html [http://perma.cc/EKP7-ZRHE] ("'Gig City,' as Chattanooga is sometimes called, has what city officials and analysts say was the first and fastest—and now one of the least expensive—high-speed Internet services in the United States. For less than $70 a month, consumers enjoy an ultrahigh-speed fiber-optic connection that transfers data at one gigabit per second. That is 50 times the average speed for homes in the rest of the country, and just as rapid as service in Hong Kong, which has the fastest Internet in the world.").

[25] Chattanooga's city-owned utility, EPB (formerly "Electric Power Board of Chattanooga"), covered the $330 million cost in two ways: a $111 million federal stimulus grant, and $219 million in borrowed bonds. Notably, the savings produced from the smart grid, as well as the revenue from Internet connections, more than cover the grid's capital and operating cost. *See* DAVID TALBOT & MARIA PAZ-CANALES, MUN. FIBER PROJECT, SMART GRID PAYBACKS: THE CHATTANOOGA EXAMPLE 1 (2017), http://dash.harvard.edu/bitstream/handle/1/30201056/2017-02-06_chatanooga.pdf [http://perma.cc/KMA9-DTUN] ("Data show that the savings produced by the smart grid, plus revenue from access fees paid by the utility's Internet access business, more than cover the capital and operating costs of the smart grid. What's more, we estimate this would still be true even if the utility hadn't received a $111.6 million federal stimulus grant, and instead borrowed the extra amount.").

[26] Dave Flessner, *EPB Fiber Optics Gives Chattanooga a Boost*, TIMES FREE PRESS (Sept. 16, 2015), http://www.timesfreepress.com/news/business/aroundregion/story/2015/sep/16/epb-fiber-optics-gives-city-boost/325362 [http://perma.cc/38RK-683H] ("An EPB-commissioned study by UTC's Department of Finance estimates EPB's smart grid and fiber optic network has helped add at least 2,800 jobs and pumped an extra $865.3 million into the local economy over the past four years by cutting power outages, improving data connections, lowering power bills and attracting businesses to the self-described 'Gig City.'").

[27] *See* Susan Crawford, *Google Fiber Was Doomed from the Start,* WIRED (Mar. 14, 2017), http://www.wired.com/2017/03/google-fiber-was-doomed-from-the-start/ [http://perma.cc/MYC2-Z53S] (describing what this model might look like).

Instead, Tennessee and nineteen other states have made it harder, not easier, to build local networks like the one in Chattanooga. Those state legislatures passed laws that ban or restrict their cities' abilities to provide community-financed Internet service, commonly referred to as "public broadband" or "municipal broadband." [28] The two phrases are used interchangeably here, since "public broadband" need not be administered by a municipality.[29]

Some cities hoped that the FCC would help them overcome these restrictions, since Congress in 1996 gave the FCC authority to preempt state laws that restrict "any entity" from providing broadband. However, the Supreme Court ruled in 2004 that Congress had not made it sufficiently clear that a municipality could be an "entity" providing service,[30] effectively barring municipalities in those states from providing broadband. Over a decade later, the FCC tried a different way to help cities preempt state-level restrictions on municipal broadband, but in the August 2016 decision *Tennessee v. FCC*, a federal court held that the FCC lacked the authority to do that as well.[31]

These two decisions have left a number of cities that might benefit most from municipal broadband without the means to provide it, unless they can convince state legislatures or Congress to overturn these restrictive state laws. Overturning the laws would require state legislatures to buck the deep-pocketed ISP lobbyists who pushed states to enact the restrictions in the first place, which complicates these efforts.

In this Article, I examine the state of broadband in America, including the lack of competition and drivers of digital divides. I argue that broadband could be offered as a public utility service akin to water or electricity, and make the case that more communities should follow the lead of

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28 LENNARD G. KRUGER & ANGELE A. GILROY, CONG. RESEARCH SERV., MUNICIPAL BROADBAND: BACKGROUND AND POLICY DEBATE 13 (2016), http://fas.org/sgp/crs/misc/R44080.pdf [http://perma.cc/X4NM-CRHH]; *see also* Zaid Jilani, *Killing Net Neutrality Has Brought on a New Call for Public Broadband*, INTERCEPT (Dec. 15, 2017, 5:17 PM) http://theintercept.com/2017/12/15/fcc-net-neutrality-public-broadband-seattle/ [http://perma.cc/EDV4-ZBBK].

29 One reason to favor "public broadband" instead of the term "municipal broadband" is that there is less risk that the term will lose its meaning as referring only to networks with some form of public funding. For example, the FCC's Broadband Deployment Advisory Committee recently used the phrase "municipal broadband" to also refer to entirely privately owned and operated networks, potentially confusing the term. *See* BROADBAND DEV. ADVISORY COMM., FED. COMMC'NS COMM'N, STATE CODE FOR ACCELERATING BROADBAND INFRASTRUCTURE DEPLOYMENT AND INVESTMENT 50 (2018), http://www.fcc.gov/sites/default/files/bdac-modelcode-012018.pdf [http://perma.cc/43YA-57E8].

30 *See infra* Part IV.

31 *See* Tennessee v. FCC, 832 F.3d 597 (6th Cir. 2016); *infra* Part V.

Chattanooga, and others, and build their own high-speed broadband networks. I look at how the Supreme Court's 2004 *Missouri Municipal League* decision emboldened ISPs to lobby states to restrict the growth of public broadband, and revisit Justice Stevens' lone dissent, a position which today looks increasingly prescient. The specter of *Missouri Municipal League* haunts efforts to build publicly owned broadband, and in light of the *Tennessee v. FCC* decision, I argue that *Missouri Municipal League* is due for review and reconsideration.

I conclude by arguing that advocates for public broadband should engage on all fronts to lift unnecessary restrictions on the public provision of broadband. Like electricity, broadband has become an essential service, and no community should be left in digital darkness.

I. THE COSTS OF LIMITING CITIES TO PRIVATE BROADBAND

> *"Here in Seattle, we don't rely on for-profit companies to provide our water or electricity. The Internet shouldn't be any different."*
>
> —Upgrade Seattle[32]

Like roads, broadband Internet is essential infrastructure for the modern economy.[33] Without utility-style regulation or public provision in areas where the private market for broadband has failed, communities will continue to fall behind.

Like electricity in the late nineteenth century, the provision of Internet service today largely follows the profit motives of private providers.[34] These profit motives disfavor providing affordable high-speed service to less profitable poor or rural populations when compared to denser, higher-income neighborhoods.[35] Some scholars have argued that these market

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32 *See* UPGRADE SEATTLE, http://www.upgradeseattle.com [http://perma.cc/YB83-K6UA].

33 PENNY PRITZKER & TOM VILSAK, U.S. DEP'T OF AGRIC. & U.S. DEP'T OF COMMERCE, BROADBAND OPPORTUNITY COUNCIL REPORT AND RECOMMENDATIONS 12 (2015), http://obamawhitehouse.archives.gov/sites/default/files/broadband_opportunity_council_report_final.pdf [http://perma.cc/UT6S-HZP3] ("Broadband has steadily shifted from an optional amenity to a core utility for households, businesses and community institutions. Today, broadband is taking its place alongside water, sewer and electricity as essential infrastructure for communities.").

34 *See, e.g.*, Stricker, *supra* note 4, at 620 ("Broadband deployment is analogous to the deployment of electricity in the United States in the early twentieth century. In the 1880s, most electricity in the United States was supplied by large, private companies that did not view extending service to less densely populated areas as profitable or feasible and thus chose to ignore them in favor of urban markets." (footnote omitted)).

35 The basic thinking behind this approach is that in most cases, the more

structures bolster the case for treating broadband Internet, at least in areas unserved by market competition, as a utility service akin to electricity or water.[36] Nonetheless, most communities have not extended this logic to broadband, and the overwhelming majority of communities rely on market competition incentives to drive broadband deployment and pricing. It takes just a cursory look to see why this approach has failed.

A. The Lack of Competition in the Last Mile

The theory that a free market will deliver competition in broadband provision is based on the idea that multiple ISPs will compete in the "last mile" through which a broadband connection travels. The last mile is the part of the Internet connection with which most consumers are familiar: when a consumer purchases Internet service from an ISP, that consumer is purchasing a last-mile Internet connection.[37] In other words, the last mile is "the part of the data's voyage that takes it from local utility poles or underground tubes, into your house, and through the cable that plugs into your [Internet router]."[38]

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customers a network serves, the more likely that network will recoup the initial investment. It is more expensive to serve remote areas, and because those areas are more sparsely populated, recouping the investment on the same timeframe as a more densely populated area (ceteris paribus) would require charging a greater monthly fee to remote residents, which could slow the rate of broadband adoption and further hinder investment recovery.

[36] *See* CRAWFORD, *supra* note 9, at 17 ("Utilities like water and electricity are natural monopoly services. So is telecommunications. It costs a great deal to set up a telecommunications system (and the U.S. government has helped immensely along the way by handing out franchises and access to rights-of-way to the corporate ancestors of today's giants) but very little to add one more revenue-producing customer, and at this point competitors to incumbent cable providers survive only by the sufferance of the local monopolist. But Americans persist in hoping for competition to emerge.").

[37] *See* Myles Roberts, *Opening the Last Mile to Competition*, 4 VA. SPORTS & ENT. L.J. 309, 310-11 (2005) ("The Federal Communications Commission uses a road model to describe the national communications network to those unfamiliar with the technology. In the road model, the backbone of the network is equivalent to a multi-lane interstate highway; the middle mile of the network is a divided highway; the last mile is a local road; and the last 100 feet of the network is a driveway. The connection points along the network are equivalent to the intersections, on-ramps, and interchanges of the road system . . . . Both telecom and cable services are offered over separate last-mile facilities. On the telecom network, the signal enters the last mile from the middle-mile facilities at the collocation point where the signal is separated from other signals. From the collocation point, usually a switch located inside the carrier's central office, the signal travels . . . through the last 100 feet to the customer's premises.").

[38] Adam Clark Estes, *Why America's Internet Is So Shitty and Slow*, GIZMODO (Mar. 10, 2015, 3:05 PM), http://gizmodo.com/why-americas-internet-is-so-shitty-and-slow-1686173744 [http://perma.cc/SF8R-GHBM].

The high cost of last-mile infrastructure is a huge impediment for would-be market entrants and an equally large advantage for incumbents. Nearly all the costs of broadband provision lie in up-front capital expenditure in financing and constructing the initial last-mile connections.[39] Once these costs are paid, providing the service is relatively inexpensive, and the cost of adding additional customers is low. The up-front capital necessary to provide service deters new investment in broadband provision and gives incumbent providers little incentive to improve service.

Not long ago, the market for Internet service was competitive. It was competitive because it had rules. These regulations—the vestiges of the breakup of telephone monopolies—kept prices low and ensured that providers would have a chance to compete with one another. Politicians repealed these rules, and in the process cost the country its competitive market for Internet service. In understanding how these repealed rules once created competitive markets, we can better understand how to design and deploy new rules in the future that bring those markets back.

1. The Internet's Brief Competitive Beginning

The early market for Internet service was competitive. By 1998, nine in ten Americans could choose to purchase dial-up Internet service from *seven or more* ISPs,[40] a figure unimaginable today. Today, six in ten Americans have no choice in their broadband Internet provider: either there is only one provider or none at all.[41] The market was competitive because of regulation held over from the twentieth-century breakup of "Mama Bell," a telecommunications monopoly. When regulations were lifted, competition collapsed.

One major condition of the "Mama Bell" breakup was access requirements, which forced incumbent telephone operators to

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39 *See, e.g.*, Stricker, *supra* note 4, at 596 ("Put simply, it is quite expensive to build out a wired broadband network. The nature of wired broadband deployment requires large up-front costs of construction, essentially capital expenditures, as broadband connections require running wires to customers' homes or businesses. However, once these up-front deployment costs are paid, the network is relatively cheap to operate. Thus private ISPs price their service above transmission costs so as to recoup their capital outlay." (footnotes omitted)).

40 DEREK TURNER, FREEPRESS, DISMANTLING DIGITAL DEREGULATION: TOWARD A NATIONAL BROADBAND STRATEGY 7 & n.6 (2009), http://web.archive.org/web/20140919192630/https://www.freepress.net/sites/default/files/fp-legacy/Dismantling_Digital_Deregulation.pdf [http://perma.cc/M2PN-Y94X] ("Dial-up Internet went from a novelty to being available in almost every American household. Even those in remote rural areas had access to multiple, highly competitive Internet Service Providers (ISPs) by the end of the [1990s].").

41 *See* FED. COMMC'NS COMM'N, *supra* note 13, at 38.

lease access to their networks to competitors at reasonable rates. New ISPs, such as AOL and Earthlink, competed by offering "dial-up" Internet service through incumbent telephone companies' last-mile copper telephone networks. But the competitive market did not last long, in large part because cable television providers did not have to follow these same rules.

Cable television companies like Comcast, Time Warner Cable, and so on also operated services—cable television and telephone—in the last mile. They began offering broadband, too, and with a big advantage over dial-up providers: their cables could carry Internet much faster than traditional telephone lines. Moreover, the FCC exempted these cable companies from the "common carriage" requirements imposed on telephone companies,[42] meaning that any ISP hoping to compete at those speeds would have to build entirely new lines to connect their service to homes.[43]

The FCC's "common carriage" access requirements on telephone companies worked so well that the agency should have recognized the obvious solution to cable's lack of competition: to extend those same access requirement rules to cable Internet providers. Instead, the George W. Bush-era FCC did the exact opposite. It looked at the "asymmetric regulation" between cable and telephone companies and decided to deregulate both. It exempted both cable and telephone companies from common-carriage rules, moving Internet provision away from a competitive market and ushering in the monopolistic and oligopolistic markets we see today.

The decision to deregulate telephone companies away from common-carriage regulations effectively killed the competitive dial-up market.[44] Telephone companies behaved as any

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42 TURNER, *supra* note 40, at 9.

43 Few would imagine, let alone invest in, a new company coming into their city and building a parallel competitive sewage system to compete with their existing provider. And yet rhetoric surrounding competition in the provision of broadband service often imagines several entrants engaging in initial construction and duplication of a competitor's existing Internet service. *See* Hannibal Travis, *Wi-Fi Everywhere: Universal Broadband Access as Antitrust and Telecommunications Policy*, 55 AM. U. L. REV. 1697, 1716 (2006); *see also* Roberts, *supra* note 37, at 311 ("Just as it is cost-prohibitive to build two roads to the same driveway, it is cost-prohibitive to build additional communications networks along the last mile. As a result, the service providers who control the last mile are in a position to control consumers' service choices and the prices of those services.").

44 *See* TURNER, *supra* note 40, at 42 ("The impetus behind [FCC Chairman Kevin Martin]'s desire to treat all broadband services the same was the perceived inefficiencies and market perversions stemming from 'asymmetric regulation.' The thinking was that since cable modem services were not subject to Title II or *Computer Inquiry* regulations, then neither should any other Internet access services, because to do so would create market inefficiencies. Never mind the fact that it was the FCC itself that created this

competitive business would, maximizing profit amidst the newfound lack of price constraints. They favored their own Digital Subscriber Line ("DSL") Internet service, and denied access or set extremely high prices for any would-be competitive ISPs.[45]

The FCC argued at the time that deregulating all Internet services would increase competition.[46] Instead, competition drastically decreased.[47]

Without the FCC's common-carriage regulations, AOL and other would-be providers could no longer lease existing networks to compete with incumbent companies, and few could afford the costs of building new last-mile infrastructure. One newspaper's account reflected a nationwide experience: "The teeming ranks of ISPs offering dial-up service were replaced in the typical residential neighborhood by a broadband duopoly consisting of one cable operator selling cable modem service and one telephone company selling DSL."[48]

The startup cost to build new networks and offer service was even harder to justify and recoup in poorer or less densely populated areas, so the new Internet providers that did emerge tended to concentrate in wealthier areas already served by broadband providers.[49] Left alone, these market forces laid the groundwork for America's present digital divides.

B. The Major Drivers of Digital Divides

The failure to ensure universal, affordable broadband

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problem in the first place via its decisions regarding cable modem service.").

45 *See id.* at 9.

46 *See, e.g.*, FED. COMMC'NS COMM'N, CHAIRMAN KEVIN J. MARTIN COMMENTS ON ADOPTION OF WIRELINE BROADBAND INTERNET ACCESS ORDER, 3-4 (Aug. 5, 2005), http://transition.fcc.gov/meetings/080505/sharing.pdf [https://perma.cc/2FBW-22H8] ("The Order that we adopt today . . . ends the regulatory inequities that currently exist between cable and telephone companies in their provision of broadband Internet services . . . . I believe that, with the actions we take today, consumers will reap the benefits of increased Internet access competition and enjoy innovative high-speed services at lower prices.").

47 *See* Olivier Sylvain, *Broadband Localism*, 73 OHIO ST. L.J. 795, 837 (2012) ("The vast majority of residents obtain Internet access from one of just two providers in their local area: an effective duopoly in communities across the country controlled by the local incumbent cable provider and the incumbent telephone operator.").

48 Editorial, *Keeping Consumers, Not ISPs, in Control of the Internet*, L.A. TIMES (Dec. 4, 2015) http://www.latimes.com/opinion/editorials/la-ed-net-neutrality-20151204-story.html [http://perma.cc/B2NA-ZSRK].

49 This inefficient allocation of new broadband competition towards well-served areas is another compelling reason for why poorer and/or rural municipalities might consider building municipal broadband networks. *See* Sylvain, *supra* note 47, at 836 ("One of the chief and guiding reasons for municipal broadband is the failure of private providers to deliver adequate service to poorer and lower density areas.").

service created "digital divides" that today leave one-third of Americans without a subscription to at-home broadband Internet service.[50] Like electricity providers of old, unbound ISPs followed free market logic, serving neighborhoods that could pay the most or were cheapest to connect. Thus, the proportion of populations without access to broadband Internet is highest in counties with the lowest median household incomes, lowest population densities, highest rural population rates, and highest poverty rates.[51]

The primary factors driving digital divides are price and supply of affordable service, not lack of demand. Among non-broadband adopters, price sensitivity is "greatest among those who are most likely to see the advantages of a home broadband subscription"[52]—meaning that households who would likely see benefits from broadband are priced out of service. Particularly in poor areas and communities of color, non-subscribers would "overwhelmingly subscribe if home access were more affordable." [53] In other words, "[t]he adoption gap is an affordability gap."[54]

In American public schools, digital divides exacerbate educational inequities.[55] Just three percent of teachers of low-

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50 HORRIGAN & DUGGAN, *supra* note 12, at 2.

51 FED. COMMC'NS COMM'N, *supra* note 13, at 42 tbl.9; *see also* Stricker, *supra* note 4, at 596 ("Internet Service Providers ('ISPs') are reluctant to enter more remote or less populated markets . . . . From a business standpoint, this sort of capital expenditure is more easily justified in densely populated areas, as the more densely populated an area is, the more customers there are within range of the network and available to pay for it. Consequently, major metropolitan areas tend to have multiple private ISPs offering broadband service, because ISPs can more quickly recover their fixed costs of construction from the larger customer base.").

52 HORRIGAN & DUGGAN, *supra* note 12, at 4 ("Non-broadband adopters who view a lack of home service as a major disadvantage are also more likely to cite the monthly cost of broadband as the primary reason they do not subscribe.").

53 *See* Letter from Derek Turner, Research Dir., Free Press, et al. to Ajit Pai, Chairman, Fed. Commc'ns Comm'n et al. 4-5 (Jan. 31, 2017), http://www.freepress.net/sites/default/files/legacy-policy/free_press_digital_divide_fcc_letter_final.pdf [http://perma.cc/V2T2-CCGC] ("Let us be clear: the lingering narrative that non-adopters simply do not want to go online is dead wrong, based on usage data and survey responses for families living in marginalized communities. As our research shows, low-income families and people of color lacking home access have a very high demand for it. Non-adopters in these demographic groups take extraordinary measures to go online elsewhere, and would overwhelmingly subscribe if home access were more affordable." (footnotes omitted)).

54 *Id* at 5.

55 In addition to survey data, I will state my own experience from four years as a high school teacher at a school serving students primarily from low-income households, from which the importance of at-home broadband access in achieving greater educational equity became evident. Assigning research papers that would develop online research and word processing skills requires students to either have at-home broadband access, or else live near enough to or have transportation to another source with broadband and a

income students reported that all or almost all of their students had sufficient access to digital tools they needed to complete school assignments at home, and fifty-six percent said digital tools are widening the gap between their most and least successful students.[56] Seven in ten teachers report assigning homework that requires access to broadband,[57] but "low-income homes with children are four times more likely to be without [at-home] broadband than their middle or upper-income counterparts."[58] These discrepancies help explain why over eighty percent of teachers either agree or strongly agree with the proposition that digital tools are leading to greater disparities between affluent and disadvantaged schools and school districts.[59]

In the context of local business development, comparing broadband to electricity is also instructive. Communities would struggle to attract and keep businesses if they could not offer businesses electricity at affordable rates, since electricity has become essential to the functioning of nearly every modern business. Affordable, high-speed broadband has become essential for many businesses too. If someone in a community without affordable high-speed broadband hopes to start a web-based business similar to Dropbox or Netflix, they almost certainly would have to build that business somewhere else.[60]

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computer, such as a local library. Many students in low-income households also have other responsibilities (taking care of family, after-school jobs, and so on) that made it especially difficult for those without at-home broadband to complete those assignments. Without these assignments, however, the same students are denied the opportunity to develop the skills that help prepare them for university-level success, where Internet-based research and writing skills are expected prerequisites.

56 KRISTEN PURCELL ET AL., PEW RESEARCH CTR., HOW TEACHERS ARE USING TECHNOLOGY AT HOME AND IN THEIR CLASSROOMS 44-45 (Feb. 28, 2013), http://www.pewinternet.org/files/old-media//Files/Reports/2013/PIP_TeachersandTechnologywithmethodology_PDF.pdf. [http://perma.cc/88LQ-5KPN].

57 Jessica Rosenworcel, *How to Close the 'Homework Gap'*, MIAMI HERALD (Dec. 5, 2014, 6:06 PM), http://www.miamiherald.com/opinion/op-ed/article4300806.html [http://perma.cc/3G3J-EZ3Y].

58 John B. Horrigan, *The Numbers Behind the Broadband 'Homework Gap*,' FACT TANK (Apr. 20, 2015), http://www.pewresearch.org/fact-tank/2015/04/20/the-numbers-behind-the-broadband-homework-gap ("[L]owest-income households have the lowest home broadband subscription rates. Roughly one-third (31.4%) of households whose incomes fall below $50,000 and with children ages 6 to 17 do not have a high-speed internet connection at home. This low-income group makes up about 40% of all families with school-age children in the United States . . . . By comparison, only 8.4% of households with annual incomes over $50,000 lack a broadband internet connection at home.").

59 PURCELL ET AL., *supra* note 56, at 4. The feeling that digital tools widen disparities is most strongly felt among teachers serving either low-income or high-income student groups. *Id*. at 47.

60 *See, e.g.*, Maria Sudekum, *Google's Ultra-Fast Internet Creates 'Silicon Prairie'*, PORTLAND PRESS HERALD (Jan. 14, 2013),

The lack of broadband bears repeating: nearly four in ten Americans living in rural areas, and one in ten Americans overall, currently have no option—at any price—to subscribe to broadband access where they live.[61]

These digital divides—most pronounced among poor and rural communities, tribal areas, and senior citizens—represent a challenge and an opportunity for state and local governments hoping to bring residents and local businesses online to reap the numerous expected educational, economic, and social benefits of broadband access.[62]

Many communities who are still waiting for market competition to deliver universal, affordable broadband access should consider whether that approach has failed. The need for that service is urgent. To bridge these digital divides and deliver affordable, high-speed broadband, those communities should take a closer look at networks in cities like Chattanooga, Tennessee, as well as the nearly one hundred other local governments that provide public broadband.[63]

II. THE PUBLIC BROADBAND ALTERNATIVE

> *"I might call the right of people to own and operate their own utility something like this: a 'birch rod' in the cupboard to be taken out and used only when the 'child' gets beyond the point where a mere scolding does no good."*

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http://www.pressherald.com/2013/01/14/googles-ultra-fast-internet-creates-silicon-prairie/ [http://perma.cc/Z8XM-Y2PC] ("The advantage [of high-speed Internet] for startups is simple: A fast Internet pipe makes it easier to handle large files and eliminates buffering problems that plague online video, live conferencing and other network-intensive tasks.").

61 FED. COMMC'NS COMM'N, *supra* note 13, at 38 tbl.6.

62 *See, e.g.*, Stricker, *supra* note 4, at 595-96 ("The benefits of high-speed Internet to both ordinary citizens and businesses are numerous and linked directly to broadband's greater speeds. For individuals, broadband performs critical functions such as assisting people in finding employment and facilitating communication and education in addition to offering great convenience and entertainment value. Broadband also gives businesses the ability to expand their operations globally, find more and better customers and suppliers, streamline operations, advertise more efficiently, and recruit employees. The result is a substantial net benefit to the community, as communities with high-quality broadband networks are more likely to attract and retain businesses, offer greater educational opportunities, provide government services more efficiently, and attract tourists. Speed is key, as slower, non-broadband Internet connections render most of these benefits unobtainable either because of the time required to access the benefits or because the Internet products and services cannot be transmitted to users lacking broadband access.").

63 *Community Broadband Networks*, INST. FOR LOC. SELF-RELIANCE (Jan. 2015), http://ilsr.org/wp-content/uploads/2015/02/cbbmap-fact-sheet.pdf [http://perma.cc/E2K8-6QPQ].

—Franklin D. Roosevelt[64]

To be clear: I do not argue that every community should, *per se,* build and manage a public broadband network.

First, the circumstances of any particular community should drive any decision about how it chooses to spend its funds. A community satisfied with its Internet service may rightfully decide not to spend public money on a broadband network.

Second, there is, of yet, no single model for a public broadband network, so such an argument would be insufficiently precise.[65] Some models involve full *public ownership* (where local governments build, finance, and operate the broadband network); others take the form of *public-private partnerships* (these come in many varieties, including when a local government builds the network but leases operating rights among several firms); still others experiment with *cooperative models* where every subscriber becomes a member-owner of the cooperative that owns the network,[66] and which, like rural electric and telephone cooperatives, may qualify for federal loans and grants from the U.S. Department of Agriculture.[67] Beyond different network models, services offered may also vary. Some municipalities provide phone service; others bundle Internet with cable television, run alongside electric grids, or extend service to nearby municipalities as well.[68]

Most importantly, particular communities' needs vary from one to the next, and it is highly unlikely that there is a single

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64 Roosevelt, *supra* note 7.

65 The phrase "municipal broadband" can have several meanings, but all should include at least some form of public ownership of the network. *See* KRUGER & GILROY, *supra* note 28, at 1 ("Municipal broadband (also sometimes referred to as 'community broadband') is a somewhat amorphous term that can signify many different ways that a local government might participate—either directly or indirectly—in the provision of broadband service to the local community. Municipal broadband models can include public ownership, public-private ownership, and a cooperative model."). *But see supra* note 29 (describing how a recent FCC working group's draft model code used "municipal broadband" to refer to private networks as well, adding confusion to the meaning of the term).

66 *See, e.g.*, SCOTT CARLSON & CHRISTOPHER MITCHELL, INST. FOR LOC. SELF-RELIANCE, RS FIBER: FERTILE FIELDS FOR NEW RURAL INTERNET COOPERATIVE 10 (Apr. 2016), http://ilsr.org/wp-content/uploads/downloads/2016/05/RS-Fiber-Report-2016.pdf [http://perma.cc/HHB9-T7VJ] ("Co-ops are self-governing, member-owned associations . . . . Anyone who takes services from RS Fiber is a member of the cooperative and can vote at its annual meeting. The co-op's structure allows the network's supporters to raise equity because non-patron members (i.e. equity investors) can participate in its ownership.").

67 *See id.* at 15, 17.

68 *See* KRUGER & GILROY, *supra* note 28, at 2.

model of broadband provision that most effectively fits all their varied needs.[69]

For these reasons, it would make little sense to argue for publicly owned broadband *per se*. Even advocates for publicly owned electric utilities like Franklin D. Roosevelt did not favor that model in all instances.[70] Instead, in this section I aim to: (a) "normalize" the idea of public broadband distribution in context alongside other utilities and city services provided by public or nonprofit providers; (b) identify where municipalities ill-served by private broadband providers might benefit from some form of public broadband project; and (c) explain the hurdles a municipality hoping to build a broadband network may first need to overcome to do so.

A. Envisioning Public Broadband as a Local Utility

Local governments have political, economic and social interests in ensuring that everyone has affordable access to necessities like water and electricity. Many cities and counties empower publicly owned utilities to supply, manage and deliver water and electricity services as cost-efficiently as possible. [71] Public provision of both electricity and water generally saves consumers money relative to provision by private providers.[72,73] Local governments have a long history of

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69 *See* City of Wilson, 30 FCC Rcd. 2408, 2410 (2015) ("The actions that communities are taking to make certain their citizens have access to [broadband] infrastructure are varied . . . . No one solution works for all communities.").

70 *See* Roosevelt, *supra* note 7. ("I do not hold with those who advocate Government ownership or Government operation of all utilities.").

71 Eighty-seven percent of Americans receive piped water from a publicly owned provider. *See* FOOD & WATER WATCH, THE STATE OF PUBLIC WATER IN THE UNITED STATES 4 (Feb. 2016), http://www.foodandwaterwatch.org/sites/default/files/report_state_of_public_water.pdf [http://perma.cc/74BU-LANY].

72 *See* Penn, *supra* note 6, at 33 ("[R]ates for public power customers have typically remained well below those of customers served by private utilities since federal comparison statistics began to be published with the end of World War II."); s*ee also* AM. PUB. POWER ASS'N, 2015-2016 ANNUAL DIRECTORY & STATISTICAL REPORT 55, http://web.archive.org/web/20160804162515/http://www.publicpower.org/files/PDFs/PublicPowerCostsLess1.pdf [http://perma.cc/W6DE-X65S] ("Residential customers in IOU service territories paid average rates that were 14 percent above those paid by customers of publicly owned systems during 2013."). *But see* Jim Malewitz, *Deregulated Electricity a Mixed Bag for Consumers*, TEX. TRIB. (Aug. 12, 2015, 7:00 AM), http://www.texastribune.org/2015/08/12/report-deregulated-electric-utilities-narrowing-pr [http://perma.cc/CJ7B-LEP4].

73 A review of the 500 largest U.S. community water systems found that on average, for-profit water utilities charged 59 percent more than large publicly owned systems. *See* FOOD & WATER WATCH, *supra* note 71, at 7; s*ee also*

spending tax dollars on local infrastructure to provide residents with city services (e.g., trash removal, drinking water, sewage) that private companies might have provided instead.[74]

Given this history, there seems like there should be little that is new or particularly controversial about communities providing broadband, at least relative to public provision of other utilities. As the Congressional Research Service recently wrote, "[m]unicipal broadband follows the tradition of municipal utilities, which have been providing basic utilities such as water, natural gas, and electricity for many years."[75]

Moreover, public broadband networks can bring underserved communities high-speed broadband at more affordable rates. Once networks are installed and financing bonds are repaid, there is low marginal cost in service and adding new subscribers. Unlike Comcast and other privately-traded ISPs, a public broadband network need not set high prices in order to maximize profit margins for outside shareholders. [76] Its revenue can be reinvested in the community: upgrading the network, paying for city services, or subsidizing Internet access for low-income or fixed-income residents. Whereas private providers tend to favor serving middle- to upper-income households, [77] a public broadband network could be deployed to meet distributional needs. Public broadband can and has induced private providers to lower prices[78] and increase speeds,[79] provide consumer choice,[80] and

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Richard G. Little & Wenonah Hauter, *Are We Better Off Privatizing Water*? WALL STREET J. (Oct. 8, 2012), http://www.wsj.com/articles/SB10000872396390443816804578002280926253750?mg=id-wsj [http://perma.cc/9KVW-QZP7] ("Private water providers are businesses. They are motivated mainly by their bottom line. The pressure to deliver high rates of return for shareholders drives them to cut corners when they are operating under contracts, and to drive up costs when they are operating as regulated utilities. The latter is a well-established phenomenon known as the Averch-Johnson Effect, named for the economists who first modeled it in the 1960s.").

74 *See* Travis, *supra* note 43, at 1795-96.

75 *See* KRUGER & GILROY, *supra* note 28, at 4.

76 *See* Stricker, *supra* note 4, at 597-98 ("The benefits of affordable broadband access are so important to a community that making a profit should not be the overarching goal. The main purpose of municipal broadband should be to provide an increasingly necessary public service, not turn a profit.").

77 KRUGER & GILROY, *supra* note 28, at 4.

78 *See, e.g.*, DAN MAHONEY & GREG RAFERT, ANALYSIS GRP., BROADBAND COMPETITION HELPS TO DRIVE LOWER PRICES AND FASTER DOWNLOAD SPEEDS FOR U.S. RESIDENTIAL CUSTOMERS 1 (Nov. 2016), http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/broadband_competition_report_november_2016.pdf [http://perma.cc/2XRL-XVBA] ("The presence of gigabit service in a Designated Market Area ('DMA') is associated with a $27 per month decrease in the average monthly price of broadband plans with speeds greater than 100 Mbps and less than 1 Gbps. This is equal to a reduction in approximately 25 percent of the monthly standard price.").

79 *See, e.g.*, CHRISTOPHER MITCHELL, NEW RULES PROJECT, BREAKING THE

encourage local and regional economic development.[81] For communities already served by a municipal electric utility, municipal broadband can be particularly efficient since "infrastructure costs can be shared across those two services, just as private cable companies leveraged their networks to provide Internet service."[82]

In sum, for many communities there are a number of reasons to consider a public broadband alternative to an inadequate broadband status quo. That said, it is also worth considering arguments presented by public broadband opponents.

1. Arguments against Public Broadband

Arguments against public broadband operate along a spectrum. At the far end is a view espoused by FCC Commissioner Michael O'Rielly: categorical opposition to any government entity offering broadband or any other communications services.[83] Commissioner O'Rielly's position is

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BROADBAND MONOPOLY 8 (May 2010), http://muninetworks.org/sites/www.muninetworks.org/files/breaking-bb-monopoly.pdf [http://perma.cc/YY5Z-PJYU] ("[P]ublic networks spurred investment by the incumbents, a trend that is replayed in every community that builds its own network . . . . In Colorado, Qwest and Comcast only built broadband in Longmont after the city announced a partnership with another company that would use public fiber to deliver broadband services. After Lafayette began building its fiber network, incumbent cable company Cox upgraded its offerings, noting 'the people in this area have made it very clear they want faster speeds.'"); Jon Brodkin, *Comcast Brings Fiber to City that It Sued 7 Years Ago To Stop Fiber Rollout*, ARS TECHNICA (Apr. 30, 2015, 6:10 PM), http://arstechnica.com/business/2015/04/comcast-brings-fiber-to-city-that-it-sued-7-years-ago-to-stop-fiber-rollout [http://perma.cc/J4GE-UDCZ] (describing Comcast's steps to match the Chattanooga Electric Power Board's steps).

80 *See, e.g.*, EXEC. OFFICE OF THE PRESIDENT, *supra* note 16, at 4.

81 *See, e.g.*, BENGT G. MÖLLERYD, OECD, DEVELOPMENT OF HIGH-SPEED NETWORKS AND THE ROLE OF MUNICIPAL NETWORKS 25 (2015), http://www.oecd-ilibrary.org/docserver/download/5jrqdl7rvns3-en.pdf [http://perma.cc/E97X-X96L] ("[Municipal broadband networks] facilitate economic growth and development of new jobs and strengthen the competitiveness of businesses located in their towns and regions."); *see also, e.g.*, George S. Ford & Thomas M. Koutsky, *Broadband and Economic Development: A Municipal Case Study from Florida*, 17 REV. URB. & REGIONAL DEV. STUD. 216, 216 (2006) ("Our econometric model shows that Lake County . . . has experienced significantly greater growth in economic activity relative to comparable Florida counties since making its municipal fiber-optic network generally available to businesses and municipal in the county. Our findings are consistent with other analyses that postulate that broadband infrastructure can be a significant contributor to economic growth.").

82 EXEC. OFFICE OF THE PRESIDENT, *supra* note 16, at 13.

83 *See* City of Wilson, 30 FCC Rcd. 2408, 2519 (2015) (O'Reilly, Comm'r, dissenting) ("Let me start by expressing my profound opposition to the offering of broadband or any communications service by a government entity, in this case a municipality.").

a radical political stance, even relative to the public opinions of public broadband's most ardent opponents in Washington, D.C.

Unlike Commissioner O'Rielly, lawmakers and lobbyists who consistently fight community broadband projects almost never express *per se* opposition to community-owned networks.[84] Even AT&T CEO Randall Stephenson, whose company has expended resources lobbying against public broadband networks across the country,[85] testified before Congress that he believed that public broadband networks can be a logical solution to bring connectivity to areas where broadband is unserved.[86]

Commissioner O'Rielly's position matters because he sits in the majority on the Republican-led FCC. FCC commissioners cast crucial votes on telecommunications regulations, including those that effectively permit or prohibit the construction of some public broadband networks. His opposition is a major hurdle for public broadband advocates to overcome. For example, Commissioner O'Rielly voted to reject Chattanooga's request for FCC preemption from Tennessee's restrictions on municipal broadband, and explained his view as follows:

> Let me start by expressing my profound opposition to the offering of broadband or any communications service by a government entity, in this case a municipality . . . . [T]he bedrock of American capitalism is private enterprise free from government manipulation as a market entrant. If there is market need, an individual with a dream and a propensity for risk will enter

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84 *See, e.g.*, Sam Gustin, *Meet Marsha Blackburn, Big Telecom's Best Friend in Congress*, MOTHERBOARD (July 6, 2014, 7:35 PM), http://motherboard.vice.com/en_us/article/meet-marsha-blackburn-big-telecoms-best-friend-in-congress [http://perma.cc/4GBP-337X?type=image].

85 *See, e.g.*, Sean Buckley, *Comcast, AT&T Thwart Municipal Broadband Expansion Effort in Tennessee*, FIERCETELECOM (Mar. 16, 2016, 12:19 PM), http://www.fiercetelecom.com/telecom/comcast-at-t-thwart-municipal-broadband-expansion-effort-tennessee [http://perma.cc/CHA9-RRBG]; *see also* Michael Hiltzik, *Cable and Telecom Firms Score a Huge Win in Their War To Kill Municipal Broadband,* L.A. TIMES (Aug. 12, 2016, 2:05 PM), http://www.latimes.com/business/hiltzik/la-fi-hiltzik-cable-municipal-broadband-20160812-snap-story.html [http://perma.cc/B37R-DBWZ].

86 *See* Allan Holmes, *How Big Telecom Smothers City-Run Broadband*, CTR. FOR PUB. INTEGRITY (Aug. 28, 2014, 5:00 AM), http://www.publicintegrity.org/2014/08/28/15404/how-big-telecom-smothers-city-run-broadband [http://perma.cc/WDP9-9QZE] ("Most of the telecommunications companies say they support municipal broadband, but only for those areas that they don't serve. 'The idea of private capital competing with taxpayer-provided capital just feels inconsistent to us with what a free-market system looks like,' AT&T Chief Executive Officer Randall Stephenson said at a U.S. Senate hearing in June. 'But where it's unserved, it seems like a logical place for government to step in and provide a solution.'").

> to provide service. It is not the government's role to offer services instead of or in competition with private actors.[87]

As Commissioner O'Rielly explains, his belief is that if there is a market need, an individual will provide service. This statement might make sense, but only as a general approach: if a competitive market provides adequate broadband service at affordable rates, there may be little reason for a government to provide it instead or to compete with private actors.[88] But that instance does not justify opposition to government entities offering broadband in all cases, including in communities where no private actor offers broadband at all.[89] Just as it was not always cost-efficient to provide every community with electricity, it may not always be cost-efficient to provide every community with broadband. In other words, "the need for broadband is everywhere, even if the business case is not."[90] No other FCC Commissioner joined Commissioner O'Rielly's categorical opposition to public broadband.

This is not to say that there are no arguments against public broadband to be made in some cases, particularly in areas already well served by affordable broadband service. For example, some argue against public broadband networks on the grounds that these networks may have several unfair, market-distorting advantages over private ISPs, such as the ability to

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87 *City of Wilson*, 30 FCC Rcd. at 2519 (O'Reilly, Comm'r, dissenting) (emphasis added).

88 Note the disclaimer "as a general approach." There is evidence that municipalities who announce plans to or interest in building a municipal broadband network may spur existing providers to upgrade networks and offer faster speeds. *See, e.g.*, Comments of the Fiber to the Home Council Americas in Support of Electric Power Board and City of Wilson Petitions at 8-9, City of Wilson, 30 FCC Rcd. 2408 (2015) (Nos. 14-115, 14-116) ("[M]unicipal utility all-fiber systems have spurred competition and additional network builds.").

89 This opposition can also read like a catch-22, since the municipalities most likely to look into municipal broadband provision are likely communities poorly served by their existing market for broadband, if such a market exists at all. Thus, opposition to municipal broadband in all communities on the grounds that it would compete with existing private providers opposes municipal broadband in the very communities most likely to benefit from it. *See* Carl Kandutsch, *The Case for Municipal Broadband*, BROADBAND PROPERTIES MAG., May 2005, at 18, 23, http://www.broadbandproperties.com/2005issues/may05issues/Carl_Kandutsch_The_Case_for_Muni_Broadband.pdf [http://perma.cc/P3L3-UXYF] ("[T]o take this objection seriously, one must ignore the evidence of market failure, which as discussed above constitutes the single greatest incentive for municipal involvement in communications in the first place. That is, if there were a healthy competitive market for communications services either nationally or locally, municipalities would not be motivated to involve themselves in the market.").

90 *City of Wilson*, 30 FCC Rcd. at 2410.

grant themselves right-of-way or to clear regulatory barriers that might be placed in the way of private providers.[91] Others argue that the public might fund networks at predatorily low rates that undercut private sector competition.[92] Expenditures could divert money away from more pressing needs. Perhaps some governments are ill-equipped to build and manage telecommunications networks relative to private sector expertise, or the capital required for certain networks' construction makes them a bad investment if enough city residents do not ultimately adopt broadband service,[93] and so on. None of these arguments against public broadband are inherently wrong: any community considering deploying a broadband network should understand these concerns, as well as whether and how they apply to the community's own circumstances.[94]

In any event, valid arguments against public broadband in particular cases do not support the proposition that a network would be a poor choice for all communities in all cases. Such categorical opposition to public broadband seems divorced from market reality and a rich history of public provision of essential services, including Internet services.[95] Given the existence of market failure in provision of broadband services in some communities,[96] the potential for public broadband networks to

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91 *See, e.g.*, Berin Szoka, *Don't Blame Big Cable. It's Local Governments That Choke Broadband Competition*, WIRED (July 16, 2013), http://www.wired.com/2013/07/we-need-to-stop-focusing-on-just-cable-companies-and-blame-local-government-for-dismal-broadband-competition [http://perma.cc/7L6C-FK5D].

92 The opposite problem is also true: ISPs competing with municipal broadband networks have been accused of engaging in predatory pricing, dropping their prices below cost to deter subscribers from switching over to the publicly-owned network. This is especially problematic for networks like Chattanooga's, because Tennessee prohibits any government-owned network from offering service below cost, even to low- or fixed-income residents. As a result, Chattanooga offers its lowest-tier service for $27 per month; Comcast responded by introducing a cheaper service (at one-tenth the speed) for a cheaper rate of $19.99 per month. *See* Jason Koebler, *The City That Was Saved by the Internet*, MOTHERBOARD (Apr. 11, 2017, 9:30 AM), http://motherboard.vice.com/en_us/article/chattanooga-gigabit-fiber-network [http://perma.cc/YM46-5YR3].

93 *See* KRUGER & GILROY, *supra* note 28, at 4.

94 *See, e.g.*, *Successes and Failures*, COMMUNITY NETWORKS, http://muninetworks.org/content/successes-and-failures [http://perma.cc/5XTG-HSX5] ("[O]ur position is not that every community has built a flawless network or that every community should immediately invest in fiber-to-the-home. Rather, we recognize that what is right for one community may not be right for another. Ultimately, the community itself must decide what is important and how to proceed. . . . All community broadband networks are clearly not failures. The claim is absurd.").

95 *See* Eric Null, *Municipal Broadband: History's Guide*, 9 I/S: J.L. & POL'Y FOR INFO. SOC'Y 21, 25 (2013) ("[E]mpirical data show that municipalities can be very successful Internet providers.").

96 *See generally supra* Introduction & Part I.

meet public needs, and the wide and varied models of public broadband networks available from which to choose, at least some communities without high-speed, affordable broadband should consider building their own networks.

2. Which Places Could Be Well-Served by Public Broadband

Whether a particular community should provide broadband, and in what form, will require a careful and fact-specific examination of a number of different factors. Here are just a few examples of what a community should consider: its existing broadband market prices, services and state of competition; potential for private investment absent any public provision; the community's goals, including its desire to close digital divides; the feasibility of other means to spur broadband provision and adoption such as subsidies or vouchers; the community's access to capital and future economic growth projections; comparisons to other municipal broadband attempts; and so on.[97]

So far, communities that have built their own municipal broadband networks are mostly small to mid-sized cities, often in rural areas.[98] Intuitively, this should make sense: the "rural build-out problem" makes it harder for private providers to quickly recoup investment in less densely populated areas, so rural areas are more likely to experience market failure, represented by lack of broadband service.[99] Rural communities may be best suited to eschew a failing private market and vote in favor of a public broadband network.[100] Chattanooga is still the largest city served by a municipal broadband network, serving just over 170,000 households.[101]

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97 For an example of a municipal broadband feasibility study, see Seattle's study, which provides an example of the incredible range of factors a large municipality might consider before adopting a municipal broadband proposal. Columbia Telecomm. Corp., *City of Seattle Fiber-to-the-Premises Feasibility Study*, CITY OF SEATTLE (June 2015), http://www.seattle.gov/Documents/Departments/Broadband/2016-6SeattleReport-Final.pdf [http://perma.cc/J3MQ-D976].

98 For purposes of clarity, this paper limits the term "municipal broadband" to networks that serve homes, and does not include, for example, the many communities that have built public networks to provide broadband to schools, hospitals, government buildings, and so on while leaving the provision of last-mile Internet connection to homes entirely to the private sector.

99 *See* Null, *supra* note 95, at 23-24.

100 Notably, three in four cities that have built high-speed broadband networks tend to vote for Republican candidates in national elections. *See* Chris Mitchell, *Most Municipal Networks Built in Conservative Cities,* COMMUNITY NETWORKS (Jan. 20, 2015), http://muninetworks.org/content/most-municipal-networks-built-conservative-cities [http://perma.cc/EU8N-VHJ5].

101 Emily Badger, *Why Are There No Big Cities with Municipal Broadband Networks?*, CITYLAB (Mar. 4, 2013),

Larger urban communities should also consider building public broadband networks, though they may have different obstacles and considerations. First, the increased number of households served by a large urban network means the construction cost may be greater (though perhaps not on a per-subscriber basis, and their revenue base may be greater too). Second, because most urban residents have access (if not affordable access) to at least one broadband provider, incumbents will likely lobby against the network's construction. In the past, incumbent providers have proved formidable foes of public broadband networks, successfully lobbying a great number of state and local governments to write laws that "stifle municipal broadband in its infancy."[102]

Another factor complicating the construction of municipal broadband in larger cities is that the most pressing broadband problem in many of these areas is not lack of deployment but rather lack of adoption, driven by unaffordable pricing. In these areas, residents may support a municipal broadband network not because the private market failed to provide broadband, but because the private market failed to provide broadband at a price enough people can afford.[103]

B. Public Broadband in Urban Areas

Like rural areas, urban areas should look to the wide range of forms of public broadband networks and determine if any would fit the municipality's particular goals. For example, instead of becoming a publicly owned ISP like EPB in Chattanooga, some urban areas could consider fostering a market for competitive, high-speed networks by financing the construction of high-speed last-mile connections and then leasing those connections to competing ISPs.

As discussed *supra*, one way to analogize this type of network is to compare it to an airport, where a city finances the airport's construction and private airline companies pay the city to lease space in terminals and gates.[104] Here, the city would finance and own the last-mile network (the airport), and

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http://www.citylab.com/cityfixer/2013/03/why-are-there-no-big-cities-municipal-broadband-networks/4857 [http://perma.cc/8492-SDPW].

102 John Blevins, *Death of the Revolution: The Legal War on Competitive Broadband Technologies*, 12 YALE J.L. & TECH. 85, 107 (2009).

103 Here, low-income consumers lack "access" to broadband in the same way they may, in many states, lack "access" to health insurance: though the product (health insurance or broadband) is offered on the market, its monthly cost means the consumer cannot afford to purchase it. Absent subsidies or price regulations, from the consumer's perspective the accessibility of an unaffordable product is not meaningfully different from if the product were not offered at all.

104 *See* text accompanying *supra* note 27.

lease the use of those connections to private ISPs (airlines). Susan Crawford, who has written and published extensively on telecommunications networks, advocates a similar approach:

> The only business model for fiber that will work to produce the competition, low prices, and world-class data transport we need—certainly in urban areas—is to get local governments involved in overseeing basic, street grid-like "dark" (passive, unlit with electronics) fiber available at a set, wholesale price to a zillion retail providers of access and services . . . a wholesale facility that any retail actor can use at a reasonable, fair cost.
>
> *The result: Instead of different wires competing side by side with one another, there would be one great basic facility available neutrally to every form of business.* Your ISP could use that fiber in competition with 10 others; your traffic lights could use it to govern congestion; your energy grid could use it to measure and regulate consumption and use of renewables . . . . At the same time, the government would stay out of providing and inventing retail services itself.[105]

In addition, public investment in high-speed broadband can help advance equity-based goals, which governments are often better equipped to work toward than are revenue-maximizing private firms.[106] For example, the public broadband network in Wilson, North Carolina, offers public housing residents fifty-megabits-per-second connections for just ten dollars a month.[107] For this reason, public broadband advocates in urban areas may emphasize the network's potential to advance equity, alongside arguments that the network would offer better speed, service, and prices.

In Seattle, a group of citizens named Upgrade Seattle is "dedicated to creating a publicly-owned Municipal Broadband utility focused on equity."[108] Their advocacy materials suggest

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105 Crawford, *supra* note 27 (emphasis added).

106 *Episode 23: Susan Crawford on Investing in Internet Infrastructure*, ADAM RUINS EVERYTHING (Mar. 29, 2017), http://www.maximumfun.org/adam-ruins-everything/adam-ruins-everything-episode-23-susan-crawford-investing-internet-infrastruct [http://perma.cc/GR4R-9ZG7].

107 Elizabeth Woyke, *How To Keep the Government from Breaking the Internet*, MIT TECH. REV. (Apr. 13, 2017), http://www.technologyreview.com/s/604054/how-to-keep-the-government-from-breaking-the-internet [http://perma.cc/Z47T-HHD7].

108 *Why Municipal Broadband?*, UPGRADE SEATTLE,

an approach that arguments for public broadband in urban areas might take:

> Seattle is Ready for Better Broadband
>
> It's time to make the Internet a city-owned and operated utility, just like water and electricity.
>
> Whether you're living in Beacon Hill, Rainier Valley, Capitol Hill or Northgate, you deserve equitable access to fast and affordable Internet. Did you know that 15% of Seattle residents lack home internet?
>
> We can roll out affordable gigabit broadband to everyone in Seattle by making it a public utility . . . .
> Other cities have already created their own municipal broadband networks, like Chattanooga, Tennessee. It is time for the City of Seattle to do the same. [109]

In 2015, Seattle's city council voted 6-2 against funding a $5 million municipal broadband pilot project, but Upgrade Seattle remains committed to its mission.[110] That same week, Seattle's residents voted to approve an additional $930 million property tax to fund city transportation services. [111] It is at least conceivable that Seattle residents could one day vote to fund a municipal broadband network costing half or two-thirds that price.[112]

If larger urban areas like Seattle build successful municipal broadband networks, then just as "in the age of electrification, the question of municipalization may grow from a small-town referendum to a national debate."[113] Still, most municipalities

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http://www.upgradeseattle.com/what-we-do [http://perma.cc/JHU4-PTUG].

109 UPGRADE SEATTLE, http://www.upgradeseattle.com [http://perma.cc/ENX9-83RS].

110 *See* Josh Cohen, *"No" Vote Isn't Stopping Push for Municipal Broadband in Seattle*, NEXTCITY (Nov. 23, 2015), http://nextcity.org/daily/entry/no-vote-isnt-stopping-push-for-municipal-broadband-in-seattle [http://perma.cc/WW6R-Y8TR].

111 *Levy to Move Seattle*, SEATTLE DEP'T TRANSP., http://www.seattle.gov/transportation/levytomoveseattle.htm [http://perma.cc/X4G4-3AVF].

112 *See* Cohen, *supra* note 110 ("Cost was another potential barrier that [Seattle Chief Technology Officer Michael] Mattmiller pointed to in his rationale for not taking on municipal broadband. The city's study found implementation would cost between $463 and $630 million, lower than previous feasibility studies had found, but still expensive. Nonetheless, Seattle voters have shown a willingness to tax themselves to fund city investments and recently passed a record $930 million transportation levy.").

113 Steven C. Carlson, *A Historical, Economic, and Legal Analysis of Municipal Ownership of the Information Highway*, 25 RUTGERS COMPUTERS & TECH. L.J.

hoping to build these networks will encounter legal and political hurdles on the way. One of the most pressing hurdles may be the lack of political support, and perhaps outright opposition, from the Republican-led majority at the FCC.

C. Will President Trump's FCC Support Public Broadband?

Before the election of President Donald Trump, the Democrat-led FCC majority under President Barack Obama had planted itself firmly in favor of allowing communities to construct municipal broadband networks.[114] The FCC's support of municipal broadband played a critical part in the efforts to expand the municipal broadband networks in Chattanooga and Wilson. Those municipalities relied on the FCC's permission to preempt restrictive state laws. It is not yet clear whether the FCC will continue its Obama-era support of municipal broadband networks.

If Chairman Ajit Pai shifts the FCC's position on public broadband, the decision would disproportionately impact Americans living in rural areas, who stand to gain the most from increased access to affordable high-speed broadband.[115] As outgoing FCC Chairman Tom Wheeler argued, this change would be especially unfortunate, since these were the same areas that by and large voted for President Trump.[116]

In his first remarks as FCC Chairman, Pai described bridging digital divides as one of his "top priorities," but expressed support only for private providers' efforts, making no reference to the role of the public sector.[117] Chairman Pai's

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1, 43 (1999).

[114] *See, e.g.*, Tom Wheeler, FCC Chairman, *Removing Barriers to Competitive Community Broadband,* FCC BLOG (June 10, 2014, 4:17 PM), http://www.fcc.gov/news-events/blog/2014/06/10/removing-barriers-competitive-community-broadband [http://perma.cc/9EXP-2J5A].

[115] Jon Brodkin, *Trump Voters Need Fast Broadband and Net Neutrality Too, Tom Wheeler Says*, ARS TECHNICA (Jan. 20, 2017), http://arstechnica.com/tech-policy/2017/01/trump-voters-need-fast-broadband-and-net-neutrality-too-tom-wheeler-says/ [http://perma.cc/59VM-E4ND] ("[T]wo-thirds of consumers in America have one or fewer broadband choices . . . . Where are those choices most limited? In the areas where Donald Trump got the strongest response, in rural areas, outside of major cities. If indeed this is an administration that is speaking for those that feel disenfranchised, that representation has to start with saying, 'we need to make sure you have fast, fair, and open Internet because otherwise you will not be able to connect to the 21st century.'").

[116] *See id.*; *see also* Danielle Kurtzleben, *Rural Voters Played a Big Part in Helping Trump Defeat Clinton*, NPR (Nov. 14, 2016), http://www.npr.org/2016/11/14/501737150/rural-voters-played-a-big-part-in-helping-trump-defeat-clinton [http://perma.cc/A8SG-FG6W].

[117] *See* Remarks of Ajit Pai, Chairman, Fed. Commc'ns Comm'n (Jan. 24, 2017), http://apps.fcc.gov/edocs_public/attachmatch/DOC-343184A1.pdf

broadband deployment working group came under fire after the mayor of San Jose, California publicly resigned from it, stating in an open letter that it was apparent that the group's goal was "to create a set of rules that will provide industry with easy access to publicly-funded infrastructure at taxpayer-subsidized rates, without any obligation to provide broadband access to underserved residents."[118] The group's draft model code for states explicitly discouraged city-owned networks, though it did not rule them out completely.[119]

It is not yet clear where Chairman Pai stands on the issue of public broadband. Despite Chairman Pai's stated interest in bridging digital divides, the number of successful public broadband networks, and FCC support for municipal broadband in the last administration, Chairman Pai's "Digital Empowerment Agenda" did not mention public broadband.[120] Although Commissioner O'Rielly's categorical opposition to public broadband is extreme, at least it is expressed. It would be helpful for public broadband advocates and opponents alike to know where Chairman Pai stands.

Whether or not Chairman Pai does decide to publicly support public broadband during his tenure, communities should be taking a close look at whether a public broadband network would fit their needs. Building the network, however, may require overcoming several legal hurdles.

III. OVERCOMING LEGAL BARRIERS TO PUBLIC BROADBAND

> *"That's not capitalism . . . . That's crony capitalism."*
>
> —Tennessee State Representative Mike Carter (R-Hamilton County)[121]

[http://perma.cc/W3DB-W8Q3] ("One of the most significant things I've seen during my time here is that there is a digital divide in this country—between those who can use cutting-edge communications services and those who do not. I believe one of our core priorities going forward should be to close that divide—to do what's necessary to help the private sector build networks, send signals, and distribute information to American consumers . . . . We must work to bring the benefits of the digital age to all Americans.")

118 Jon Brodkin, *Mayor Quits FCC Committee, Says It Favors ISPs over the Public Interest*, ARS TECHNICA (Jan. 25, 2018), http://arstechnica.com/tech-policy/2018/01/fcc-broadband-committee-wants-to-restrict-publicly-owned-networks/ [http://perma.cc/97U2-NFBB].

119 *Id.*

120 Ajit Pai, Comm'r, Fed. Commc'ns Comm'n, A Digital Empowerment Agenda (Sept. 13, 2016), http://apps.fcc.gov/edocs_public/attachmatch/DOC-341210A1.pdf [http://perma.cc/W9XZ-GB27].

121 Mariam Baksh, *Municipalities Dream Big on Broadband*, AM. PROSPECT (Aug. 19, 2016), http://prospect.org/article/municipalities-dream-big-broadband [http://perma.cc/WW8N-L8NM].

Nebraska is the only state in the country where every single resident and business receives electricity from a community-owned institution,[122] and electricity in Nebraska costs fifteen percent less than the national average.[123] Despite Nebraska's success with the public provision of electricity, the state takes the opposite approach when it comes to broadband: state law categorically bans local communities and public power companies from providing broadband service.[124]

Nebraska's ban is perhaps the strictest in the country, but at least nineteen other states ban or restrict the construction or provision of public broadband.[125] Thus, in addition to navigating local laws and transactions governing pole sharing or right-of-way restrictions,[126] communities hoping to build

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122 Thomas M. Hanna, *Community-Owned Energy: How Nebraska Became the Only State to Bring Everyone Power from a Public Grid*, YES! MAG. (Jan. 30, 2015), http://www.yesmagazine.org/commonomics/nebraskas-community-owned-energy [http://perma.cc/F6C9-G2HG] ("In the United States, there is one state, and only one state, where every single resident and business receives electricity from a community-owned institution rather than a for-profit corporation . . . . Nebraskans pay one of the lowest rates for electricity in the nation and revenues are reinvested in infrastructure to ensure reliable and cheap service for years to come.").

123 Neb. Energy Office, *Annual Average Electricity Price Comparison by State*, STATE OF NEB., http://www.neo.ne.gov/statshtml/204.htm [http://perma.cc/B7AJ-JSKX] ("As of 2016, the statewide average electricity price is the seventeenth-lowest rate in the country, based on the latest federal figures. Nationally, electricity costs 13 percent more than it does in Nebraska.").

124 NEB. REV. STAT. ANN. §§ 86-594 ("Agency or political subdivision of state; limitation on power: . . . 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, Internet services, telecommunications services, or video services . . . ."), -595 ("Public power supplier, limitation on retail services: (1) A public power supplier shall not provide on a retail basis any broadband services, Internet services, telecommunications services, or video services . . . ."); *see also id.* §§ 86-575, -593.

125 *See* Jason Koebler, *The 21 Laws States Use to Crush Broadband Competition,* MOTHERBOARD (Jan. 14, 2015, 6:16 PM), http://motherboard.vice.com/en_us/article/the-21-laws-states-use-to-crush-broadband-competition [http://perma.cc/9L5T-BYH6] (listing Nebraska under "Total Ban," the strictest category, along with five other states: Arkansas, Missouri, Montana, Tennessee, and Virginia); *see also id.* ("There are three different 'categories' of state law banning municipal broadband. There are 'If-Then' laws, which have some requirements for municipal networks such as a voter referendum or a requirement to give telecom companies the option to build the network themselves, rather than restrictions (some are easier to meet than others). Then there are 'Minefield' laws, which are written confusingly so as to invite lawsuits from incumbent ISPs, financial burden on a city starting a network, or other various restrictions. Finally, you've got the outright bans. Some of these are simple, others are worded in a way that make it seem like it'd be possible to jump through the hoops necessary to start a network, but in practice, it's essentially impossible.").

126 Getting access to utility poles is a major barrier to entry for new ISPs, including municipal broadband networks, as it often requires negotiating agreements with a number of different companies, sometimes including

public broadband networks in these states will find their efforts stymied by state-level restrictions. That is, unless those communities can effect changes in their states' laws or successfully petition the FCC to preempt them.[127] Neither approach is a sure bet.

A. State-Based Restrictions on Public Broadband

Before allowing a city to build a broadband network, a state may have an interest in ensuring that its cities conduct proper feasibility studies, finance responsibly, fairly compete against any private providers, and so on.[128] But categorically banning public provision of broadband as a matter of principle is difficult to justify, as well as politically unpopular.[129]

One explanation for why some state legislatures enact heavy restrictions on community broadband is that private ISPs pressure them to. Private ISPs have a well-documented history of lobbying for these restrictions and financially supporting state legislators who enact them.[130]

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incumbent ISPs with little incentive to facilitate potential competitors' market entry. *See, e.g.*, Susan Crawford, *Blame Your Lousy Internet on Poles*, BACKCHANNEL (Aug. 31, 2016), http://backchannel.com/blame-your-lousy-internet-on-poles-1998a85c3ed9 [http://perma.cc/5YQ4-DV62].

127 *See* Comments of the Coalition for Local Internet Choice at 21, City of Wilson, 30 FCC Rcd. 2408 (2015) (Nos. 14-115, 14-116) ("While the barriers differ from state to state, they all have a single purpose and effect—to block or significantly delay public entities in deploying advanced communications networks . . . . Unless and until these barriers are removed by federal or state action, countless communities in the states in question will be deprived of the advantages that communities in other states enjoy."). *But see* Michael O'Rielly, *Municipal Broadband: A Snapshot*, FCC BLOG (Jan. 30, 2015, 3:32 PM), http://www.fcc.gov/news-events/blog/2015/01/30/municipal-broadband-snapshot [http://perma.cc/T46C-7P9Y] ("[M]any of the limitations or restrictions appear to be justified practices by state governments and should be excluded from any preemption discussion.").

128 S*ee, e.g.*, Sylvain, *supra* note 47, at 815 ("Surely, states are imposing restrictions in response to the vigorous lobbying of private carriers. But there are earnest policy reasons for them as well. Any governmental meddling, critics contend, will distort the efficient operation of the price mechanism. Municipally supported service, they explain, has an unfair competitive advantage over private provider service because, among other things, the former can pass along costs to taxpayers without paying taxes or attending to the same market pressures.").

129 Brian Fung, *Most Americans Want To Let Cities Build and Sell Homegrown Internet Service,* SWITCH (Apr. 11, 2017), http://www.washingtonpost.com/news/the-switch/wp/2017/04/11/most-americans-want-to-let-cities-build-and-sell-homegrown-internet-service [http://perma.cc/3LZ2-P5PX].

130 One could write an entire article about these lobbying efforts alone. Nonetheless, given the preponderance of states that have passed restrictions on municipal broadband, citing to a reference in each instance would be onerous and unnecessary. *See generally* Holmes, *supra* note 86 ("For more

For example, from 2003 to 2004 alone, private ISPs spent over five million dollars in lobbying fees in a successful attempt to convince the state of Pennsylvania to adopt a de facto state prohibition against new municipal broadband projects.[131] Similar efforts abound in states that have enacted prohibitions or restrictions on public broadband. So long as incumbent private ISPs are powerful special interests in state legislatures, communities may find it difficult or unrealistic to expect to convince their state legislatures to modify or overturn these restrictions on community broadband.[132] They may find better success appealing to Congress, but that is no sure bet, either.

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than a decade, AT&T, Comcast, Time Warner Cable Inc., and CenturyLink Inc. have spent millions of dollars to lobby state legislatures, influence state elections and buy research to try to stop the spread of public Internet services that often offer faster speeds at cheaper rates. The companies have succeeded in getting laws passed in 20 states that ban or restrict municipalities from offering Internet to residents.").

131 *See, e.g.*, Associated Press, *Lobbyists Try to Kill Philly Wireless Plan: State Law Pushed by Industry Would Block City Program*, NBC (Nov. 23, 2004), http://www.nbcnews.com/id/6570011/ns/technology_and_science-wireless/t/lobbyists-try-kill-philly-wireless-plan/ [http://perma.cc/6LAA-R6TT] ("Philadelphia's plan to offer inexpensive wireless Internet as a municipal service—the most ambitious yet by a major U.S. city—has collided with commercial interests including the local phone company, Verizon Communications, Inc. In fact, a bill on Gov. Ed Rendell's desk that could humble Philadelphia's ambitions began 19 months ago as a proposal drafted by lobbyists for telecommunications companies."); *see also* O'Loughlin, *supra* note 5, at 491 ("While the public relations battle raged, Verizon and other interested parties significantly ramped up lobbying efforts in Pennsylvania, paying out $5,275,671 to registered lobbyists between 2003 and 2004, with Verizon alone contributing $3,152,863. In the years preceding, Verizon had taken pains to court the state's officials, spending almost half a million dollars in the previous three election cycles. As a result of its efforts, and with the help of Pennsylvania Governor Ed Rendell's former campaign manager, Verizon and the state's other local phone providers convinced state lawmakers to pass a bill that gives the incumbent carriers the power to effectively veto telecommunications projects by municipal governments.").

132 Tennessee State Senator Todd Gardenhire (R-Chattanooga) describes AT&T as "the most powerful lobbying organization in this state by far," and blames the company for killing attempts to further municipal broadband efforts in the state. *See* Andy Sher, *'AT&T Is the Villain' in Battle over Rural Broadband Access, Gardenhire Says*, TIMES FREE PRESS (Feb. 3, 2016), http://www.timesfreepress.com/news/local/story/2016/feb/03/tennessee-supporters-rural-broadband-rally-state-capitol-demand-legislative-action/348317; [http://perma.cc/5DPY-NK9F]; *see also id.* ("The bill has been opposed for years by AT&T, Comcast and other providers who say it's unfair for them to have to compete with government entities like EPB. But EPB, as well as some lawmakers like Gardenhire, say if the free market isn't providing the service, someone else should. 'Don't fall for the argument that this is a free market versus government battle,' Gardenhire said. 'It is not. AT&T is the villain here, and so are the other people and cable.'").

B. Congress and the Community Broadband Act

In 2005, the year after Pennsylvania enacted its restriction on public broadband networks, a bipartisan group of senators introduced the Community Broadband Act, which would "block states from restricting local governments' ability to provide" broadband service. The six senators supporting the bill hailed from both parties and from all over the country—Democrats Frank Lautenberg (N.J.), John Kerry (Mass.), and Russ Feingold (Wis.), as well as Republicans John McCain (Ariz.), Lindsey Graham (S.C.), and Norm Coleman (Minn.); they were later joined by Republicans Ted Stevens (Alaska), Olympia Snowe (Me.), and Gordon Smith (Or.).

When Senator McCain introduced this bill on the Senate floor, he said, "When private industry does not answer the call because of market failures or other obstacles, it is appropriate and even commendable, for the people acting through their local governments to improve their lives by investing in their own future."[133] The next year, the House of Representatives passed a larger, bipartisan bill that incorporated the Community Broadband Act—but the Senate never passed its version into law.[134]

Over ten years later, Congress still has not passed the Community Broadband Act. Despite bipartisan support among the voting public, support for public broadband among national lawmakers now appears to divide national representatives along party lines, with Democrats generally in favor and Republicans opposed. [135] In 2015, Senator Cory Booker reintroduced the Community Broadband Act, with five cosponsors (four Democrats and one Independent); [136] Representative Anna Eshoo's version in the House of Representatives had just two cosponsors, both Democrats.[137] As

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133 Brendan Sasso, *How Republicans Flip-Flopped on Government-Run Internet*, ATLANTIC (Aug. 26, 2014), http://www.theatlantic.com/politics/archive/2014/08/how-republicans-flip-flopped-on-government-run-internet/456861 [http://perma.cc/2YEA-7SEE].

134 *See id.* ("In 2006, their bill was a few short steps away from becoming law, as it was included as a provision in a broader overhaul of telecommunications regulation. That larger bill, authored by Republican Rep. Joe Barton, then chairman of Energy and Commerce, passed the House with 321 votes—including 215 Republicans. Only eight Republicans voted against it. But fights over net neutrality and other issues bogged the legislation down in the Senate, and it never became law.").

135 *See id.*

136 *Cosponsors: S.240—Community Broadband Act of 2015*, CONGRESS.GOV, http://www.congress.gov/bill/114th-congress/senate-bill/240/cosponsors [http://perma.cc/96Z8-ZXJ9]

137 *Cosponsors: H.R. 6013—Community Broadband Act of 2016*, CONGRESS.GOV, http://www.congress.gov/bill/114th-congress/house-bill/6013/cosponsors [http://perma.cc/8JYP-AZXT].

FCC Commissioner Mignon Clyburn observed: "What is striking, is that the language in all of these bills is nearly identical [to those proposed in earlier years]. The only thing that has changed is the lack of bipartisan support."[138] The same partisan split is not equally mirrored at local levels.[139] A recent study found that three out of four cities with municipal broadband networks tend to vote for Republican candidates in national elections.[140]

It is not clear whether any one reason explains why this nonpartisan issue now divides representatives on the national level, despite widespread support from voters both parties.[141] Barring a "wave" election bringing in a sufficient number of national representatives willing to buck heavy lobbying opposition from private ISPs, the prospect of an imminent legislative solution in the form of a revived bipartisan Community Broadband Act appears distant.

However, it is also possible that Congress *already* passed legislation that would give the FCC authority to preempt state laws restricting public broadband and would allow communities to appeal directly to the FCC for the right to lay their own networks. If true, then Congress may not need to revive the Community Broadband Act at all, since the FCC would already have the power it needs to preempt these restrictive state laws. The source of the FCC's would-be preemption powers are two provisions written into the

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138 *See* City of Wilson, 30 FCC Rcd. 2408, 2504 (2015)

139 For example, in 2017, a bipartisan group of Virginia state representatives mounted an unsuccessful public campaign to defeat a bill that would restrict municipal broadband statewide. *See* Lisa Gonzalez, *Despite Intense Bipartisan Opposition, Virginia's Anti-Municipal Broadband HB 2108 Passes*, INST. FOR LOC. SELF-RELIANCE (Feb. 8, 2017), http://ilsr.org/despite-intense-bipartisan-opposition-virginias-anti-municipal-broadband-hb-2108-passes [http://perma.cc/329D-FQHS] ("At a time when everything seems political, both Republicans and Democrats appreciate that this is not a political issue. The bill's new language, terrible as it is, passed through the House Labor and Commerce Committee on February 2. The vote in the committee was close—11 supported the bill and 9 opposed it. Six Republicans opposed the bill while two Democrats supported it. Likewise, when the bill passed in the House yesterday, Delegates voting against passage were 13 Republicans and 11 Democrats.").

140 *See* Christopher Mitchell, *Most Municipal Networks Built in Conservative Cities*, COMMUNITY NETWORKS (Jan. 20, 2015), http://muninetworks.org/content/most-municipal-networks-built-conservative-cities [http://perma.cc/AX9P-2C6C].

141 One explanation ties national Republicans' "flip-flop" on municipal broadband to partisan animosity between Congress and the President, who publicly advocated for municipal broadband. *See* Sasso, *supra* note 133 ("But it's hard to ignore the most significant change since the Republicans sponsored the municipal broadband bills a few years ago: The Obama administration has taken a position on the issue . . . . [I]nstantly ma[king] the issue more partisan. Wheeler's push on the issue has polarized Republicans, but it's also rallied Democrats to his side.").

Telecommunications Act of 1996.

C. FCC Regulatory Authority

The Telecommunications Act of 1996 ("1996 Act"), the nation's first major telecommunications regulatory overhaul in over sixty years, substantially amended the 1934 Communications Act that first created the FCC.[142] In passing the 1996 Act, Congress aimed to promote competition, reduce regulation, and encourage deployment of new telecommunications technologies, including the Internet.[143] The 1996 Act made a great number of changes in telecommunications law, but above all, Congress was "eager to lift nearly all unnecessary regulatory burdens on competition and entry into the local telecommunications market."[144]

1. Preemption of State Laws Under Section 253

To lift those regulatory burdens, Congress empowered the FCC to preempt state and local laws that posed unnecessary barriers to market entry and competition.[145] Under the 1996 Act, the FCC could preempt any state laws that prohibited, on a non-neutral basis, any entity from providing interstate or

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142 *See generally, e.g.*, CHARLES B. GOLDFARB, CONG. RESEARCH SERV., RL33034, TELECOMMUNICATIONS ACT: COMPETITION, INNOVATION, AND REFORM (2005), http://digital.library.unt.edu/ark:/67531/metacrs7798/ [http://perma.cc/2LW2-XEGH] (describing the changes brought about by 1996 Act).

143 *See* Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 47 U.S.C.), http://library.clerk.house.gov/reference-files/PPL_104_104_Telecommunications_1996.pdf [http://perma.cc/66F9-4BT5].

144 Sylvain, *supra* note 47, at 825; *see also* ANGELE A. GILROY, CONG. RESEARCH SERV., 96-223 SPR, THE TELECOMMUNICATIONS ACT OF 1996 (P.L. 104-104): A BRIEF OVERVIEW 1, (1998), http://digital.library.unt.edu/ark:/67531/metadc818117/m2/1/high_res_d/96-223_1998Nov02.pdf [http://perma.cc/N898-PXGN] ("The general policy objective of the 1996 Act is to open up markets to competition by removing unnecessary regulatory barriers.").

145 See Sylvain, *supra* note 47, at 825-26 ("Through Section 253(a) in particular, legislators were keen on lifting all unnecessary state and local barriers to competition and market entry. Sponsors of the bill, for example, prevailed over a tiny minority of legislators who did not want to see state regulatory authority diminished. Overwhelming majorities in both chambers evidently had little confidence in states' ability or will to encourage competition in the local telecommunications market. The bill to which members agreed, again, endowed the FCC with the power to preempt state and local laws that posed any unnecessary barriers to market entry, only making allowances for state laws that regulate rights-of-way, impose competitively neutral requirements on providers, protect consumers, and assure universal service. Legislators also seemed to consider local government agencies to be among the new market entrants that would be protected from unnecessary barriers." (footnotes omitted)).

intrastate telecommunications service.[146] During floor debates over this provision, a minority of senators expressed concerns that the FCC might overreach with its preemption power, but ultimately the majority of senators "seemed to have even less confidence in the states to usher in the changes necessary to bring competition, and they successfully defended the power of the FCC to preempt state regulations."[147] Ostensibly, this provision—section 253—meant that the FCC could preempt state laws that prohibited cities from providing municipal broadband.

But the Act went further still in empowering the FCC to free localities from burdensome state-level laws that hindered the spread of affordable Internet access, by including another wide-ranging grant of FCC authority.

2. Removing Barriers to Investment, Deployment, and Competition Under Section 706

The 1996 Act also requires the FCC to encourage the reasonable and timely deployment of "advanced telecommunications capability"[148] to all Americans and to report on this progress to Congress each year.[149] If the FCC determines these goals are not met, the 1996 Act requires the FCC to "take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market."[150] Whenever a state imposes regulations that protect incumbent ISPs at the expense of adequate investment or deployment of broadband service, this provision—section 706—provides the FCC with authority to "remove" state barriers, which ostensibly includes the power to preempt state laws.[151]

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146 47 U.S.C. § 253(a) (2006) ("No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.").

147 Duane McLaughlin, *FCC Jurisdiction Over Local Telephone Under the 1996 Act: Fenced Off?*, 97 COLUM. L. REV. 2210, 2223-34 (1997). For more information about the congressional floor debate over section 253, see *id.* at 2223-36.

148 "Advanced Telecommunications Capability" is defined in Section 706(c)(1) of the Act: "The term 'advanced telecommunications capability' is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology." 47 U.S.C. § 1302(d)(1).

149 *See generally* 47 U.S.C. § 1302 (2012) ("Advanced Telecommunications Incentives").

150 *See id.* § 1302(b).

151 *See* City of Wilson, 30 FCC Rcd. 2408, 2411-12 (2015) ("Section 706 does not contain an exception for state laws regarding how municipalities may provide

3. Courts Preempt FCC Preemption

For proponents of municipal broadband, both parts of the 1996 Act appear to give the FCC the power to preempt state laws restricting municipal broadband. However, when cities filed for FCC preemption of state laws restricting municipal broadband—first under section 253 and later under section 706—both attempts failed. Lower courts split, but on appeal, the highest courts that heard each case (the Supreme Court regarding section 253 in *Nixon v. Missouri Municipal League*, and the Court of Appeals for the Sixth Circuit regarding section 706 in *Tennessee v. Federal Communications Commission*) decided it was not sufficiently clear that Congress had given the FCC preemption power over state-level restrictions on provision of broadband by any political subdivision of the state, including by municipalities, municipally owned utilities, or any other public entity.[152]

These two decisions left a legacy that continues to hinder efforts to offer publicly-owned broadband service. They deserve reconsideration—especially *Missouri Municipal League*, which has been widely criticized since.[153] A number of scholars published stern critiques of the *Missouri Municipal League* reasoning, stressing, for example, its "thin analysis of telecommunications law administration generally and the pertinent statutory provision in particular,"[154] its failure to take into account legislative history,[155] its "conscious disregard for the benefits of municipal broadband,"[156] its departure from established federalism doctrine,[157] and many other concerns.[158]

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interstate communications. Rather, section 706(a) broadly authorizes the Commission to use 'regulating methods that remove barriers to broadband investment,' of which preemption is undoubtedly one.").

152 *See* Nixon v. Mo. Mun. League, 541 U.S. 125 (2004); Tennessee v. FCC, 832 F.3d 597 (6th Cir. 2016).

153 *See*, *e.g.*, *infra* notes 154-160.

154 Sylvain, *supra* note 47, at 822; *see also id.* ("By failing to meaningfully consider the full scope of regulatory interventions in the regulatory field (under the amended Communications Act and elsewhere) and the language and purpose of the provisions at issue (Section 253 of the Telecommunications Act), the Court failed to consider the full sweep of resources available for determining legislative intent. For these reasons, the *Missouri Municipal League* opinion presents very little insight into the status of contemporary state restrictions on municipal broadband.").

155 *See, e.g.*, Travis, *supra* note 43, at 1734 ("The legislative history of section 253(a) also provides no basis for reading its preemption of anticompetitive state telecommunications laws as not applying to municipal utilities.").

156 Stricker, *supra* note 4, at 607.

157 *See, e.g.*, Nestor M. Davidson, *Cooperative Localism: Federal-Local Collaboration in an Era of State Sovereignty*, 93 VA. L. REV. 959, 1021 (2007) ("*Nixon*'s vision of the imperatives of state control also ignores the myriad of ways in which Congress, at times with the Court's blessing, interferes directly with the internal structuring of state governments in a variety of contexts. *Lawrence County v. Lead-Deadwood School District No. 40-1* is a

Taking all of these critiques together, some argue that courts should hesitate before applying the *Missouri Municipal League* precedent widely.[159]

Given the private market's failure to provide affordable high-speed broadband to all Americans since the *Missouri Municipal League* decision, and the *Tennessee v. FCC* decision that followed the *Missouri Municipal League* precedent, I return to both cases. I argue that *Missouri Municipal League* was a product of a particular political moment and a misunderstanding of the issues at stake. The ruling strayed from longstanding principles of statutory interpretation, and its legacy has been the stifling of public broadband deployment in the United States.[160]

There is reason for hope. The public outcry for net neutrality in 2014 and again in 2017 indicates that the public may have a greater understanding of telecommunications regulation than it did a decade ago, as well as a greater appetite for democratic participation in Internet rulemaking.[161] With enough public pressure, Congress could pass corrective legislation.

As a complementary approach, the FCC could try once more

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stark example, but by no means the only one. As discussed, the Court has upheld interference with state ordering of its own political subdivisions in voting rights, the structure of state employment, and in the general scope of state power." (footnotes omitted)).

158 *See, e.g.*, Sylvain, *supra* note 47, at 818 ("The attention the *Missouri Municipal League* opinion has received from legislators and commentators is reason alone to give that opinion more than casual consideration."); *id.* at 818 n.131 ("The opinion has attracted the attention of able commentators for the past seven or so years. These commentators have not directed their analysis so much at the Court's consideration of Section 253(a), the 1996 Telecommunications Act, or communications law generally as much as the Court's unwarranted aggrandizement of state authority over resident local governments.").

159 *See, e.g.*, Matthew Dunne, Note, *Let My People Go (Online): The Power of the FCC to Preempt State Laws that Prohibit Municipal Broadband*, 107 COLUM. L. REV. 1126, 1157 (2007) ("More fundamentally, it may be wise to question some of the concerns underlying [*Missouri Municipal League*] before applying its precedent more widely."). Courts appear to have followed this tack: until the *Tennessee v. FCC* decision that rested on *Missouri Municipal League* precedent, courts distinguished or declined to extend the *Missouri Municipal League* decision.

160 *See, e.g.*, Blevins, *supra* note 102, at 109 ("The significance of *Nixon*, then, is that the Court both upheld the legality of the states' post-1996 Act restrictions on municipal entry, and opened the door for new legislative restrictions.").

161 *See, e.g.*, Elise Hu, *3.7 Million Comments Later, Here's Where Net Neutrality Stands*, NPR (Sept. 17, 2014, 3:12 PM ET), http://www.npr.org/sections/alltechconsidered/2014/09/17/349243335/3-7-million-comments-later-heres-where-net-neutrality-stands the broadband market [http://perma.cc/2CK7-U6H6] ("[A] record 3.7 million comments arrived at the FCC . . . . [F]ewer than 1 percent were opposed to net neutrality enforcement.").

to grant municipalities preemption under section 253. If states were to challenge this action in court, it would give the Court a chance to revisit and overrule its 2004 *Missouri Municipal League* decision. Even if the FCC lost in court and the Supreme Court upheld its 2004 decision, the public effort—including high-profile testimony on the successes of public broadband networks and the special interest dollars that flowed to backers of state-level restrictions on public broadband—might be enough to move the needle for Congress.

The case for categorical bans on public broadband is so weak that sunlight may be enough to end them entirely, or at least to roll them back into reasonable restrictions. With enough publicity and public pressure, Congress may be persuaded to finally adopt the Community Broadband Act, thereby joining the majority of Americans in expressing their belief that local communities should have the right to build their own networks.

IV. *NIXON V. MISSOURI MUNICIPAL LEAGUE*: THE LOSS OF SECTION 253

> *"The monopolist's tools are lawyers and local statutes; his tactics are delays and court challenges, all deployed with an eye toward unraveling firms with lesser resources."*
>
> —Columbia Law Professor Tim Wu[162]

Almost immediately after Congress adopted the 1996 Act, incumbent telecommunications providers lobbied state legislatures to pass laws prohibiting or severely restricting local municipalities' abilities to provide telecommunications services.

One prominent example of such lobbying efforts took place in Missouri, when Southwestern Bell (later renamed "SBC") successfully lobbied the Missouri General Assembly to adopt HB 620. [163] The Missouri bill prohibited any "political subdivision of the state,"[164] including local governments, from

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[162] TIM WU, THE MASTER SWITCH: THE RISE AND FALL OF INFORMATION EMPIRES 245 (2010).

[163] *See* James Baller, Comments of City Utilities of Springfield, Missouri Conditionally Opposing Southwestern Bell's Application for Leave to Provide In-Region, InterLATA Services in Missouri 1, SBC Communications, Inc., 16 FCC Rcd. 20719 (2001) (CC Docket No. 01-194), 2001 WL 1456806 (comments filed Sept. 10, 2001), http://ecfsapi.fcc.gov/file/6512765204.pdf [http://perma.cc/F5LX-LKDH].

[164] *See* Mo. Rev. Stat. § 392.410(7) (2004) (amended 2008):

> No political subdivision of this state shall provide or offer for sale, either to the public or to a telecommunications provider, a telecommunications service or

offering telecommunications services. [165] In response, a collection of Missouri municipalities, non-profit organizations, and public power companies (collectively, "Missouri Municipals"), on behalf of themselves and more than six hundred Missouri municipalities and sixty-three electric utilities, petitioned the FCC to preempt this statute. In their filing, the Missouri Municipals asked the FCC to declare

> telecommunications facility used to provide a telecommunications service for which a certificate of service authority is required pursuant to this section. Nothing in this subsection shall be construed to restrict a political subdivision from allowing the nondiscriminatory use of its rights-of-way including its poles, conduits, ducts and similar support structures by telecommunications providers or from providing telecommunications services or facilities:
>
> (1) For its own use;
> (2) For 911, E-911 or other emergency services;
> (3) For medical or educational purposes;
> (4) To students by an educational institution; or
> (5) Internet-type services.

[165] Note that the law exempts political subdivisions providing "Internet-type services" but no other telecommunications services. *See id.* Under the statute, a Missouri municipality could provide broadband service, but the ability to provide broadband service but no other services through those cables hinders that municipality's ability to recoup its capital investment in the network. For example, the municipal broadband networks in Chattanooga, Tennessee and Wilson, North Carolina both offer cable television and telephone service, since those services run through the same municipally-owned cables. Most planned or actual municipal broadband networks also offer the "triple play of voice, video and data," since the addition of additional services increases the network's financial viability. *See* Masha Zager, *Number of Community FTTP Networks Reaches 143*, BROADBANDCOMMUNITYS MAG. Aug.-Sep. 2014, at 14, http://www.bbcmag.com/2014mags/Aug_Sep/BBC_Aug14_CommunityNetworks.pdf [http://perma.cc/PJ4L-9QAZ]. Nonetheless, as of writing there are two municipally owned networks in Missouri providing at-home broadband service to a combined roughly 20,000 residents. For the first network, Marshall Municipal Utilities in Marshall, Missouri, the Marshall Board of Public Works owns and operates the network; for the second, liNKCity in North Kansas, Missouri, the city contracts with a private company (DataShack) that operates and maintains the network, which also provides free gigabit Internet service to government facilities, churches, and schools. *See* H. Trostle, *Municipal FTTH Networks: Missouri*, COMMUNITY NETWORKS (Feb. 6, 2017), http://muninetworks.org/content/municipal-ftth-networks [http://perma.cc/D4SL-VP8Q]. Several Missouri state legislators have also attempted to advance a number of bills, including as recently as February 2017, which would add additional requirements for municipalities aiming to provide broadband service. *See* Sean Buckley, *Telco, Cable-backed Missouri Bill Could Limit Municipal Broadband Growth, Opposition Group Says*, FIERCETELECOM (Feb. 15, 2017, 12:48 PM), http://www.fiercetelecom.com/telecom/telco-cable-backed-missouri-bill-to-limit-municipal-broadband-growth [http://perma.cc/X8TJ-B3WH]; *see also, e.g.*, Jon Brodkin, *Municipal Broadband Could Be Restricted Yet Again, this Time in Missouri*, ARS TECHNICA (Jan. 13, 2015, 4:35 PM), http://arstechnica.com/business/2015/01/municipal-broadband-could-be-restricted-yet-again-this-time-in-missouri [http://perma.cc/VYA3-3F3C].

Missouri's prohibition "unlawful and unenforceable" because it violated section 253(a) of the Communications Act, fell outside the scope of section 253(b), and thus qualified for preemption under section 253(d).[166] The relevant text of the section 253 statute read as follows:

> 47 U.S.C. §253 – Removal of barriers to entry
>
> *(a) In general*
>
> *No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.*
>
> *(b) State regulatory authority*
>
> *Nothing in this section shall affect the ability of a State to impose, on a competitively neutral basis and consistent with section 254 of this title, requirements necessary to preserve and advance universal service, protect the public safety and welfare, ensure the continued quality of telecommunications services, and safeguard the rights of consumers . . . .*
>
> *(d) Preemption*
>
> *If, after notice and an opportunity for public comment, the Commission determines that a State or local government has permitted or imposed any statute, regulation, or legal requirement that violates subsection (a) or (b) of this section, the Commission shall preempt the enforcement of such statute, regulation, or legal requirement to the extent necessary to correct such violation or inconsistency.*[167]

To the Missouri Municipals, the language of section 253(a) was clear: "No State" may prohibit "the ability of any entity to provide any interstate or intrastate telecommunications service." Missouri's statute prohibited "any entity" (in this case, municipally owned utilities) from providing telecommunications service. Thus, Missouri's statute violated section 253(a).[168]

The FCC denied the Missouri Municipals' petition. The agency rejected Missouri Municipals' statutory interpretation,

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166 Mo. Mun. League, 16 FCC Rcd. 1157, 1158 (2001).
167 47 U.S.C. § 253 (2000).
168 *See Mo. Mun. League*, 16 FCC Rcd. at 1161.

and explained that "municipalities, as political subdivisions of the state, are not 'entities' within the meaning of section 253(a)."[169] Following the "plain statement" rule[170] set forth in the Supreme Court's 1991 *Gregory v. Ashcroft* decision, the FCC reasoned, "a court must not construe a federal statute to preempt traditional state powers unless Congress has made its intention to do so unmistakably clear in the language of the statute."[171] The FCC said that it was not sufficiently clear that Congress intended "any entity" to include publicly owned utilities. Thus, preempting Missouri's statute would unduly insert the FCC between a state and its political subdivisions, an outcome not intended by section 253.[172]

There are at least two reasons that the FCC's denial of Missouri Municipals' petition was odd.

First, the FCC had previously construed Congressional telecommunications enactments as applying equally to public and private providers,[173] and just four years earlier interpreted "any entity" as applying to both municipally owned and for-profit telecommunications services.[174] It was not clear why a different principle would apply in this case.[175]

Second, the FCC majority claimed it supported municipal broadband, and three Democratic FCC appointees issued or joined two statements accompanying their denial of Missouri Municipals' petition. FCC Chairman Kennard and Commissioner Tristani emphasized in their joint statement that they voted "reluctantly" to deny the preemption petition, given the negative outcome their decision would have for

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169 *Id.* at 1164.

170 *See* Roderick M. Hills, Jr., *Dissecting the State: The Use of Federal Law to Free State and Local Officials from State Legislatures' Control* 6-7 (U. Mich. Law Sch. Working Paper No. 99-001, 1998), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=96708 [http://perma.cc/X8B5-8MQY] ("The 'plain statement' rule in *Gregory* protects federalism through the *national* political process by barring federal intrusions into state sovereignty absent a clear congressional statement to the contrary.").

171 *Mo. Mun. League*, 16 FCC Rcd. at 1160 (citing Gregory v. Ashcroft, 501 U.S. 452 (1991)).

172 *Id*. at 1164.

173 *See* Travis, *supra* note 43, at 1728 ("Before disputes regarding municipal provision of telecommunications services were brought to its attention, the FCC construed the telecommunications laws in such a way that Congressional enactments would apply equally to public and private telecommunications providers.").

174 *Id*. at 1728 ("For example, in 1992, the FCC determined that the term 'any corporation' in the 1934 Act included public telephone utilities. Similarly, in 1997, the FCC concluded that the term 'any entity' in the 1996 Act extended to municipal telecommunications firms for purposes of their universal service obligations.").

175 *See, e.g.,* Dunne, *supra* note 159, at 1147 n.156 ("It is not clear why the FCC was not similarly reluctant in the *Abilene* ruling.").

Missouri residents.[176] The Commissioners acknowledged members of Congress had sent them letters stating "unequivocally" that it was Congress' intent to grant the FCC authority to preempt state or local laws that unreasonably restrict any entity, whether public- or privately owned, from providing telecommunications services.[177] The Commissioners urged Congress to "consider amending the language in section 253(a) to address clearly municipally-owned entities,"[178] and asked states to consider measures other than outright bans on municipal broadband networks. Still, the 3-2 Democratic majority let Missouri's restrictions stand.

Two other factors may have affected the FCC's decision: precedent and politics.

First, the FCC had recently denied a similar petition from the City of Abilene, Texas, on the grounds that "any entity" was not sufficiently clear.[179] The City of Abilene appealed to the D.C. Circuit, which upheld the FCC's decision on grounds that it was not plain to the FCC, or the court, that municipalities would qualify as "any entity."[180] When the FCC denied Missouri Municipals' petition, it pointed to its denial of Abilene's petition and the D.C. Circuit decision upholding it.[181]

Second, at the time of the Missouri Municipals' petition, the FCC had poor relations with states, and the agency was wary of overly intruding into state affairs.[182] Two years earlier, the Eighth Circuit had ruled that the FCC had disrupted the balance between federal and state power and exceeded its jurisdiction when it established pricing rules over local telephone service.[183] As a result, the FCC facing Missouri Municipals "may have been overly solicitous of states' rights, and reluctant to assert its authority against the internal political affairs of states."[184] Moreover, the agency's denial came in the midst of the Rehnquist Court's "'revival' of federalism,"[185] a series of five-to-four cases that expanded state sovereignty at the expense of congressional and federal court

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176 *Mo. Mun. League*, 16 FCC Rcd. at 1172.

177 *Id*.

178 *Id*.

179 *See* Pub. Utils. Comm'n of Tex., 13 FCC Rcd. 3460 (1997).

180 *See* City of Abilene v. FCC, 164 F.3d 49 (D.C. Cir. 1999).

181 *Mo. Mun. League*, 16 FCC Rcd. at 1164.

182 *See* Carlson, *supra* note 113, at 58 ("Why did the FCC refuse to preempt the Texas law in Public Utility Commission? Political considerations may have entered into the decision. The FCC had poor relations with the states at the time it ruled on the Texas case.").

183 *See* Iowa Utils. Bd. v. FCC, 120 F.3d 753, 794 (8th Cir. 1997).

184 Carlson, *supra* note 113, at 58 ("The Eighth Circuit had recently criticized the FCC for trodding on states' rights and exceeding its jurisdiction in the deregulation of local telephony . . . .").

185 Travis, *supra* note 43, at 1729.

jurisdiction.[186] The FCC may have been reticent to preempt state laws under section 253 for fear that the Rehnquist Court would overrule the agency, and further weaken its regulatory authority.

The Missouri Municipals would later face this Rehnquist Court. But first, they appealed their case to the Eighth Circuit Court of Appeals, which sided with them and unanimously vacated the FCC's denial of their preemption petition.

A. The Eighth Circuit Unanimously Overturns the FCC

In a succinct, unanimous ruling barely reaching five pages, the Eighth Circuit Court of Appeals vacated and remanded the FCC's denial of the Missouri Municipals' petition.

1. Section 253(a) is a "Plain Statement"; the FCC Creates Ambiguity Where None Exists

Like the FCC, the Court of Appeals ruling focused most of its decision on the meaning of the "any entity" language in section 253. However, where the FCC found "any entity" to be ambiguous as to congressional intent, the Court of Appeals found the opposite—that the statute's meaning was clear, such that "we should not strain to create ambiguity where none exists."[187]

Under the *Gregory* standard, the Court of Appeals reasoned, "[W]e should ask a single question, is the statute's meaning plain? If so, that ends our analysis, with the result that it must be held that Congress has preempted state law."[188] The Court of Appeals reasoned that section 253 satisfied both the *Gregory* plain-statement rule and *Chevron*'s clear-statement rule[189]: under a plain-language reading of the

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186 *See id.* ("Starting in the 1980s, the Supreme Court, under Chief Justice William Rehnquist, orchestrated a 'revival' of federalism, or even a 'revolution' in states' rights. Specifically, the Court expanded state sovereignty at the expense of federal constitutional rights, the powers of the U.S. Congress, and the jurisdiction of the federal courts. In a series of five-four decisions, the Court unshackled the states from constitutional and Congressional limitations, in cases frequently involving the abuse of individual rights by powerful state officials and private actors.").

187 Mo. Mun. League v. FCC, 299 F.3d 949, 953 (8th Cir. 2002).

188 *Id.*

189 *See id.* at 951 ("We review agency determinations under the two-step process set forth in *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). First, we must determine whether congressional intent is clear from the plain language of the statute. If congressional intent is clear, a contrary interpretation by an agency is not entitled to deference. If the language of the statute is ambiguous, however, and the legislative history reveals no clear congressional intent, we must defer to a reasonable interpretation of the statutory provision made by the agency.")

statute and absent further instruction from Congress, the word "entity" would include municipalities and municipally owned utilities.

2. The FCC Unduly Narrows the Meaning of the Modifier "Any"

Satisfied that "entity" would encompass municipalities and municipally owned utilities under the plain meaning of the term, the Court of Appeals next considered the meaning of the modifier "any." In so doing, it concluded, "Congress's use of 'any' to modify 'entity' signifies its intention to include within the statute all things that could be considered as entities."[190]

For the Court of Appeals, the "any" modifier was significant given the Supreme Court's unanimous decision in the 1997 case *Salinas v. United States*,[191] which held that the term "any" in a federal bribery statute lent itself to a broad interpretation of Congress' statutory authority.[192] For the Court of Appeals, *Salinas*'s "fundamental holding" was that Congress may "change the balance of state and federal powers when it employs plain language to do so."[193] In *Salinas*, the Supreme Court held that "by using the clearly expansive term 'any,' Congress expressed its intent to alter this relationship."[194] Citing *Salinas* and other cases, the Court of Appeals concluded: "time and time again the [Supreme] Court has held that the modifier 'any' prohibits a narrowing construction of a statute."[195]

In sum, between the ordinary definition of "entity" and the expansive scope of the modifier "any," the Eighth Circuit found that municipalities would be encompassed as "any entity"

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190 *Id.* at 953-54.

191 522 U.S. 52 (1997).

192 *See Mo. Mun. League*, 299 F.3d at 954 ("In *Salinas v. United States,* the Court was called upon to decide whether the federal bribery statute, which applies to 'any business transaction,' applies only to bribes affecting federal funds. The defendant, who had bribed a state official, argued that because the bribery statute upset the federal-state balance, the *Gregory* plain-statement rule required a plain statement of congressional intent that the bribery statute apply to bribes having no effect on federal funds. In holding that the bribery statute included bribes of state officials, even where no federal funds were affected, the Court stated that 'the word "any," which prefaces the business or transaction clause, undercuts the attempt to impose this narrowing construction.' The Court also stated that 'the plain-statement requirement articulated in *Gregory* . . . does not warrant a departure from the statute's terms.'" (quoting *Salinas*, 522 U.S. 52)).

193 *Id.* at 955.

194 *Id.*; *see also* Travis, *supra* note 43, at 1732-33 ("Congress's insertion of the word 'any' before 'entity' removed whatever slight doubt might have remained, for the use of 'any' prior to a noun had been repeatedly held by the Supreme Court to encompass all instances of the noun to which it refers.").

195 *Mo. Mun. League*, 299 F.3d at 954.

under section 253(a) as well.

3. Rejecting the D.C. Circuit's *Abilene* Decision, Creating the Circuit Split

The Court of Appeals also rejected the D.C. Circuit's *Abilene* opinion limiting the FCC's section 253 authority. The Court of Appeals criticized the D.C. Circuit's focus on Congress' "tone of voice" rather than the language of the statute[196] and pointed out that the D.C. Circuit ruling did not even mention *Salinas*, [197] an omission that "detract[ed] from the persuasiveness of its opinion."[198] With "all due deference to our sister circuit's holding,"[199] the court held, "we do not find *City of Abilene* to be persuasive."[200]

B. The Supreme Court Limits Section 253

Because the Eighth and D.C. Circuits split on the meaning of section 253(a), the Supreme Court granted certiorari in 2004 to resolve the conflict. The Court heard oral arguments in January 2004 and issued its ruling two months later.

1. Majority Opinion: FCC Cannot Preempt Under Section 253, Mostly for Prudential Reasons

In an eight-to-one opinion authored by Justice Souter (joined in part by Justices Thomas and Scalia), the Court ruled against the Missouri Municipals, and held that the 1996 Act did not allow FCC to preempt state laws that restricted or prohibited municipal telecommunications services.[201]

The Supreme Court's decision did not rest on the "writing on the page"[202]—that is to say, the plain text of section 253—and in this regard the Court departed from both the D.C. Circuit and Eighth Circuit holdings. Instead, the Court took a more prudential approach, ruling that reading section 253 to allow preemption of state laws would create "strange and

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196 *See id.* at 955 ("We find no reference in any of the Supreme Court's decisions regarding the word 'any' about Congress's 'tone of voice' and 'emphasis.'").

197 *See also* Petitioners' Brief at *5, *Mo. Mun. League*, 299 F.3d 949 (8th Cir. 2002) (No. 01-1379), 2001 WL 34090959 ("The D.C. Circuit's failure to apply or even mention *Salinas* is especially noteworthy and troubling because the Supreme Court decided *Salinas* while the *Abilene* case was on appeal and Abilene petitioners relied heavily on that case in their reply brief and oral argument.").

198 *Mo. Mun. League*, 299 F.3d at 954.

199 *Id.*

200 *Id.*

201 Nixon v. Mo. Mun. League, 541 U.S. 125 (2004).

202 *Id.* at 132.

indeterminate results"[203] that Congress could not have possibly meant, and therefore Congress must not have given the FCC this authority. The Court listed three "strange" consequences on which it based this conclusion.

First, preemption would be ineffectual, because "preempting a ban on government utilities would not accomplish much if the government could not point to some law authorizing it to run a utility in the first place."[204] In other words, even if the FCC preempted a state law for a municipality hoping to provide telecommunications service, that municipality would still be powerless to offer telecommunications services "in the absence of some further, authorizing legislation."[205]

Second, preemption would create a "national crazy quilt," because some municipalities would be allowed to provide telecommunications services (if explicitly authorized to do so by their state), whereas municipalities in states next door without such general authority could not.[206]

Third, preemption would create a "one-way ratchet": state governments could move only *towards* authorizing public provision of telecommunications service, "with no alternative to reverse course deliberately later on."[207] In other words, a State could give a political subdivision ("entity") the power to administer broadband service, but the State could not take this power away from entities to which it had already given this power, because the FCC could preempt such a law under section 253.[208] The Court concluded its prudential analysis:

> In sum, § 253 would not work like a normal

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203 *See id.* at 133.

204 *Id.* at 134.

205 *Id.* at 135.

206 *Id.* at 136 ("If the special statute were preempted, a municipality in that State would have a real option to enter the telecommunications business if its own legislative arm so chose and fund the venture. But in a State next door where municipalities lacked such general authority, a local authority would not be able to, and the result would be a national crazy quilt.").

207 *Id.* at 137-38.

208 *Id.* at 136-37 ("Assume that a State once authorized municipalities to furnish water, electric, and communications services, but sometime after the passage of § 253 narrowed the authorization so as to leave municipalities authorized to enter only the water business. The repealing statute would have a prohibitory effect on the prior ability to deliver telecommunications service and would be subject to preemption. But that would mean that a State that once chose to provide broad municipal authority could not reverse course. A State next door, however, starting with a legal system devoid of any authorization for municipal utility operation, would at the least be free to change its own course by authorizing its municipalities to venture forth. The result, in other words, would be the federal creation of a one-way ratchet. A State or municipality could give the power, but it could not take it away later.").

> preemptive statute if it applied to a governmental unit. It would often accomplish nothing, it would treat States differently depending on the formal structures of their laws authorizing municipalities to function, and it would hold out no promise of a national consistency. We think it farfetched that Congress meant § 253 to start down such a road in the absence of any clearer signal than the phrase "ability of any entity."[209]

In fact, the Court did not address the issue that created the circuit split—whether the meaning of "any entity" was sufficiently clear—*until the very last paragraph of the very last page of its sixteen-page opinion*. Here, the Court found that a "complementary principle," the *Gregory* standard, would lead to the same conclusion that Congress did not mean to give the FCC the authority to preempt here.[210] The Court held that the language of section 253 was insufficiently clear as to whether "any entity" included municipalities, and so the statute failed to pass the *Gregory* test. The Court stated that "'ability of any entity' is not limited to one reading, and neither statutory structure nor legislative history points unequivocally to a commitment by Congress to treat governmental telecommunications providers on par with private firms."[211] Absent a more "unmistakably clear" statement, the Court concluded that section 253 preemption did not apply to publicly owned utilities.[212]

Justices Scalia and Thomas joined only with respect to the last paragraph of the majority opinion, and they filed a short two-paragraph concurrence of their own.

2. Justices Scalia and Thomas's Surprising Concurrence, on a Textual Basis

In oral arguments before the Supreme Court, Justice Scalia challenged the State of Missouri's counsel, Ronald Molteni, to explain how section 253(a)'s "any entity" language could be clearer:

> ANTONIN SCALIA: Why isn't 'any entity' clear? . . . *I mean what* . . .
> RONALD MOLTENI: Justice Scalia . . .
> ANTONIN SCALIA: What do they have to say to

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209 *Id.* at 138.
210 *Id.* at 140.
211 *Id.* at 141.
212 *Id.*

> make any . . . 'any entity' clear? 'Paren, and we really mean it?' [Laughter] Or it has to say any entity whatsoever? Would that be clear?
> RONALD MOLTENI: Justice Scalia, there are no magic words, and we're not asserting that there are magic words that need to be there. There has to be some terminology within the statute that . . . that demonstrates that Congress was cognizant it intended to intrude on State government.[213]

Despite his expressed incredulity during oral argument about a narrowed interpretation of "any entity," Justice Scalia (joined by Justice Thomas) ultimately concurred with the majority's one-paragraph "complementary principle" that "any entity" was insufficiently clear.[214]

In the concurrence, Justice Scalia joined the Court's one-paragraph "any entity" analysis but not any other part of the opinion, including its analysis of purported policy consequences. Although Justice Scalia agreed that preemption would have "several unhappy consequences," he emphasized that his decision was on textual, not policy, grounds: "I do not think, however, that the avoidance of unhappy consequences is adequate basis for interpreting a text."[215] The majority opinion did not follow Justice Scalia's advice, and the structure of the opinion (with the lion's share discussing policy consequences and only one paragraph interpreting the text of the statute as a "complementary" consideration) suggests a ruling based more on policy than on statutory interpretation.[216]

Just two years prior to *Missouri Municipal League*, Justice Scalia had described the *Gregory* standard as a "relatively modest burden."[217] Nonetheless, here Justices Scalia and Thomas argued that the last paragraph of the majority's opinion—the "complementary consideration" paragraph discussing the *Gregory* standard—was the *only* part of the opinion on which they cast their vote.[218] Still, their explicit

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213 Oral Argument at 14:53, *Nixon*, 541 U.S. 125 (2004) (Nos. 02-1238, 02-1386, 02-1405), http://www.oyez.org/cases/2003/02-1238 [http://perma.cc/N7FV-9A7M].

214 *Nixon*, 541 U.S. at 141 (Scalia, J., concurring in the judgment).

215 *Id*.

216 *See* Sylvain, *supra* note 47, at 818 ("The Court, of course, did not heed Justice Scalia's advice. To the contrary, the question of local ability played a significant role in the opinion.").

217 City of Columbus v. Ours Garage & Wrecker Serv., Inc., 536 U.S. 424, 450 (2002) (Scalia, J., dissenting).

218 *Nixon*, 541 U.S. at 141 (Scalia, J., concurring in the judgment) ("Section 253(a) simply does not provide the clear statement which would be required by *Gregory v. Ashcroft* for a statute to limit the power of States to restrict the delivery of telecommunications services by their political subdivisions." (citation omitted)).

disavowal of the Court's parade of policy consequences suggests discomfort with the reasoning undergirding the majority opinion—a discomfort echoed, forcefully, in Justice Stevens' dissent.

3. Justice Stevens' Dissent: Section 253 Means What It Says

In his solo dissent, Justice Stevens began by outlining the "'common ground' among the parties" [219] in the case: that Congress certainly intended for section 253 to apply to utilities. To reinforce this view, Justice Stevens quoted from the Conference Agreement on section 253, which states that "explicit prohibitions on entry by a utility into telecommunications are preempted under this section."[220] For Justice Stevens, the disagreement before the Court was whether Congress could have expected that utilities would include municipally-owned utilities. Though the petitioners acknowledged "the unmistakable clarity of Congress' intent to protect utilities' ability to enter local telephone markets," Justice Stevens observed, "they contend[ed] that Congress' intent to protect the subset of utilities that are owned and operated by municipalities is somehow less than clear." [221] Looking at the language of the rest of the statute, Justice Stevens argued, this reading is highly implausible.

To Justice Stevens,

> the assertion that Congress could have used the term 'any entity' to include utilities generally, but not *municipally owned* utilities, must rest on one of two assumptions: Either Congress was unaware that such utilities exist, or it deliberately ignored their existence when drafting section 253. Both propositions are manifestly implausible . . . .[222]

The first assumption—that Congress was unaware of the existence of municipally owned utilities—would be an incredible claim, given the number of such utilities operating in the country. The second assumption—that Congress ignored the existence of municipally owned utilities in drafting section 253—seems equally unlikely, given that the statute makes explicit reference elsewhere to municipally owned utilities,

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219 *Id*. at 143 (Stevens, J., dissenting).

220 S. REP. NO. 104-230, at 127 (1996); *see Nixon*, 541 U.S. at 143 (Stevens, J., dissenting).

221 *Nixon*, 541 U.S. at 143 (Stevens, J., dissenting).

222 *Id*.

even as subdivisions of the State.[223]

Since both of these assumptions are implausible, Justice Stevens argued, "there is every reason to suppose Congress meant precisely what it said: No State or local law shall prohibit or have the effect of prohibiting the ability of *any* entity, public or private, from entering the telecommunications market."[224] For Justice Stevens, the statute as written was limited in scope and did not affirmatively force states to grant new authority to their political subdivisions.[225]

Justice Stevens then addressed the remaining question, "whether reading the statute to give effect to Congress' intent necessarily will produce the absurd results that the Court suggests."[226] Here, Justice Stevens' dissent and Justices Scalia and Thomas' concurrence found common ground: both agreed that the majority's opinion unnecessarily rested on policy determinations, rather than on principles of statutory interpretation and precedent. For Justice Stevens, the majority's parade of horribles was "particularly inappropriate" given that section 253 preemption was not automatic, but depended on an FCC determination.[227]

Justice Stevens also took issue with the Court's assertion that preemption would create a "crazy quilt" of inconsistency among states since only some states would allow cities to provide telecommunications services. If this were true, he argued, permitting Missouri and other states to ban municipal broadband would hardly help the cause of consistency.[228] Moreover, a "crazy quilt" that is the product of choices by Congress is "no more absurd than the 'crazy quilt' that will

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223 Stevens referred to the Pole Attachments Act, 47 U.S.C. § 224, which excludes utilities "'owned by . . . any State,' including its political subdivisions—a clear indication that Congress was aware that many utilities are in fact owned by States and their political subdivisions." *Id.* at 144.

224 *Id*.

225 *Id*. at 146 ("As I read the statute, the one thing a State may not do is enact a statute or regulation specifically aimed at preventing municipalities or other entities from providing telecommunications services.").

226 *Id*. at 144.

227 *Id.* at 147-48 ("Rather than assume that the FCC will apply the statute improperly, and rather than stretch our imaginations to identify possible problems in cases not before the Court, we should confront the problem presented by the cases at hand and endorse the most reasonable interpretation of the statute that both fulfills Congress' purpose and avoids unnecessary infringement on state prerogatives.").

228 *Id*. at 146; *see also* Davidson, *supra* note 157, at 1020 ("As to the *Nixon* Court's arguments from disuniformity and one-way ratchets, the Court appears not to have considered the possibility that an entirely different (and presumably, to Congress, more pernicious) 'crazy quilt' results from protecting state plenary authority . . . The Court could just as easily have drawn the exact opposite conclusion from its hypothetical—that the cause of the disparity was not federal preemption but state control. What is missing from *Nixon* is any recognition of the ability of local governments to advance a national regulatory scheme.").

result from leaving the matter of municipal entry entirely to individual States' discretion."[229]

In sum, Justice Stevens reasoned, the interpretation of section 253 does not "turn on which side has the better view in this policy debate. It turns on whether Congress itself intended to take sides when it passed the 1996 Act."[230] Given the plain language of the statute and its legislative history, he concluded, the statute granted the FCC authority to preempt state laws that unreasonably restricted "any entity" (including municipally owned utilities) from providing telecommunications services.

4. The Lasting *Missouri Municipal League* Legacy: Restricting Public Broadband

Just as Justice Stevens predicted, the Court's *Missouri Municipal League* ruling did not prevent the "national crazy quilt" it ostensibly aimed to avoid. Rather, it facilitated it. In the two years following the *Missouri Municipal League* ruling, ISPs launched a rush of intensive lobbying efforts that convinced a number of state legislatures to pass restrictions on municipal broadband.[231] Today, around twenty states have enacted such laws, and ISPs continue to lobby for restrictive laws in others.[232] The other thirty states do not have these restrictions—some municipalities in those states have municipal broadband networks, while others do not. A crazy quilt, indeed.[233]

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229 *Nixon*, 541 U.S. at 146 (Stevens, J., dissenting).

230 *Id*. at 142.

231 *See, e.g.*, Blevins, *supra* note 102, at 109 ("The significance of *Nixon*, then, is that the Court both upheld the legality of the states' post-1996 Act restrictions on municipal entry, and opened the door for new legislative restrictions. *Nixon*'s significance was not lost on state legislatures, nor upon incumbent carriers. Seizing the opportunity *Nixon* provided, incumbent carriers immediately launched an intensive lobbying effort in multiple states to enact further restrictions on municipal entry into the broadband market. Several states ultimately enacted new restrictions, while others came very close to doing so. These restrictions came at a critical, and vulnerable, time for municipal broadband. Indeed, at the very moment most municipal broadband projects were being proposed and financed, *Nixon* had handed incumbent carriers a potent new weapon to stifle them.").

232 *See* Koebler, *supra* note 125; *see also* Holmes, *supra* note 86.

233 Another example of the crazy quilt: In 2017, private ISPs lobbied the Virginia state legislature to pass a bill that would ban municipal broadband deployment in any city where a private ISP offered ten megabits per second download speed and one megabyte per second upload speed; both speeds are less than half of what the FCC defines as the minimum speeds to be considered "broadband Internet". Under that bill, any Virginia city with a single provider offering that speed could continue to languish in digital darkness, while a nearby city without any providers at all could build a municipal broadband network serving speeds one hundred times faster. *See* Jon Brodkin, *Virginia "Broadband Deployment Act" Would Kill Municipal*

Some have argued that the failure of more municipalities to provide broadband service cannot be tied to the *Missouri Municipal League* ruling alone, since some restrictions (e.g., requiring voters to approve a public network via referendum) can and have been overcome.[234]

However, even municipalities operating in states without state restrictions face well-funded opposition.[235] Private ISPs invest heavily in litigation and lobbying for regulatory hurdles to prevent public broadband deployment, even in cities where such deployment is allowed by law.[236] Moreover, restrictions in other states carry a *signaling* effect, telling municipalities in restriction-free states that their efforts to create municipal broadband "will be opposed, and thus will be more expensive to construct."[237]

When private ISPs lobby governments against public broadband, their goals can include slowing public broadband deployment, increasing its cost, or pushing a city towards ownership models that let a private provider, not the city itself, earn the lion's share of profits from operating the last-mile network. For example, when Chattanooga announced its intention to build a municipal broadband network, Comcast filed for a declaratory injunction just hours before the city voted on whether to upgrade its electrical grid and provide a publicly owned broadband network.[238] Despite the lingering threat of suit, the city approved the plans and defeated Comcast's suit in court, including again on appeal.[239]

Broadband Deployment, ARS TECHNICA (Jan. 13, 2017, 12:31 PM), http://arstechnica.com/tech-policy/2017/01/virginia-broadband-deployment-act-would-kill-municipal-broadband-deployment [http://perma.cc/Y52L-KTK7].

234 *See* O'Rielly, *supra* note 127 ("Requir[ing] a referendum by individual localities within a state seeking to offer broadband services . . . doesn't seem to be an unreasonable or unachievable burden. For instance, a number of Colorado localities successfully conducted the requisite referendums in November's election. Any added costs or time would be offset by the protections of local taxpayer funding and assurances of community support for such networks.").

235 Efforts to municipalize electricity service often fail when faced with well-financed utility opposition. *See* Shelley Welton, *Public Energy*, 92 N.Y.U. L. REV. 267, 344 (2017) ("Even where legal, municipalization and CCA efforts often falter in the face of robust utility opposition."). The municipal provision of Internet services has and will almost certainly continue to face well-financed opposition.

236 For example, incumbent ISPs have sued cities over pole-sharing ordinances, and fighting those suits increases the time and expense required of any new competitor (public or private) hoping to offer service. *See supra* note 126.

237 Blevins, *supra* note 102, at 111-12 (discussing this phenomenon, called "phantom legislation").

238 *Comcast Sues EPB in Hamilton County on Eve of Bond Issue*, CHATTANOOGAN (Apr. 22, 2008), http://www.chattanoogan.com/2008/4/22/126367/Comcast-Sues-EPB-In-Hamilton-County.aspx [http://perma.cc/8CE7-BSQS].

239 *Appeals Court Upholds EPB in Lawsuit by Comcast*, CHATTANOOGAN (May 13,

For all its success, the reach of Chattanooga's municipal broadband network—and the ability to replicate it elsewhere in the state and elsewhere in the country—is hamstrung by the lasting legacy of *Missouri Municipal League*. Over a decade after *Missouri Municipal League*, the FCC—this time more willing to flex its regulatory authority—decided to try another way to preempt state-level municipal broadband restrictions, this time using its section 706 authority.

V. *TENNESSEE V. FCC*: THE LIMITS OF SECTION 706

> *"[Municipal broadband] changed our conceptions of who we are and what is possible. Before we had never thought of ourselves as a technology city."*
> —Andy Berke (Mayor, Chattanooga, TN)[240]

Chattanooga's success with municipal broadband had the small city thinking big. In 2014, its municipal broadband provider, EPB, wanted to expand its network to nearby municipalities. Its effort was stymied by a Tennessee law that prohibited an electric utility from providing Internet service beyond its electric service footprint.[241] Reasoning that this restriction was an "impermissible barrier to broadband deployment,"[242] EPB petitioned the FCC for preemption of Tennessee's law.

The city of Wilson, North Carolina was in a similar predicament. Wilson also deployed a municipal broadband network, and while North Carolina permitted municipal entities to provide broadband service, a 2011 state law

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2009), http://www.chattanoogan.com/2009/5/13/151121/Appeals-Court-Upholds-EPB-In-Lawsuit.aspx [http://perma.cc/98K4-2M2E].

240 Jamie McGee, *Chattanooga Mayor: Gigabit Speed Internet Helped Revive City*, TENNESSEAN (June 14, 2016, 5:23 PM CT), http://www.tennessean.com/story/money/2016/06/14/chattanooga-mayor-gigabit-speed-internet-helped-revive-city/85843196 [http://perma.cc/VCU6-KSYY].

241 TENN. CODE ANN. § 7-52-601 (2011) ("(a) Each municipality operating an electric plant described in § 7-52-401 has the power and is authorized within its service area . . . to acquire, construct, own, improve, operate, lease, maintain, sell, mortgage, pledge or otherwise dispose of any system, plant, or equipment for the provision of cable service, two-way video transmission, video programming, Internet services, or any other like system, plant, or equipment within or without the corporate or county limits of such municipality, and, with the consent of such other municipality, within the corporate or county limits of any other municipality.").

242 Petition of the Electric Power Board of Chattanooga, Tennessee, Pursuant to Section 706 of the Telecommunications Act of 1996, for Removal of Barriers to Broadband Investment and Competition, WC Docket No. 14-116 at 1 (July 24, 2014).

effectively prohibited Wilson from expanding its network to the five adjacent counties that comprised its electric service territory.[243] North Carolina's state legislature enacted these restrictions in a bipartisan vote, after incumbent ISPs—Time Warner Cable, CenturyLink, and AT&T—spent over one million dollars lobbying in favor of the bill,[244] and gave campaign contributions to several of the bill's co-sponsors.[245] Because Wilson's network predated the restrictions, it was "grandfathered" (exempted) from some of the bill's provisions, but not all.[246] The provisions that still applied effectively precluded Wilson from expanding its network.[247]

Together, Wilson and Chattanooga petitioned the FCC for preemption of these state restrictions, which would grant them the right to expand their municipal broadband networks.

A. The New FCC Grants Preemption, but Under Section 706

Chattanooga and Wilson submitted their 2014 preemption petitions to a very different FCC, politically speaking, from the agency that rejected Missouri Municipals' preemption petition a decade earlier. Missouri Municipals' petition was rejected under FCC Chairman William Kennard, a Clinton appointee whose FCC took a "cautious approach to Internet issues"[248] and

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243 *See* City of Wilson, 30 FCC Rcd. 2408, 2427 (2015).

244 *See id*. at 2426.

245 *See* David Hudnall, *What's Standing Between Rural North Carolina and Reliable Internet Service?*, INDYWEEK (Nov. 9, 2016), http://www.indyweek.com/indyweek/whats-standing-between-rural-north-carolina-and-reliable-internet-service/Content?oid=5084640 [http://perma.cc/GW8R-G3KL] ("Legislators from both sides of aisle [sic] supported HB 129. Marilyn Avila, a Republican representing Wake County, sponsored the bill. Campaign finance reports show that Avila has received over $20,000 from Time Warner Cable, AT&T, and CenturyLink since 2010. A cosponsor of HB 129, Democrat William Wainwright, received over $13,000 from those three companies before his death in 2012. Another Democratic cosponsor, Becky Carney, has received $12,000 from AT&T, Time Warner Cable, and CenturyLink since 2008. The fourth cosponsor, Julia Howard, a Republican representing Forsyth, received $6,000 from those companies prior to her vote.").

246 *See* Brief of Intervenor in Support of Respondents City of Wilson, Tennessee v. FCC, 832 F.3d 597 (6th Cir. 2016) (Nos. 15-3291/3555), 2015 WL 6854344, at *18.

247 *Id.*

248 Elizabeth Wasserman, *Congress Doubts FCC Up to Managing Internet*, CNN (Mar. 16, 1999, 11:16 AM EST), http://www.cnn.com/TECH/computing/9903/16/fcc.idg [http://perma.cc/3LRH-T8C2]; *see also* John Simons, *FCC Chief Talks a Tough Game, but Backs Down on the Key Issues*, WALL STREET J. (June 19, 1998, 11:59 PM ET), http://www.wsj.com/articles/SB8981395816309000 [http://perma.cc/DED3-63D9] (echoing this view).

who now serves on the Board of Directors at AT&T.[249] When President Obama appointed Tom Wheeler, a former lobbyist for telecommunications firms, to lead the FCC, former clients Comcast and AT&T were enthused, while consumer groups worried he would continue to defer to incumbent ISP interests.[250] But Wheeler did not follow his predecessors' timidity.[251]

Once appointed, Wheeler "turn[ed] the FCC into a sharply pro-consumer and pro-competition agency."[252] Wheeler seemed to relish picking fights with "the industry that he used to represent,"[253] and earned a reputation as a "Dragonslayer"[254]

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249 *See William Kennard Joins AT&T Board of Directors*, AT&T NEWSROOM (Nov. 7, 2014), http://about.att.com/story/william_kennard_joins_att_board_of_directors.html [http://perma.cc/4SNP-MFS9]. The FCC, like some other government agencies, frequently operates with a "revolving door": regulators move from working for the agency to working for companies the agency regulates, and vice versa. Kennard's successor, Michael Powell (son of former Secretary of State Colin Powell), now leads the National Cable and Telecom Association, which spends millions of dollars each year lobbying on behalf of its clients, including its largest client, Comcast. Some have argued the "revolving door" often creates a conflict of interest at the agency, leading regulators to advance industry goals over the public interest. John Dunbar, *The FCC's Rapidly Revolving Door*, CTR. FOR PUB. INTEGRITY (Feb. 19, 2003, 12:00 AM), http://www.publicintegrity.org/2003/02/19/6581/fccs-rapidly-revolving-door [http://perma.cc/83PW-HNQ5]; One particularly high-profile example of a potential conflict of interest at the FCC came in 2011, when FCC Commissioner Meredith Atwell Baker joined Comcast just four months after approving its merger with NBC Universal. *See* Sam Gustin, *Is Broadband Internet Access a Public Utility?*, TIME (Jan. 9, 2013), http://business.time.com/2013/01/09/is-broadband-internet-access-a-public-utility [http://perma.cc/TB8L-X5XH] ("After spending a year as a top tech advisor to President Obama, Crawford concluded that federal policy makers have little incentive to upset the telecom and cable giants . . . . This has led to what some legal scholars call 'regulatory capture' at the Federal Communications Commission . . . .").

250 *See* Jon Brodkin, *Uh-Oh: AT&T and Comcast are Ecstatic about the FCC's New Chairman*, ARS TECHNICA (May 1, 2013, 5:40 PM), http://arstechnica.com/tech-policy/2013/05/uh-oh-ats-new-chairman [http://perma.cc/CUS4-S5UL].

251 One exception is FCC Commissioner Mignon Clyburn's "brief, ridiculously productive reign" as interim FCC Chairwoman for six months in 2013. Chris Zeigler, *The Brief, Ridiculously Productive Reign of FCC Chairwoman Mignon Clyburn*, VERGE (Nov. 4, 2013) http://www.theverge.com/2013/11/4/5065070/the-brief-ridiculously-productive-reign-of-fcc-chairwoman-mignon-clyburn [http://perma.cc/JY7H-W6EC].

252 Nilay Patel, *The Dragonslayer*, VERGE (Mar. 9, 2016), http://www.theverge.com/2016/3/9/11181450/fcc-chairman-tom-wheeler-interview-5g-internet-net-neutrality [http://perma.cc/X9ZT-XZ7S].

253 Jon Brodkin, *Why the Ex-Cable Lobbyist Running the FCC Turned Against His Old Clients*, ARS TECHNICA (May 1, 2013, 11:44 AM), http://arstechnica.com/business/2015/02/why-the-ex-cable-lobbyist-running-the-fcc-turned-against-his-old-clients [http://perma.cc/X8AU-VH5J].

254 Patel, *supra* note 252.

who would ensure that powerful incumbents such as Comcast, Verizon, and AT&T followed net neutrality rules, obeyed users' privacy, and reserved wireless spectrum for competitive carriers.[255] In other words, Wheeler may have been the "closest thing to a true populist the modern FCC has ever had."[256]

Both Wheeler and President Obama were strong public proponents of public broadband. Both traveled to areas with community broadband networks and promoted their potential. In June 2014, Wheeler publicly stated that the FCC, if given the opportunity, would "exercise[] its power to preempt state laws that ban or restrict competition from community broadband."[257] Less than one month later, Chattanooga and Wilson submitted their preemption petitions to the FCC.

After evaluating the two petitions, the FCC preempted the relevant provisions of Tennessee and North Carolina laws that restricted broadband service, finding that preemption in these cases would "expand broadband investment and deployment, increase competition, and serve the public interest."[258] Instead of issuing preemption under section 253, the FCC issued it under section 706. The latter section broadly authorized the FCC to use "'regulating methods that remove barriers to infrastructure investment,'" and where broadband is not adequately deployed, to take "immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market."[259] Because the FCC found that

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[255] *See id. But see* Karl Bode, *Trump, GOP Prepare to Gut FCC Boss Tom Wheeler's Populist Reforms . . . Under the False Banner of Populist Reform*, TECHDIRT (Nov. 18, 2016, 6:26 AM), http://www.techdirt.com/blog/netneutrality/articles/20161117/05533336066/trump-gop-prepare-to-gut-fcc-boss-tom-wheelers-populist-reformsunder-false-banner-populist-reform.shtml [http://perma.cc/ME6H-N4FN] ("Wheeler's tenure floundered a bit at the tail end thanks to the agency's refusal to seriously address zero rating, sneaky industry fees, or usage caps and unreliable meters. Even then, most consumers will remember Wheeler fondly as the first FCC Commissioner in the broadband era from either party that was at least willing to actually listen to the will of the public—a public that's sick to death of uncompetitive broadband markets caused by letting AT&T, Verizon, and Comcast quite literally write protectionist laws that only serve to ensure market dysfunction continues.").

[256] *Id.* ("While the future is uncertain, one thing seems likely: Wheeler's shortcomings on subjects like zero rating are going to seem downright charming compared to the regulatory landscape currently being constructed by the next administration. Tom Wheeler, the man who went from dingo to net neutrality hero, was the closest thing to a true populist the modern FCC has ever had.").

[257] *See* Tom Wheeler, *Removing Barriers to Competitive Community Broadband,* FCC BLOG (June 10, 2014, 4:17 PM), http://www.fcc.gov/news-events/blog/2014/06/10/removing-barriers-competitive-community-broadband [http://perma.cc/W9T4-9LHF].

[258] *See* City of Wilson, 30 FCC Rcd. 2408, 2413 (2015).

[259] *See id.* at 2412 (footnotes omitted).

broadband service was not adequately deployed, the agency argued that it had section 706 authority to remove barriers to infrastructure investment, including by preemption of certain state laws.[260]

The FCC was careful to distinguish its preemption here from its earlier position in *Missouri Municipal League*. Unlike in *Missouri Municipal League*, the agency argued, the "clear statement rule" does not apply because the FCC's action does not alter the inherent structure of state government. Both Wilson and Chattanooga had underlying state authorization to construct their municipal broadband networks.[261] Whereas in *Missouri Municipal League* the Court had been concerned that even with preemption a municipality would still be powerless to provide telecommunications service absent express permission from its state, the FCC explained, permission to provide service was not at issue here.[262] The FCC said that its Clinton-era decisions concerning the scope of section 253 were not controlling here, and that the questions at issue here were narrower in scope.[263]

Although section 253 addressed preemption, the FCC argued, the agency is not required to act pursuant to section 253. Section 706 would suffice to serve as an alternate, "often complementary source of authority . . . [available] regardless of whether section 253 would or would not also apply here."[264] Finally, the FCC argued, the *Missouri Municipal League* Court had sided with the FCC's interpretation of the scope of its regulatory authority, and courts should do the same here. Here the FCC's "expert judgment" favored preemption under section 706, so the FCC asked for deference in granting these preemption petitions.[265]

The FCC's decision to grant preemption to Chattanooga and

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260 *See id.*

261 In both cases, authorization to construct municipal broadband networks is limited in scope to specific geographic areas. Tennessee law prohibits EPB in Chattanooga from providing telecommunications services beyond its electric service footprint, *see id.* at 2443, and North Carolina law prohibits Greenlight in Wilson from providing services outside of Wilson County, *see id.* at 2452.

262 *See id.* at 2412 ("The *Nixon* Court was concerned that, if Missouri's flat ban on municipal telecommunications were preempted, 'the municipality would still be powerless to enter the telecommunications business in the absence of some further, authorizing legislation.' However, that is not a concern for our interpretation of §706, which would allow preemption only in cases of underlying authorization.").

263 *See, e.g.*, *id.* at 2474 ("More fundamentally, these petitions present a different, narrow question than did *Nixon*, as a comparison to the *Nixon* Court's reasoning makes clear.").

264 *See id.* at 2476.

265 *See id.* at 2476-77 ("[I]n *Nixon*, the Court was affirming the Commission's view. In this case, however, the Commission has reached the conclusion that preemption is necessary . . . . [t]o the extent that this reflects the Commission's expert judgment . . . it would merit deference.").

Wilson was not unanimous, and both Republican appointees dissented. Commissioner O'Rielly declared the Order both "legally infirm and bad policy."[266] He criticized expanding the FCC's section 706 authority and declared his categorical opposition to any government entity offering broadband or any other communications service.[267]

By contrast, then-Commissioner Pai's dissent made no normative statement about the merits or drawbacks of municipal broadband. Instead, in a dense dissent he termed "Constitutional Law 101," Commissioner Pai argued that the FCC's decision to grant preemption violated the separate sovereignty of states guaranteed by the Tenth Amendment, "treating Tennessee and North Carolina as mere appendages of federal government rather than the separate sovereigns that they are."[268] He argued that the *Missouri Municipal League* case already decided that the FCC lacked preemption authority under section 253.[269] Moreover, under his analysis, section 706 did not delegate to the FCC any substantive authority, which meant that the agency lacked authority under section 706 to issue any preemption of state law whatsoever, not just in this case.[270] If section 253 was insufficient authority to grant preemption, Commissioner Pai argued, section 706 "falls even further short of the mark."[271]

Soon after the FCC granted preemption, attorneys general for Tennessee and North Carolina filed for judicial review of the order, and the cases were consolidated before the Sixth Circuit Court of Appeals. Like Commissioner Pai, the Sixth Circuit did not believe the FCC had adequately distinguished *Missouri Municipal League*. It reversed the FCC's preemption order.

B. The Sixth Circuit Overturns The FCC's Section 706 Attempt

The Sixth Circuit's three-judge decision—with two judges in favor and one concurring in part and dissenting in part—came

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266 *See id.* at 2519 (O'Rielly, Comm'r, dissenting).

267 *Id.*

268 *Id*. at 2518 (Pai, Comm'r, dissenting); *see id*. at 2506-07 (discussing the Tenth Amendment, dual sovereignty, and the need for "great skepticism" when federal legislation would interfere with states' governance over their political subdivisions, including cities).

269 *See id*. at 2508-09.

270 *See id.* at 2517 ("In short, whether one looks at the statute's text, structure, or history, only one conclusion is possible: Congress did not delegate substantive authority to the FCC in section 706 of the Telecommunications Act."); *see also* Tennessee v. FCC, 832 F.3d 597, 608 (6th Cir. 2016) ("Commissioner Pai also contended that §706 did not grant the FCC *any* preemption authority whatsoever.").

271 *See* City of Wilson, 30 FCC Rcd. at 2508.

down to the question of whether the FCC had adequately distinguished *Missouri Municipal League*. The judges ruled that the FCC had not, and so *Missouri Municipal League*'s "clear statement" rule still applied. They reversed the FCC's order.

The Sixth Circuit held that *Missouri Municipal League* was still controlling, given the similarity between that case and the questions at issue here.[272] The Court argued that a "one-way ratchet" similar to that described in *Missouri Municipal League* could also occur here if the Court of Appeals accepted FCC preemption under section 706: States could grant municipalities authority to operate broadband, but would be unable to place conditions on that service, since the FCC could preempt those conditions under section 706.[273]

Given the *Missouri Municipal League* precedent, the Sixth Circuit's holding was understandable,[274] and the FCC did not appeal the ruling.[275] So long as *Nixon v. Missouri Municipal League* was good law and Congress had not clarified "any entity" to mean, e.g., "any entity including public and private and non-profit entities and political subdivisions," it was difficult for the FCC to show it had preemption authority distinct from that case.[276] Since in *Missouri Municipal League*

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272 *Tennessee*, 832 F.3d at 611 ("The present case involves two states that likewise have made discretionary determinations for their political subdivisions. [*Missouri Municipal League*] is therefore analogous regarding the clear statement rule and supports the rule's applicability in this case.").

273 *Id.* ("The FCC sought to distinguish *Nixon* on the ground that there is a difference between preempting a state-law ban on municipal telecommunications providers and preempting state laws regulating municipal broadband providers for which the state has given an underlying authorization. The distinction, however, does not hold up . . . . [A] related anomaly, and one equally intrusive on state-municipal relations, is presented. States can flatly prohibit municipalities from engaging in telecommunications altogether, but they cannot do it in limited steps or with conditions based on the governmental nature of the municipalities. This state of affairs, in short, would be at least as anomalous a result.").

274 *Cf.* Karl Bode, *Appeals Court Strikes Down FCC Attempt to Eliminate Protectionist State Broadband Laws*, TECHDIRT (Aug. 10, 2016, 1:04 PM), http://www.techdirt.com/articles/20160810/10425135209/appeals-court-strikes-down-fcc-attempt-to-eliminate-protectionist-state-broadband-laws.shtml [http://perma.cc/SBX9-23YE] ("While the FCC may have been well intentioned, all three Judges noted that the law simply doesn't give the FCC the authority to strip out chunks of state law . . . . While the FCC may have gotten too creative under the scope of the law, the end result of the ruling is unfortunate all the same.").

275 Andy Sher, *FCC Won't Appeal Sixth Circuit Court's Decision on Municipal Broadband*, GOV'T TECH. (Aug. 31, 2016), http://www.govtech.com/network/FCC-Wont-Appeal-Sixth-Circuit-Courts-Decision-on-Municipal-Broadband.html [http://perma.cc/8BZ7-ZE54].

276 Chairman Pai's preemption dissent accurately predicted the Sixth Circuit's general reasoning. *See City of Wilson*, 30 FCC Rcd. at 2508 ("[I]f section 253 could not clear the high hurdle presented by *Gregory*, section 706 falls even further short of the mark.").

the Supreme Court determined that the statement "any entity" was in fact insufficiently clear to justify FCC preemption under section 253, it would have been a leap for the Sixth Circuit to have allowed FCC preemption under section 706, which does not reference preemption power at all. As the Sixth Circuit held, "it can hardly be argued that section 706 is a clearer directive than section 253; the directives in section 706—to remove barriers and promote competition—do not make clear whether public entities are included."[277]

To the FCC's credit, the Sixth Circuit's holding was a "limited one," which did not question the "public benefits that the FCC identifies in permitting municipalities to expand Gigabit [broadband] Internet coverage."[278] Unfortunately, the ruling effectively ended municipal broadband in some areas, including in Wilson's nearby towns.

For example, before the ruling Wilson's broadband network had connected its publicly owned network to hundreds of households in the nearby town of Pinetops, population 1,300. Wilson was already providing Pinetops with electricity, so the marginal cost of providing broadband was low.[279] Its network was a relief for Pinetops' residents, offering speeds up to twenty-five times faster than the aging connections of Pinetops' only broadband provider, CenturyLink DSL.[280] After the ruling, however, Wilson would be prohibited from offering paid broadband service to Pinetops and a nearby family farm.[281] For six months, Wilson held out and provided Pinetops with free broadband access, hoping North Carolina's state legislature would repeal its public broadband restriction.[282] Pinetops' local government met with North Carolina's governor and asked for his help repealing the state law. One town commissioner,

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277 *Tennessee*, 832 F.3d at 613.

278 *Id.*

279 *See Greenlight Service to Pinetops*, WILSON, N.C. (Mar. 27, 2017), http://www.wilsonnc.org/communications/greenlight-service-to-pinetops [http://perma.cc/9NMA-DLS9] ("We already had a fiber connection to the substation serving Pinetops, so the remaining infrastructure was inexpensive to install.").

280 Jon Brodkin, *Muni ISP Forced to Shut Off Fiber-to-the-Home Internet After Court Ruling*, ARS TECHNICA (Sept. 16, 2016, 12:29 PM), http://arstechnica.com/information-technology/2016/09/muni-isp-forced-to-shut-off-fiber-to-the-home-internet-after-court-ruling [http://perma.cc/5WTC-34KS].

281 *See* Cecilia Kang, *Broadband Law Could Force Rural Residents Off Information Superhighway*, N.Y. TIMES (Aug. 28, 2016), http://www.nytimes.com/2016/08/29/technology/broadband-law-could-force-rural-residents-off-information-superhighway.html [http://perma.cc/6SF5-TH4Y].

282 Lisa Gonzalez, *Wilson To Offer Greenlight to Pinetops at No Charge*, COMMUNITY NETWORKS (Oct. 25, 2016), http://muninetworks.org/content/wilson-offer-greenlight-pinetops-no-charge [http://perma.cc/MJZ8-Q5LH]

whose business relied on the high-speed network, pleaded: "We just can't go back in time."[283]

After a year of uncertainty, the North Carolina legislature granted Wilson a "temporary extension" that allowed it to use its electric grid to keep providing fiber-optic broadband service to Pinetops and the nearby farm.[284] But the bill had a major exception: if any privately owned provider ever offers Pinetops a similar service, Wilson must shut down its service to Pinetops—thus giving any future provider another broadband monopoly, with the right to charge accordingly.

VI. CONCLUSION: PUBLIC BROADBAND'S PATH AHEAD

> *"I'd hate to sit here and keep bashing AT&T . . . I wouldn't care if we ever made a dime on this network, as long as it would pay for itself. If it could increase and do the things with education, health, safety, and economic development—man, that's a win. That's a huge win."*
>
> —Larry Gates (Utilities Director, Chanute, Kansas)[285]

The Sixth Circuit's 2016 holding in *Tennessee v. FCC* shows that the ghost of *Missouri Municipal League* still haunts the FCC, and prevents it from being the champion of public broadband that former Chairman Wheeler and former President Obama had hoped it could be.

Looking ahead, proponents of public broadband could try to build public networks where it is legal, and fight to meet or overturn restrictions where it is not, including by pushing lawmakers to revive and vote on the Community Broadband Act in Congress. With every effort, they should expect heavy resistance from well-financed ISP lobbies. More "proof-of-concept" success stories like Chattanooga's may help move political levers.

The new leadership at the FCC, headed by Chairman Pai, does not bode well for the prospect that the FCC will aid cities in deploying public broadband networks. But leadership does

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283 Lisa Gonzalez, *"We Just Can't Go Back in Time": Pinetops Calls for Repeal of State Law*, COMMUNITY NETWORKS (Sep. 23, 2016), http://muninetworks.org/content/we-just-cant-go-back-time-pinetops-calls-repeal-state-law [http://perma.cc/E5QE-P4K3].

284 Act of July 25, 2017, 2017 N.C. SESS. LAWS 180, http://www.ncleg.net/Sessions/2017/Bills/House/HTML/H396v4.html [http://perma.cc/W73C-ZWGE].

285 Colin Neagle, *Inside the Tiny Kansas Town Battling Cable Lobbyists over Municipal Broadband*, NETWORK WORLD (Feb. 26, 2014, 6:00 AM), http://www.networkworld.com/article/2174702/lan-wan/inside-the-tiny-kansas-town-battling-cable-lobbyists-over-municipal-broadband.html [http://perma.cc/B64K-Y4WZ].

change, and perhaps in a few years a "Dragonslayer" will again head the agency and take up this cause. If she does, she should encourage Congress to clarify the meaning of "any entity" in section 253 to include municipally owned utilities. She could ask Congress for an up-or-down vote on whether or not the statute provides the FCC authority to preempt non-neutral state laws that prohibit local governments from providing broadband. Given the widespread bipartisan public support for the right to offer public broadband, national attention could help.

Even if Congress does not take a vote, a recent federal court ruling upholding Title II reclassification of broadband service suggests growing public recognition of the essential nature of broadband service.[286] For this reason, the FCC may have more success if it again uses section 253 to selectively preempt state laws that unfairly restrict public broadband. If brought to court, the agency could follow a different approach than it did before the Sixth Circuit. Instead of distinguishing *Missouri Municipal League*, the agency should admit it made a mistake when it denied the Missouri Municipals' preemption petition in 2004. Given broadband's subsequent concentration into an oligopoly of providers, and a "crazy quilt" where only some cities can offer broadband and others cannot, the FCC should ask the Court to join the agency in reversing the legacies its twenty-year-old decisions have left.

Like electricity, broadband has grown from a luxury to an essential part of public life. Like electricity, citizens should have the right to choose to pool their resources and entrust their local government to provide it. There are many forms of public broadband, and cities should be able to choose the model that best fits their needs.

When Franklin D. Roosevelt campaigned for Americans' right to own their own electric utilities, he argued that every big public electric project "will be forever a national yardstick to prevent extortion against the public and to encourage the wider use of that servant of the people— electric power."[287] Publicly funded broadband networks can be the new yardstick to prevent extortion against the public and encourage wider

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[286] *See, e.g.*, Rebecca R. Ruiz & Steve Lohr, *F.C.C. Approves Net Neutrality Rules, Classifying Broadband Internet Service as a Utility*, N.Y. TIMES (Feb. 26, 2015), http://www.nytimes.com/2015/02/27/technology/net-neutrality-fcc-vote-internet-utility.html [http://perma.cc/T225-7MYA] (upholding the FCC's classification of broadband providers as "common carriers" under Title II); *see also* WU, *supra* note 162, at 58 ("At the heart of common carriage is the idea that certain businesses are either so intimately connected, even essential, to the public good, or so inherently powerful—imagine the water or electric utilities—that they must be compelled to conduct their affairs in a nondiscriminatory way.").

[287] Roosevelt, *supra* note 7.

Internet use.

So far, public broadband networks have shown that they can deliver high-speed broadband at affordable rates. In areas where a broadband market failed to materialize, it may be time for communities to realize that Roosevelt's "birch rod"[288] is a better solution than waiting for the private market to improve on its own.

Public power did not come easy. Public broadband will not come easy, either. But as the number of successful public networks grows, combined with widespread bipartisan public support for these efforts, public broadband advocates have plenty of reasons to see a bright future ahead.

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[288] *Id.*

EXHIBIT 24

NOTE

Casting a Wider 'Net: How and Why State Laws Restricting Municipal Broadband Networks Must Be Modified

*Jeff Stricker**

ABSTRACT

One of Congress's purposes in passing the Telecommunications Act of 1996 was to encourage the widespread deployment of broadband Internet. As municipalities began constructing their own broadband networks, private sector Internet service providers, alarmed at the prospect of competing with these public networks, pushed back with lobbying campaigns encouraging states to enact laws prohibiting these municipal networks. This, in turn, slowed broadband deployment, particularly in areas that private providers believed to be unprofitable (and thus left unserved). Municipalities challenged these laws under the Telecommunications Act, arguing that the Act preempted the state laws, but the Supreme Court in Nixon v. Missouri Municipal League*, 541 U.S. 125 (2004), upheld the state prohibitions, clearing the way for even more states to adopt such prohibitions. Today, twenty-one states have statutes restricting municipal networks, leaving many Americans without affordable broadband Internet access.*

This Note argues that Congress should amend the Telecommunications Act to overcome Missouri Municipal League *and preempt state laws restricting municipal broadband network deployment. Through preemption, state legislatures will be forced to revise or repeal overly restrictive statutes, paving the way for more reasonable restrictions that balance the importance of af-*

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fordable broadband with the need to protect private companies from direct competition with publicly funded entities. This Note next analyzes selected provisions of current state laws and proposes either to eliminate them as overly restrictive, modify them to be less restrictive, or retain them. The result is a framework of a balanced state law that protects private sector interests while also encouraging broadband deployment.

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INTRODUCTION

A few years ago, Michael and Amy Tiemann decided to build and operate a cutting-edge recording studio in Pittsboro, North Carolina,[1] a rural town of 3,555 people.[2] In addition to the high startup costs of the studio, such as sophisticated equipment, Mr. Tiemann discovered that establishing a broadband Internet connection to the studio was one of the greatest challenges of the project because the area around the studio lacked broadband infrastructure.[3] "I spent more than two years begging Time Warner [Cable] to sell me a service that costs 50 times more than it should," he explained, "and that's after I agreed to pay 100 percent of the installation costs for more than a mile of fiber [optic cable]."[4] Mr. Tiemann was fortunate enough that his career path as a pioneer in computer software development provided him with the capital necessary to afford such installation.[5] But most Pittsboro residents do not have the same financial resources as Mr. Tiemann, given that the median family annual income is merely $63,411.[6]

Mr. Tiemann and others like him faced immense difficulty in obtaining broadband in part because North Carolina passed House Bill 129, titled "Level Playing Field/Local Government Competition," in May 2011.[7] Without that law, Mr. Tiemann and other businesses and residents of Pittsboro might have worked together with their local government to find a solution to their lack of broadband access, possibly by way of a municipal broadband network that could provide service at an affordable rate.

The North Carolina statute "essentially barr[ed] [municipal broadband networks] from the consumer market," leaving Mr. Tiemann and others similarly situated across North Carolina with no al-

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1 Monica Chen, *Chapel Hill's High Hopes for Broadband Quashed by Law*, TRIANGLE BUS. J. (June 17, 2011), http://www.bizjournals.com/triangle/print-edition/2011/06/17/chapel-hills-high-hopes-for-broadband.html?page=all.

2 U.S. CENSUS BUREAU, *2006-2010 American Community Survey 5-Year Estimates: Demographic and Housing Estimates*, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_5YR_DP05 (last visited July 25, 2012).

3 Chen, *supra* note 1.

4 *Id.*

5 *About Us*, MANIFOLD RECORDING, http://www.manifoldrecording.com/people.php#michael (last visited Jan. 11, 2013). While Mr. Tiemann's finances are not discussed, based on his impressive career it is safe to assume that Mr. Tiemann possessed sufficient resources to accomplish his goals.

6 U.S. CENSUS BUREAU, *2006-2010 American Community Survey 5-Year Estimates: Selected Economic Characteristics*, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_5YR_DP03 (last visited July 31, 2012).

7 H.B. 129, Gen. Assemb., 2011 Sess. (N.C. 2011), 2011 N.C. Sess. Laws 84 (codified at N.C. GEN. STAT. § 160A-340 (2012)).

ternative but to continue to beg Time Warner and other Internet service providers ("ISPs") for service, usually at great cost to the consumer.[8] Where, as in Mr. Tiemann's case, the local telecommunications provider is clearly reluctant to enter a small unserved market at a reasonable price for consumers, a public network might be able to provide broadband Internet at an affordable rate.

Mr. Tiemann's problem is not unique to North Carolina. In fact, when North Carolina's bill passed in May 2011,[9] nineteen states already had enacted legislation restricting or banning municipal broadband networks to the detriment of underserved communities.[10] Such legislation has been a point of contention between private telecommunications companies and residents and businesses in underserved communities with, or seeking to build, municipal broadband networks. In North Carolina, Governor Bev Perdue declined to take a concrete position on the bill when she refused to sign or veto it (resulting in its enactment).[11] Governor Perdue explained, "My concern with House Bill 129 is that the restrictions the General Assembly has imposed on cities and towns who want to offer broadband services may have the effect of decreasing the number of choices available to their citizens," and she urged the legislature to reconsider the law.[12]

State restrictions similar to North Carolina's leave underserved municipalities caught in a bind: the private sector is unwilling or unable to provide sufficient broadband access at an affordable price, but the municipality is effectively prohibited from building its own network to compensate for the private sector's refusal to enter the market. Consequently, residents and businesses in the vast majority of these municipalities are denied broadband Internet access, severely limiting their ability to conduct business and enjoy the many benefits broadband Internet offers.[13]

This Note argues that many current state laws which prohibit or effectively prohibit municipal broadband networks will continue delaying high-speed Internet access to individuals and businesses in un-

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8 Chen, *supra* note 1.

9 2011 N.C. Sess. Laws 84.

10 John Blevins, *Death of the Revolution: The Legal War on Competitive Broadband Technologies*, 12 YALE J.L. & TECH. 85, 110 (2009).

11 Rob Christensen, *Perdue Urges Rethinking of New Broadband Law*, NEWS & OBSERVER (Raleigh, NC), May 21, 2011, at 3B.

12 Press Release, Office of Governor Bev Perdue, Governor Perdue's Statement on House Bill 129 (May 20, 2011), http://www.governor.state.nc.us/NewsItems/PressReleaseDetail.aspx?newsItemID=1861.

13 *See infra* Part I.B.

derserved communities, causing negative social and economic impacts.[14] To reduce delays in broadband deployment, state regulations should reasonably protect the private sector from government-funded competitors when such competition is likely to take place, but should also granting municipalities leeway to construct broadband networks when the private sector is unable or unwilling to provide service at reasonable rates.

This Note proposes specific provisions that states choosing to regulate municipal broadband networks should include in their regulations to protect private industry. This Note also highlights some existing state law provisions that should be stricken because they are overly protective of the private sector to the detriment of consumers.

To effect timely modification of overly restrictive state laws, this Note further proposes that the federal government take action. The most effective means of changing existing state rules is to use § 253(a) of the Telecommunications Act of 1996[15] to preempt state laws which prohibit or effectively prohibit municipalities from operating broadband networks. In order to overcome preemption, states with overly burdensome regulations would be forced to revise their laws to be less restrictive. However, the Supreme Court has interpreted § 253(a) in such a way that preemption is impossible at present.[16] Thus, this Note proposes that Congress amend § 253(a) with language making clear its application to laws targeting municipal entities (and not just private entities).

Part I of this Note sets the stage for the discussion by defining key technical terms, laying out the parameters of the substantive debate, and explaining the present state of affairs at both the federal and state levels. Part II presents this Note's two-pronged solution: Section A addresses how federal preemption can compel states to repeal or revise overly restrictive laws, and Section B evaluates existing state laws, highlighting some that should be modified or repealed. Part III contains additional justifications for this Note's proposed solutions beyond those presented in Part II, including the economic and social benefits of municipal broadband and how municipally-sponsored broadband deployment mirrors other successful municipal infrastructure deployments in this nation's history. Finally, Part IV identifies and rebuts potential counterarguments to the proposed solution.

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14 *See infra* Part I.B.

15 Telecommunications Act of 1996, Pub. L. No. 104-104, § 101, 110 Stat. 56, 70 (codified at 47 U.S.C. § 253(a) (2006)).

16 *See infra* Part I.F.

I. THE LEXICON, LIMITS, AND LAW OF THE DEBATE

A. Terminology and Availability of Broadband

Before exploring the substantive issues, some fundamental terminology must be defined and parameters must be established. "Broadband" is a relatively vague term without a generally accepted definition. Commonly thought of as Internet connections faster than dial-up, broadband is often understood in terms of speed. In 1999, the Federal Communications Commission ("FCC") defined broadband as an Internet connection capable of minimum speeds of 200 kilobits per second for both download (from the Internet to the user's computer) and upload (from the user's computer to the Internet).[17] Eleven years later, the FCC decided the prior definition was outdated and adopted a new definition requiring download speeds of at least four megabits per second and upload speeds of at least one megabit per second.[18] The FCC considers these speed benchmarks to be the "minimum speed required to stream a high-quality . . . video while leaving sufficient bandwidth for basic web browsing and email," or, put another way, the FCC now considers this standard Internet usage.[19]

Under such a definition, the FCC estimates that out of 3230 counties in the United States, 1024 of them completely lack broadband service, resulting in about 24 million Americans without broadband access.[20] Moreover, these unserved areas, often rural, are typically far less densely populated than the national average population density.[21] The FCC concluded that "broadband is not being deployed to all Americans in a reasonable and timely fashion," and, most critically, that "market forces alone are unlikely to ensure that the unserved minority of Americans will be able to obtain the benefits of broadband anytime in the near future."[22]

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17 Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, 25 FCC Rcd. 9556, 9558 (July 20, 2010).

18 *Id*. at 9559. Using the International System of Units, one megabit is the equivalent of 1,000 kilobits, i.e., one megabit per second is the equivalent of 1,000 kilobits per second. *See The NIST Reference on Constants, Units, and Uncertainty*, NAT'L INST. OF STANDARDS & TECH., http://physics.nist.gov/cuu/Units/prefixes.html (last visited Jan. 12, 2013).

19 25 FCC Rcd. at 9559.

20 *Id.* at 9570.

21 *Id.* at 9571–72 (explaining that the average household density of the unserved counties is 46.8 households per square mile as compared to the average U.S. county, which has a household density of 108.2 households per square mile).

22 *Id.* at 9574.

B. The Need to Stay Wired

While wireless networks are one option in broadband deployment, this Note only considers wire-based networks for three reasons. First, wired networks tend to offer faster speeds and more reliable connections than wireless systems because the shortage of wireless spectrum prevents wireless systems from offering connections with comparable speed and reliability.[23] Second, wireless broadband networks are subject to greater FCC regulation than wired networks, making them more difficult to build and operate.[24] Third, municipal wireless broadband can serve as both a primary and secondary source of broadband access and in many cases has taken on the latter character.[25] Such secondary source public networks are immaterial to this Note because they exist as a feature of convenience for residents in areas that already have broadband access.[26] For these reasons and others, wired systems are preferable even considering the greater cost in bringing them to unserved communities.[27]

The benefits of high-speed Internet to both ordinary citizens and businesses are numerous and linked directly to broadband's greater speeds. For individuals, broadband performs critical functions such as assisting people in finding employment and facilitating communication and education in addition to offering great convenience and entertainment value.[28] Broadband also gives businesses the ability to expand their operations globally, find more and better customers and

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23 *See* Alex Goldman, *The FCC Decision and the Use of White Spaces*, WIRELESS INTERNET SERV. PROVIDERS ASS'N (Oct. 12, 2010, 8:30 AM), http://web.archive.org/web/20110718180958/http://www.wispa.org/?p=3146 (accessed by searching for http://wispa.org/?=p3146 in the Internet Archive index) (explaining that lack of radio spectrum availability and interference from nearby spectrum pose great challenges for companies seeking to offer wireless broadband); *see also WiMAX Offers Less Bang Than Fiber, Panelists Say*, COMMC'NS DAILY, Mar. 31, 2009, *available at* 2009 WLNR 6205749 [hereinafter *WiMAX Offers Less Bang*] (explaining that wireless broadband cannot support a large number of users without losing speed and reliability).

24 *See* Goldman, *supra* note 23 (discussing impact of FCC's power usage restrictions and "height above average terrain" antenna restrictions on wireless Internet services providers).

25 Catherine A. Middleton, A Framework for Investigating the Value of Public Wireless Networks 10 (Aug. 15, 2007) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2118153.

26 *See id.* at 16–17. Because wireless broadband is technologically inferior to wired Internet options, those who are willing to pay for Internet connectivity are "highly unlikely to subscribe to public Wi-Fi as their primary source of Internet connectivity if other options are available." *Id. See generally* Sharon E. Gillett, *Municipal Wireless Broadband: Hype or Harbinger?*, 79 S. CAL. L. REV. 561 (2006) (discussing municipal wireless broadband networks).

27 *See WiMAX Offers Less Bang, supra* note 23.

28 *The Benefits of Broadband*, OFFICIAL ST. OF MICH. WEBSITE, http://www.michigan.gov/broadband/0,1607,7-250-48184_48185—-,00.html (last visited Aug. 26, 2012).

suppliers, streamline operations, advertise more efficiently, and recruit employees.[29] The result is a substantial net benefit to the community, as communities with high-quality broadband networks are more likely to attract and retain businesses, offer greater educational opportunities, provide government services more efficiently, and attract tourists.[30] Speed is key, as slower, non-broadband Internet connections render most of these benefits unobtainable either because of the time required to access the benefits or because the Internet products and services cannot be transmitted to users lacking broadband access.[31]

C. The Expense of Expansion

Although broadband is critical to individuals and businesses nationwide, Internet Service Providers ("ISPs") are reluctant to enter more remote or less populated markets.[32] Put simply, it is quite expensive to build out a wired broadband network.[33] The nature of wired broadband deployment requires large up-front costs of construction, essentially capital expenditures,[34] as broadband connections require running wires to customers' homes or businesses.[35] However, once these up-front deployment costs are paid, the network is relatively cheap to operate.[36] Thus private ISPs price their service above transmission costs so as to recoup their capital outlay.

From a business standpoint, this sort of capital expenditure is more easily justified in densely populated areas, as the more densely populated an area is, the more customers there are within range of the network and available to pay for it.[37] Consequently, major metropolitan areas tend to have multiple private ISPs offering broadband ser-

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29 *Id.*

30 *Id.*

31 *Getting Broadband*, FED. COMMC'N. COMM., http://www.fcc.gov/guides/getting-broadband (last visited Nov. 8, 2012).

32 Richard Bennett & Robert D. Atkinson, *ITIF Analysis of FCC Broadband Deployment Report*, INFO. TECH. & INNOVATION FOUND. (July 21, 2010), http://www.itif.org/publications/itif-analysis-fcc-broadband-deployment-report.

33 *Id*. (discussing "the high cost of bringing wireline broadband to remote areas," and explaining "[i]t's very difficult to justify a ten mile trench or hundreds of new telephone poles just to reach a single cattle ranch").

34 *See* David Clark, A Simple Cost Model for Broadband Access: What Will Video Cost? 2 (Aug. 27, 2008) (unpublished manuscript), http://cfp.mit.edu/publications/docs/DDC.Cost.analysis.TPRC.R1.pdf.

35 *See id.* at 6 (estimating the costs of connecting the ISP to the user's premises).

36 *See id.* at 7 (estimating that data transmission costs, exclusive of network connection, might fall somewhere in the ten to twenty cents per gigabyte range).

37 *See* Bennett & Atkinson, *supra* note 32.

vice, because ISPs can more quickly recover their fixed costs of construction from the larger customer base.[38]

However, in less densely populated areas, the fixed costs will either take longer to offset[39] or require that a higher price be charged to customers.[40] Using these principles, private ISPs can calculate the likely profitability of expanding to unserved markets and determine whether it is worth expanding to serve the market.[41] Unfortunately, the more isolated and less densely populated the area, the less likely it is that the fixed costs of construction will ever be recouped, and thus such areas remain unserved.[42]

D. The New Hope of Municipal Broadband

Faced with these unforgiving economic realities, municipalities with large unserved areas began developing plans to create broadband networks, embracing their potential to "help bridge the digital divide" where private ISPs refused to offer service.[43]

One particularly successful municipal broadband project is in Cedar Falls, Iowa, where the local public utility, Cedar Falls Utilities ("CFU"), began selling fiber-optic broadband service in 1996.[44] While the project took eight years to become relatively cash-flow neutral,[45] in both 2008 and 2009, CFU's communications network had operating income of approximately $2.37 million, a figure which climbed to nearly $3 million in 2010.[46]

While one city's example is no guarantee that all municipal networks will enjoy financial success, successful projects like CFU indicate that the municipal broadband idea is at least economically feasible. The benefits of affordable broadband access are so important to a community that making a profit should not be the overarch-

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38 *See id.*

39 This assumes a smaller customer base paying the same price as a large customer base.

40 *See* Bennett & Atkinson, *supra* note 32.

41 *See id.*

42 *See id.*

43 *See* Blevins, *supra* note 10, at 105 (internal quotation marks omitted).

44 MICHAEL J. BALHOFF & ROBERT C. ROWE, BALHOFF & ROWE, LLC, MUNICIPAL BROADBAND: DIGGING BENEATH THE SURFACE 35–36 (Sept. 2005), http://www.balhoffrowe.com/pdf/Municipal%20Broadband—Digging%20Beneath%20the%20Surface.pdf.

45 *Id.* at 36.

46 Balance Sheet, Mun. Commc'ns Util. of the City of Cedar Falls, Iowa 1 (2011), http://auditor.iowa.gov/reports/1123-0046-C000.pdf. CFU provided both cable television and broadband Internet services over its network. *Id.*

ing goal.[47] The main purpose of municipal broadband should be to provide an increasingly necessary public service, not turn a profit.

E. The Private Sector Strikes Back to Curb Municipal Broadband

Fearing encroachment upon their traditional territorial domination, their ability to expand at their own pace, and their ability to choose which customers they will serve, private ISPs were quick to begin an aggressive campaign against municipal networks.[48] The campaign included lobbying for state laws restricting or banning such municipal networks as well as lawsuits to stifle their development.[49]

While all of the private ISPs' efforts are too extensive to list here, two are worth noting. First, the Wisconsin legislature approved a state-sponsored broadband network planned primarily for educational purposes.[50] The University of Wisconsin was supposed to manage the network and sell service to other schools throughout the state.[51] However, before the build-out of the network got very far, a group of thirty independent incumbent Wisconsin private ISPs (the same ISPs that declined to serve many potential customers for the state-sponsored project) filed multiple lawsuits and petitioned the Governor to delay and prevent the network's construction.[52] Delayed for over a year now, the project remains trapped in administrative and judicial limbo.[53]

The second example comes from Pennsylvania where private ISPs staged a massive lobbying campaign that amassed nearly $5.3 million in fees for registered lobbyists between 2003 and 2004.[54] Of that sum, over $3.1 million came from Verizon Communications, Inc. alone.[55] The lobbying effort paid off for the private ISPs: in late 2004 the state legislature passed a law prohibiting new municipal broadband projects[56] subject only to certain highly restrictive exceptions.[57]

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47 *See infra* Part II.B.

48 *See* Blevins, *supra* note 10, at 107–08.

49 *See id.* at 107 ("Simply put, incumbent broadband providers used law to stifle municipal broadband in its infancy.").

50 *See Wisconsin Local Operators Seek to Block Stimulus Funded Broadband Project*, COMMC'NS DAILY, Aug. 31, 2011, *available at* 2011 WLNR 17510498.

51 *See id.*

52 *See id.*

53 *See id.*

54 D. Stan O'Loughlin, *Preemption or Bust: Fear and Loathing in the Battle over Broadband*, 28 CARDOZO L. REV. 479, 491 (2006).

55 *Id.* Verizon had previously spent less than $500,000 politicking during the prior three state election cycles. *Id.*

56 66 PA. CONS. STAT. § 3014(h) (2012).

In addition to Pennsylvania and Wisconsin, private ISPs were successful in persuading a number of other states to pass laws preventing municipalities from constructing broadband networks.[58] The watershed battle in the fight to legislate municipal broadband out of existence took place in Missouri.

F. Missouri Municipal League *and § 253(a) Preemption*

In 1997, Missouri passed a law which effectively[59] prohibited a "political subdivision" of the state from selling telecommunications services or facilities to public or private ISPs.[60] In response, a group of Missouri municipalities, municipally-owned utilities, and municipal organizations petitioned the FCC for a declaration that the statute was preempted by § 253 of the Telecommunications Act of 1996.[61]

Specifically, the petitioners asked the FCC to find that the Missouri statute violated § 253(a) of the Telecommunications Act, which states, "No State or local statute . . . may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service."[62] Under § 253(d), the FCC is empowered to "preempt the enforcement of such statute . . . to the extent necessary to correct such violation or inconsistency" with § 253(a).[63]

The FCC determined that the Telecommunications Act did not preempt the Missouri statute because the term "any entity," as used in the statute, was not intended to include Missouri's own political subdivisions.[64] Although the FCC found in favor of the state, the FCC made it clear that its decision was only following binding legal precedent.[65] Perhaps more importantly, the FCC's opinion stated that the policy behind the Missouri statute was in conflict with the goal of the

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57 *See infra* Part II.B.3.

58 *See* Blevins, *supra* note 10, at 109–10.

59 One of the exceptions is that a municipality may sell telecommunications service only to private ISPs on a "nondiscriminatory, competitively neutral basis, and at a price which covers cost" as though the municipal network were acting as a private, for-profit entity. MO. REV. STAT. § 392.410(7) (2012). However, due to the narrowness of the exceptions and the fact that the law effectively foreclosed municipalities from building broadband networks, the Supreme Court deemed these exceptions "not pertinent" in preemption analysis. Nixon v. Mo. Mun. League, 541 U.S. 125, 129 n.1 (2004).

60 MO. REV. STAT. § 392.410(7) (2012).

61 *Mo. Mun. League*, 541 U.S. at 129.

62 47 U.S.C. § 253(a) (2006).

63 *Id.* § 253(d).

64 Mo. Mun. League, 16 FCC Rcd. 1157, 1158 (2001), *vacated*, 299 F.3d 949, 952 (8th Cir. 2002), *rev'd*, 541 U.S. 125 (2004).

65 *Id.* at 1162.

Telecommunications Act to promote broadband deployment, especially in rural areas.[66]

The municipalities scored a victory, though, when their appeal to the Eighth Circuit resulted in a unanimous reversal of the FCC's decision.[67] The appellate court held that the plain meaning of the words "any entity" included municipalities, despite the heightened standards imposed when federal law preempts a state's regulation of its own political subdivisions.[68]

But the victory was short lived: less than two years later, the Supreme Court overturned the Eighth Circuit and upheld the Missouri statute's validity for four reasons.[69] First, a state law regulating municipalities cannot be preempted because the municipality is not a separate entity from the state under the meaning of "entity" in § 253.[70] Second, even if the Missouri statute were preempted, municipalities would not inherently have the authority to build telecommunications networks absent a grant of such authority from the state.[71] The first and second reasons lead to the third: even if the statute was preempted and authority to build the network existed, the state could simply cut off funding for the network's construction or maintenance via budgeting decisions.[72]

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66 *Id.* ("[T]he legal authorities that we must look to in this case compel us to deny the Missouri Municipals' petition . . . . The Commission has found that municipally-owned utilities and other utilities have the potential to become major competitors in the telecommunications industry. In particular, we believe that the entry of municipally-owned utilities can further the goal of the 1996 Act to bring the benefits of competition to all Americans, particularly those who live in small or rural communities." (footnotes omitted)).

67 The procedure of preempting a statute under § 253(a) begins with a party petitioning the FCC for preemption. The FCC then renders a decision on preemption which is reviewable by the applicable United States Circuit Court of Appeals for the jurisdiction in which the state law was challenged. In this case, that Circuit Court was the Eighth Circuit. *See Mo. Mun. League*, 299 F.3d 949, 951–52.

68 *Id.* at 952–53.

69 *See Mo. Mun. League*, 541 U.S. at 128–29.

70 *Id.* at 134 ("[W]hen a government regulates itself (or the subdivision through which it acts) there is no clear distinction between the regulator and the entity regulated. Legal limits on what may be done by the government itself (including its subdivisions) will often be indistinguishable from choices that express what the government wishes to do with the authority and resources it can command.").

71 *Id.* at 135 ("But what if the FCC did preempt the restriction? The municipality would be free of the statute, but freedom is not authority, and in the absence of some further, authorizing legislation the municipality would still be powerless to enter the telecommunications business.").

72 *Id.* at 136 ("Surely there is no contention that the Telecommunications Act of 1996 by its own force entails a state agency's entitlement to unappropriated funds from the state treasury, or to the exercise of state bonding authority.").

Finally, the Court expressed concern that preemption would create a "national crazy quilt" of states where such networks were legal in some states and illegal in others.[73] States that had previously granted municipalities the authority to build such networks would be preempted if they tried to revoke that authority by legislation, but states that had never granted such authority in the first place could validly ban municipal networks.[74] The "crazy quilt" would not only be confusing, but would also be the product of federal law as opposed to "free political choices" at the state level.[75]

In the aftermath of *Missouri Municipal League*, the private sector intensified its efforts to eliminate municipal broadband networks. ISPs initiated enforcement actions in states with existing legislation regulating municipal broadband networks and increased lobbying efforts to have regulations passed in states without them.[76] Private ISPs also launched a publicity campaign, using media outlets to portray municipal networks as anticompetitive.[77] More importantly, the timing of these efforts (and the new legislation which resulted) was significant for the private ISPs, as many municipalities were in the process of planning and financing broadband projects nationwide.[78]

Thanks in large part to the substantial lobbying effort discussed above, at least twenty-one states have some sort of legislative barrier to municipal broadband networks.[79] Of these twenty-one, Arkansas,[80] Missouri,[81] Nebraska,[82] and Texas[83] have total prohibitions on new municipal networks. And while all of the states' restrictions vary in their comprehensiveness, they all limit the availability of reliable

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73 *Id.*

74 *Id.* at 137 ("A State or municipality could give the power, but it could not take it away later[,] . . . for the law expressing the government's decision to get out [of the telecommunications business] would be preempted.").

75 *Id.* at 136.

76 Anthony E. Varona, *Toward a Broadband Public Interest Standard*, 61 ADMIN. L. REV. 1, 98 (2009).

77 *See* O'Loughlin, *supra* note 54, at 490.

78 *See* Blevins, *supra* note 10, at 109.

79 *See id.* at 110 (noting that at least nineteen state legislatures have created barriers to entry on municipal broadband). Since Blevins wrote in 2009, two other states have enacted restrictions on municipal broadband. *See* 2011 N.C. Sess. Laws 84; 2012 S.C. Acts 284.

80 ARK. CODE ANN. § 23-17-409(b) (2012). This statute provides a small exception for pre-existing city-owned electric utilities or "television signal distributors" to operate data networks. *Id.* § 23-17-409(b)(2).

81 MO. REV. STAT. § 392.410(7) (2012).

82 NEB. REV. STAT. § 86-594 (2012).

83 TEX. UTIL. CODE ANN. § 54.201 (West 2011).

broadband Internet access to citizens in their respective underserved communities.[84]

II. The Two-Pronged Solution

Though this Note does not dispute that the free market should govern when ISPs are willing to compete, ISPs should not be able to suppress competition in markets they have no intention of entering even if that competition comes from a public entity. But the line between cases where the ISPs are legitimately nervous about their ability to compete with municipal networks or where they simply want to suppress any and all forms of competition is often difficult to discern. In the municipal broadband context, there has been a strong lobby led by the private ISPs against municipal networks expressing a legitimate fear that the private sector will be unable to compete effectively with publicly subsidized or funded broadband networks.[85] But there has been a relatively strong outcry against state laws prohibiting municipal networks from both ordinary citizens[86] and the federal government.[87] For example, in May 2011 FCC Commissioner Michael Copps spoke at a telecommunications conference in North Carolina, imploring all states to stop and reverse the trend of prohibiting municipal broadband networks.[88]

Despite no clear consensus regarding the value of direct competition between the private sector and municipalities in the consumer broadband market, there is a workable compromise that will quickly get underserved communities municipal broadband Internet access while protecting private ISPs' economic interests. This Note highlights new and amended statutory provisions that would further two critical purposes of municipal broadband networks: (1) to incentivize private ISPs to expand their networks more rapidly, alleviating the need for municipal networks, and (2) to fill the remaining gaps in service that the private ISPs are unwilling to enter even when faced with the prospect of losing potential customers to municipal networks. To achieve this goal, legislation should make municipal networks permissible when circumstances are such that the private sector is unwilling to provide broadband service at reasonable rates.

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84 *See infra* Part II.B.

85 *See supra* Part I.E.

86 *See, e.g.*, Chen, *supra* note 1.

87 Ted Gotsch, *Copps Calls on States to Allow Municipalities to Offer Broadband*, TR Daily, May 10, 2011, *available at* 2011 WLNR 9347480.

88 *Id.*

This Note proposes a two-pronged solution. At the federal level, Congress should amend § 253 so that it applies expressly to public entities, thus overruling *Missouri Municipal League* by granting the FCC the power to declare overly restrictive state laws preempted. Such federal action would force state legislatures either to reconsider their laws or simply stand by as the overly burdensome state laws are preempted. At the state level, this Note identifies provisions of current state laws which have particularly important effects on municipalities' ability to construct and operate broadband networks and discusses how those provisions should be modified or eliminated.

A. The Federal Prong: Amending § 253 per Missouri Municipal League

Because the industry lobby has proven so strong even in the face of public opposition,[89] it is unlikely that states will suddenly begin resisting lobbying efforts and reverse their restrictive laws. Thus, proposals for modifying state laws alone are insufficient to exact any meaningful change. Accordingly, the best way to compel states to reconsider their statutes is to have federal law preempt those state laws which effectively prohibit public entities from providing telecommunications services. However, in light of *Missouri Municipal League*, federal action is now necessary for preemption to occur.

There are two viable options to overcoming *Missouri Municipal League*: the Supreme Court could overturn its own precedent or Congress could amend § 253 to meet the requirements set out by *Missouri Municipal League* and reach the state statutes in question. Although either remedy would suffice, this Note focuses on the congressional solution.[90]

1. The Proposed Amendment to § 253(a)

Congress should amend § 253(a) so that it expressly applies to states and their own political subdivisions. To illustrate this point, consider the following (the bold text is added to the current language

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89 North Carolina is a prime example, as the issue was so contentious that the Governor refused to sign or veto the bill. *See supra* Introduction.

90 The fact is that eight Justices felt the language of § 253 is not clear enough to hold that preemption applied to statutes affecting public entities, so it is unlikely the Court would change its tune and side with Justice Stevens if the matter arose again. Given the relative ease with which Congress could remedy the statute's flaw to the Court's satisfaction, a congressional solution is best. Moreover, a discussion arguing the merits of overturning the Court's majority opinion would require delving into an entirely separate area of law, state sovereignty, which would detract from the primary focus of this Note.

of § 253(a)): "No State or local statute . . . may prohibit or have the effect of prohibiting the ability of any entity, INCLUDING PUBLIC ENTITIES, to provide any interstate or intrastate telecommunications service."[91] Including some form of the term "public entities" in the statute, a phrase borrowed from *Missouri Municipal League*,[92] would overcome the Court's conclusion that "Congress used 'any entity' with a limited reference to any private entity," and thus expressly include the state laws discussed in this Note under the "preemption net" of § 253.[93]

2. The Need for an Amendment to § 253(a)

Amending § 253 in this way would likely sway the votes of at least two members of the majority still on the Court today, Justices Scalia and Thomas, who concurred in the judgment because § 253(a) "simply does not provide the clear statement which would be required . . . for a statute to limit the power of States to restrict the delivery of telecommunications services by their political subdivisions."[94] The two even agreed with the majority's conclusion that preemption "would have several unhappy consequences" but did not feel "that the avoidance of unhappy consequences is adequate basis for interpreting a text."[95]

The majority opinion also put heavy emphasis on this state sovereignty issue and the statutory language necessary to overcome it.[96] Though it also relied on policy justifications, the majority opinion concluded "that § 253(a) is hardly forthright enough" due to "[t]he want of any 'unmistakably clear' statement" in § 253(a) that it applies to public entities.[97]

In his dissenting opinion, Justice Stevens argued that such an amendment is unnecessary, as he found the majority's conclusion that "any entity" includes all entities except for "*municipally owned* entities" incorrect.[98] Justice Stevens argued that the majority's interpreta-

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91 47 U.S.C. § 253(a) (2006). The bold text is not part of the statute and was added merely for illustrative purposes. It is not intended to be any sort of formal or concrete proposal for how exactly to amend the language of § 253(a).

92 Nixon v. Mo. Mun. League, 541 U.S. 125, 132–33 (2004).

93 *See id.* (stating in part that "public and private" is often used "when both are meant to be covered").

94 *Id.* at 141 (Scalia, J., concurring).

95 *Id.*

96 *Id.* at 140–41.

97 *Id.*

98 *Id.* at 143 (Stevens, J., dissenting).

tion had to be based on one of the assumptions that either Congress did not know public utilities existed or that it purposefully disregarded public utilities in drafting § 253, and that both assumptions are "manifestly implausible" based on the great number of public utilities in the country.[99]

Justice Stevens pointed out another flaw in the majority's reasoning, highlighting another section of the Telecommunications Act of 1996 that contains a more narrowly tailored definition of "utility."[100] The Pole Attachments Act[101] specifically excludes entities "owned by the Federal Government or any State" from its definition of "utility,"[102] and the term "State" includes "any political subdivision, agency, or instrumentality," of the state.[103] It is thus unlikely that Congress intended to restrict § 253 not to apply to public entities because elsewhere in the Telecommunications Act Congress specifically addressed public entities when it wished to treat them differently.[104]

While Justice Stevens's argument is compelling, it is of little help as a practical matter given that the other eight Justices felt differently.[105] Thus, an amendment to § 253 is necessary if there is to be a significant chance for state-level reform via preemption. However, even if § 253 is amended, it is possible that the Supreme Court might invalidate the amended version on policy grounds, as the six-Justice majority opinion also expressed a number of concerns with the potential efficacy of such an amendment in practice[106]—concerns now ripe for discussion.

3. Responding to Further Preemption Concerns

An amendment to § 253 might still face difficulties in the Supreme Court, as the six-Justice majority opinion went beyond the textual issue, reasoning that there would be minimal positive effects from preemption because states would remain free to restrict municipal networks by denying municipalities the authority to construct them.[107]

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99 *Id*.

100 *Id*. at 143–44.

101 47 U.S.C. § 224 (2006).

102 *Id.* § 224(a)(1).

103 *Id.* § 224(a)(3).

104 *Mo. Mun. League*, 541 U.S. at 143–44 (Stevens, J., dissenting).

105 *See generally id.* at 128–41 (majority opinion).

106 *See id.* at 133–40 (discussing hypothetical scenarios and criticizing the dissent's positions).

107 *See id.* at 134 ("[P]reempting a ban on government utilities would not accomplish much if the government could not point to some law authorizing it to run a utility in the first place.").

Even without a law banning such networks, municipalities would still need the power to build them, as "freedom is not authority, and in the absence of some further, authorizing legislation the municipality would still be powerless to enter the telecommunications business."[108]

However, this argument is insufficient as a basis for refusing to allow preemption for two reasons. First, as Justice Stevens pointed out in his dissenting opinion, § 253(a) preempts laws that impinge on the "*ability*" of an entity to enter the telecommunications business, and the state laws at issue here most certainly inhibit the ability of municipalities to enter the market even in the absence of authority to enter (because even should that authority be granted, the law would prohibit entry).[109] Justice Stevens then extended this argument to say that § 253 prevents states from revoking authority already granted to municipalities, as such revocation would be equally prohibitive of an entity's ability to enter the market as would a law banning municipal networks.[110] But those states which had not yet granted municipalities the authority to construct or operate broadband networks would be under no obligation to do so as a result of § 253, even in its hypothetically amended version.[111]

This leads to one of the majority's primary policy arguments: that the result of preemption would be a "national crazy quilt" of states, some of which would permit municipal networks and others that did not grant municipalities authority to operate such networks.[112] Justice Stevens countered this argument with the simple yet astute observation that failure to preempt statutes prohibiting municipal networks has the same effect, as a "national crazy quilt" of states with and without such inhibitive statutes would be allowed to exist.[113] As Justice Stevens put it, "That the 'crazy quilt' . . . is the product of political choices made by Congress rather than state legislatures renders it no more absurd than the 'crazy quilt' that will result from leaving the matter of municipal entry entirely to individual States' discretion."[114] Indeed Justice Stevens's prediction has proven quite accurate, as the

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108 *Id.* at 135.

109 *See id.* at 145 (Stevens, J., dissenting).

110 *Id.*

111 *See id.*

112 *Id.* at 136 (majority opinion).

113 *Id.* at 145–46 (Stevens, J., dissenting).

114 *Id.* at 146 (citation omitted).

twenty-one states that have passed such legislation vary greatly in their levels of prohibition.[115]

Moreover, the majority's practical assessment of the situation is contrary to that of the FCC, as even the majority recognized that the FCC "denounced the policy behind the Missouri statute" because it "substantially disserved the policy behind the Telecommunications Act."[116] The majority opinion intentionally "put[s] aside" the position of the FCC in this regard, though, as "it does not follow that preempting state or local barriers to governmental entry into the market would be an effective way to draw municipalities into the business," and the value of municipal broadband is not relevant to the resolution of the issues presented in the case.[117]

The policy arguments the majority opinion advances are difficult to embrace due to the opinion's conscious disregard for the benefits of municipal broadband. Furthermore, even the majority's legal policy arguments (e.g., the national crazy quilt) are unavailing. Justice Stevens recognized the majority's mistake in this regard when he noted that preemption under § 253 is not automatic but rather hinges on a case-by-case determination to be made by the FCC.[118] The FCC's role in preemption determinations would avoid the majority's "hypothetical absurd results"[119] because the FCC can consider all the issues of each case (including both the general and legal policy issues) before making a determination. Justice Stevens argued, "Rather than assume that the FCC will apply . . . [§ 253] improperly," the better solution is to allow preemption of state laws applying to public entities and permit the FCC to make its determinations.[120]

With preemption as a possible available remedy, the next Section addresses the second prong of the proposed solution: the substantive analysis of existing state law provisions and how to modify them to achieve the purposes of municipal broadband networks.

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115 *See supra* text accompanying notes 79–84. *See generally infra* Part II.B (discussing various approaches and laws which restrict municipal broadband networks).

116 *See Mo. Mun. League*, 541 U.S. at 130–31. The position of the FCC was that municipal broadband networks would "further the goal of the 1996 Act to bring the benefits of competition to all Americans, particularly those who live in small or rural communities in which municipally-owned utilities have great competitive potential." *Id.* at 131.

117 *Id.* at 131–32.

118 *See id.* at 147 (Stevens, J., dissenting).

119 *Id*.

120 *See id.* at 147–48.

B. The State Prong

With many state laws restricting municipal broadband networks in different ways and to different degrees, a comprehensive, one-size-fits-all solution to meet any one state's particular circumstances is a pipedream. Instead, this Note focuses on a number of specific provisions contained in some states' laws, explaining how those provisions can be improved or why they should be done away with entirely. To clarify how each provision discussed should be treated, this Section is subdivided into three subparts: (1) provisions to eliminate, (2) provisions to modify, and (3) provisions to retain.

The provisions to eliminate include outright bans and wholesale service restrictions. The provisions to modify include those raising municipal entry costs, those restricting public financing, those mandating referenda, those restricting pricing and cross subsidies, and those imposing a number of other operating restrictions. Those provisions which should be retained in essentially their current form include those mandating feasibility studies before construction, those mandating appeals to the private sector to provide broadband service before construction, and those exempting unserved areas from many of the restrictions.

1. Provisions to Eliminate

There are two major restrictions present in state laws that should be phased out entirely from any legislation regulating municipal broadband: outright bans on municipal networks and restrictions limiting municipal networks to only wholesale service sales. These restrictions are overly prohibitive of municipal entry to the broadband consumer market and thus should not be included in legislation.

a. Outright Bans

Arkansas, Missouri, Nebraska, and Texas all have total bans on municipal networks.[121] Such total bans are patently repugnant to the spread of broadband service, as they remove municipalities from the list of potential entrants to the market. Or, in § 253's framework, total bans are the most prohibitive of an entity's ability to enter the market.[122] Therefore, such total bans should be entirely eliminated.

The impact of a total ban is twofold. First, the ban prevents municipalities from providing the critical broadband service their citizens

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121 *See supra* notes 80–83.

122 47 U.S.C. § 253 (2006).

demand and may even require. Second, the ban may delay the expansion of private ISP broadband networks to unserved areas by removing municipalities as potential entrants to the broadband market.[123] Laws preventing the entire class of public entities from entering the broadband market discourage private ISPs from expanding more aggressively, if they choose to expand at all, because there is no threat that a municipal provider will be first to reach an untapped market.[124] Thus, such total bans should be scrapped in their entirety.

b. Wholesale Service Restrictions

Another troubling type of restriction that should be eliminated is found in Washington and Nevada, where public utilities are only allowed to sell telecommunications service wholesale, not to end users.[125] Although the law in Nevada prohibits cities with populations exceeding 25,000 from selling telecommunication service to the "general public," municipalities below 25,000 are apparently free to construct their own networks.[126] In theory, even those cities governed by the statute can construct and maintain certain telecommunication facilities so long as the services those facilities provide are not sold to the general public.[127] The theory behind this type of restriction is that the municipality invests in the infrastructure and maintains it but must then contract out the retail sale of such service to private parties.[128] The goal is to keep the private sector involved and allow for some competition between retailers to help keep prices reasonable for consumers.[129]

However, such restrictions have proven contrary to the quest for broadband expansion. While the municipal infrastructure can be helpful, the additional steps between investment and service provision

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123 Mo Xiao & Peter F. Orazem, *Entry Threat and Entry Deterrence: The Timing of Broadband Rollout* 25 (NET Institute, Working Paper No. 07-09, 2007), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1025121 ("[T]he mere threat of entry may alleviate market power associated with oligopolistic market structure . . . .").

124 *See id.* ("In industries such as telecommunications services, our results imply that policies encouraging entry will play an important role in determining the timing of the provision of new services to local markets.").

125 WASH. REV. CODE § 54.16.330 (2012); NEV. REV. STAT. § 268.086 (2012).

126 NEV. REV. STAT. § 268.086.

127 *See* William Lehr et al., Broadband Open Access: Lessons from Municipal Network Case Studies 10–13 (Sept. 2004) (unpublished manuscript), http://people.csail.mit.edu/wlehr/Lehr-Papers_files/Lehr%20Sirbu%20Gillett%20Broadband%20Open%20Access.pdf (explaining the options available to a municipality in wholesale-only jurisdictions and their implications for competition).

128 *See id*.

129 *See id.*

add uncertainty and expense to the mix, which can make the project less appealing to municipalities.[130] In fact, Washington's legislature is currently considering proposed legislation to permit public entities to sell telecommunications services directly to consumers.[131] The bill explains that unserved and underserved areas have persisted under the roughly seven years of the wholesale-only restriction and that the aim in removing the restriction is to speed the deployment of broadband service to those areas.[132] The bill grants municipalities the ability to operate networks with a great deal of autonomy and limited restraints and is currently under active consideration with hearings held as recently as mid-January 2012.[133]

While such wholesale-only restraints have apparently failed in Washington, there may be valid reasons for a municipality to impose such a restraint on itself in building a network in some cases. Just as there should not be a requirement that municipalities only sell broadband service wholesale, there also should be no requirement that they only sell broadband service at retail. Instead, each municipality should remain free to weigh its options in light of its unique circumstances, as in some cases a municipality's self-imposed restraint of wholesale-only sales may be appropriate. Such a self-imposed restraint may be useful in enticing private ISPs' cooperation in the project, rather than having the private ISPs view the project as a threat and seek to block it. Using such a self-imposed restraint as an incentive for cooperation with the private sector could avoid much of the fighting that tends to derail or increase the cost of municipal broadband projects. Despite this provision's potential utility in some municipal contexts, a statewide requirement that all municipal networks sell service only wholesale is overly broad and restrictive. Consequently, these bans should be removed leaving the choice to municipalities.

2. Provisions to Modify

This Section presents five categories of restrictions that certain states have enacted that, with some modifications, are not unduly re-

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130 *See id.* at 27 ("Open access can only work if private companies find it in their interest to act as 3rd-party service providers . . . .").

131 *See Bill Information: HB 1711*, WASH. ST. LEGISLATURE, http://apps.leg.wa.gov/billinfo/summary.aspx?bill=1711&year=2011 (last visited Jan. 16, 2013).

132 H.B. 1711, 62d Leg., 1st Spec. Sess. (Wash. 2011) ("In an effort to reach those areas of the state that are unserved or underserved, it is the intent of the legislature to grant public utility districts the authority to provide retail telecommunications services, including broadband . . . .").

133 *See Bill Information: HB 1711*, *supra* note 131.

strictive of municipal networks: (1) restrictions which raise municipal entry costs into the broadband market, (2) restrictions on the use of public financing, (3) mandatory referenda, (4) restrictions on pricing and cross-subsidies, and (5) operating restrictions.

a. Raising Municipal Entry Costs

One legislative tactic to impede municipal networks is to add procedural requirements to the approval process that require time and expense to complete, thus raising the costs for a municipality attempting to construct a network. For example, Pennsylvania only allows municipalities to build their own networks if they obtain permission to do so from local incumbent telecommunications service providers.[134] If the incumbent declines to provide the requested service, the municipality may then construct its network.[135] Based on the terms of the statute, though, a local incumbent could theoretically delay the project by as much as fourteen months without successfully providing comparable service.[136]

The danger here is the potential for delay. At a minimum, a private incumbent not interested in providing service can simply run the clock for two months before the municipality can advance its planning and construction. Such delays can erode popular support for the public network or allow the incumbent additional time to exert political pressure at varying levels to derail the project. Worse still, the lack of penalties for incumbents who fail to provide the promised service leaves the door open for incumbents to act in bad faith. With the potential for delays and interference so great, the power over potential municipal networks in Pennsylvania has shifted almost fully to the incumbent private companies (even those not currently providing broadband service).

The likelihood of delays and hardships in dealing with the incumbents in this all-or-nothing way significantly raises entry costs for municipalities. Asking an incumbent for permission seems counterproductive, as it essentially asks the incumbent to give up some of its potential customers in the future, an unlikely outcome. Thus, the re-

134 66 PA. CONS. STAT. § 3014(h) (2012).

135 *See id.* § 3014(h)(2).

136 *See id.* After a municipality submits a written request to the local incumbent, the incumbent has two months to opt to provide the data speeds requested to the area. Should the incumbent opt to provide the service requested, it has fourteen months from the date the request was made in which to build out the network. The statute makes no mention of penalties or other repercussions for incumbents who choose to provide the service and fail to do so within the fourteen months.

quirement of permission from a local incumbent should be done away with and replaced with something more like North Carolina's mandatory appeal to the private sector.[137]

Florida's law raises entry costs for municipalities by requiring that each municipality develop a detailed business plan to "ensure that revenues exceed operating expenses and payment of principal and interest on debt within 4 years."[138] But four years is a relatively short period in which to turn cash-flow positive given the great expense of investing in infrastructure and the relatively long life such telecommunications systems are expected to serve.[139]

Moreover, the goal of municipal networks is to provide a critical service that the private sector has failed to provide, and thus, like other critical public services, the focus should be on delivering the service quickly, even if this means it takes longer to become cash-flow positive. How a municipality chooses to prioritize recoupment of its investment (i.e., the length of time, if ever, over which it expects to become cash-flow positive) should be determined by the municipality based on the exigencies of its particular situation.

However, the requirement of a business plan is not a provision that should be eliminated altogether. This requirement forces a municipality to look critically and objectively at the economic realities its network will impose upon the municipality, and requires the city to come up with a plan that will provide the service at a bearable cost. Thus, while the four-year restriction is overly burdensome, mandating that municipalities present some sort of a business plan (such as the feasibility studies Utah requires[140]) is a provision worth maintaining.

b. Restrictions on Public Financing

Restrictions on public financing for municipal networks are another tool used to impede the spread of municipal networks. For example, one of Florida's restraints requires special votes by elected representatives to approve the issuance of debt if the debt is to mature after fifteen years.[141] A more onerous example exists in North Carolina, where at least two public hearings must be held on the project before the municipality may apply to the state for permission to use

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137 *See infra* Part II.B.3.b.

138 FLA. STAT. § 350.81(2)(c)(4) (2012).

139 *Cf. supra* Part I.D (explaining the Cedar Falls, Iowa case and its eight-year path to cash-flow neutrality).

140 *See infra* Part II.B.3.a.

141 FLA. STAT. § 350.81(2)(e)(2).

public financing.[142] The state then conducts an independent review of the application before deciding whether to approve it.[143] As part of the review process, the public entity bears the burden of persuasion on all relevant issues, and the state will consider the "probable net revenues" of the project and issue a written report on the "reasonableness of the [public entity's] revenue projections."[144] These requirements in North Carolina are in addition to the municipality prevailing in a special election on whether the city should build the network in the first place.[145]

While there is certainly good reason for states to hold municipalities accountable for the debt they plan to incur, requirements that are as procedurally complex and difficult to navigate as North Carolina's serve largely to defeat the ability of municipalities to build networks. Florida's fifteen-year restriction, while somewhat arbitrary, is at least reasonable in that it simply requires an elected board to approve long-term debt without unduly restricting shorter-term debt. North Carolina, though, puts numerous hurdles between a municipality and its ability to build a network, including multiple public hearings, a referendum, and an application to the state. As discussed earlier,[146] even if successful on all the substantive matters, the delays a municipality faces in navigating the approval processes can be fatal to a network plan.

Consequently, states must walk a fine line when crafting legislation. While at face value North Carolina's restrictions seem harmless and well-intentioned in calling for public involvement and multiple levels of review, such redundancy and excessive scrutiny has tremendous efficiency costs and makes building municipal networks far less feasible. And while a bright line is difficult to draw, the Florida restraint is certainly preferable to North Carolina's in furthering the purposes of municipal broadband. Ideally states would go no further than a requirement that debt plans be included in some sort of overall business plan or feasibility study that must be presented prior to the municipality's governing body voting on whether to go forward with construction.[147]

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142 N.C. GEN. STAT. § 159-175.10 (2012).

143 *Id.*

144 *Id*.

145 *Id.* § 160A-340.4. See *infra* Part II.B.2.c for further discussion of these referenda.

146 *See supra* Part II.B.2.a.

147 *Compare supra* Part II.B.2.a, *with infra* Part II.B.3.a.

c. Mandatory Referenda

Some states have forced municipalities to prove that their citizens are on board with the network project before the project can proceed via mandatory local referenda. In addition to North Carolina,[148] Louisiana[149] and Colorado[150] are two such jurisdictions. Louisiana requires that, absent local rules to the contrary, a petition calling for a vote—signed either by fifteen percent of or ten thousand qualified electors, whichever is less—must be submitted within 180 days of submission of the project's feasibility study.[151] Alternatively, Colorado requires only that the ballot describe the "nature of the proposed service, the role that the local government will have in provision of the service, and the intended subscribers of such service."[152]

Here, again, arises the problem of excessive procedural hurdles. The only unique feature of telecommunications service provision by a government entity as compared to other government-provided services (such as electricity, water, sewers, and roads) is that the telecommunications industry is today predominantly administered by the private sector.[153] Therefore, where municipal governments see their entry as beneficial to the public interest in the telecommunications realm, the municipalities should not be subject to additional burdensome proofs of public approval above those the municipality would face in undertaking a project in any of the other aforementioned areas.

If local government is competent to make decisions in those other fields without state-level interference, there appears to be no good reason for a state to require a referendum in the telecommunications field.[154] These referenda serve only to further delay and potentially derail a project, as they present a prime opportunity for the private sector lobby to court voters. Special rules mandating referenda that

148 *See supra* text accompanying notes 142–44.

149 LA. REV. STAT. ANN. § 45:844.50 (2012).

150 COLO. REV. STAT. § 29-27-201 (2012).

151 LA. REV. STAT. ANN. § 45:884.50(G)(1).

152 COLO. REV. STAT. § 29-27-201(2).

153 O'Loughlin, *supra* note 54, at 484. One could argue that Internet service is a service best provided by local government, just as these other services already are. *See id.* at 487–88 ("According to proponents of 'municipal broadband,' these community-owned networks are a natural outgrowth of traditional municipal functions such as the building and maintaining of infrastructure and the providing of public services.").

154 In fact, the North Carolina statute considers the local government competent enough to determine when the public network should be sold or shut down, as the public entity "shall not be required to obtain voter approval . . . prior to the sale or discontinuance of the city's communications network." N.C. GEN. STAT. § 160A-340.1(b) (2012).

apply only to municipal broadband are thus inappropriate, but if a state has legislation that requires a referendum for any major municipal infrastructure project the referendum would not necessarily be unfair. In deciding whether to require a referendum, laws should treat municipal broadband projects the same as any other municipal infrastructure project.

d. Pricing and Cross-Subsidy Restrictions

State regulations can also include two key financial constraints on municipal networks, namely that service must be priced at or above cost and that the municipality may not cross-subsidize the public network via other city revenue sources. Both Florida[155] and North Carolina[156] have adopted such restrictions. The price restraints are designed to keep prices in line with what a private entity would charge so that municipalities cannot price out private competitors.[157] The cross-subsidy prohibition furthers the goal of preserving fair competition by preventing cost reductions (which could translate into price cuts) with revenues not associated with the service.[158]

While both of these restraints serve a critical function in preserving private ISPs' ability to compete effectively, they also impede public network construction by making the public network less financially viable.[159] Assuming private ISPs refuse to enter the market because they do not believe they can provide service at a profit, or even at a break-even point, no municipality would be able to enter an unserved market given these restraints. The entire reason for municipal networks in unserved markets is to overcome the private sector's unwillingness to enter the market. These restraints preventing cross-subsidies force cities to make the networks at least cash-flow neutral within a certain time, as otherwise the funding for the network's operation would run dry. Similarly, forcing prices up to the levels of cash-flow neutrality would price out many potential customers, thus depriving them of the benefit the municipality seeks to provide.

Instead of imposing such requirements up front and indefinitely, the more prudent course of action is to impose these restraints only when private competition is reasonably certain to enter the market.

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155 FLA. STAT. § 350.81(2)(f) (2012).

156 N.C. GEN. STAT. § 160A-340.1(a)(7).

157 *See* O'Loughlin, *supra* note 54, at 488–89.

158 *See id*.

159 *See* Hannibal Travis, *Wi-Fi Everywhere: Universal Broadband Access as Antitrust and Telecommunications Policy*, 55 AM. U. L. REV. 1697, 1771 (2006).

One solution is thus to amend these provisions to apply only upon a private ISP notifying the municipality that it plans to provide service in the relevant market along with proof of such intent and a plan with an estimate of when entry is expected. The municipality would then face a deadline to bring its prices in line with costs and to eliminate cross-subsidies so that once a private ISP enters the picture, the competition between the two is fair. Such a solution allows for maximum broadband distribution yet also preserves the private sector's ability to penetrate markets served by public entities.

e. Other Operating Restrictions

An additional two key operating restraints face municipal networks in some states: advertising restrictions and tax collection requirements. North Carolina imposes both.[160] First, North Carolina municipalities cannot advertise public network service on "a public, educational, or governmental access channel if the city requires another communications service provider to carry the channel," nor can they use resources not accounted for in the public network's books to promote the services.[161] Second, North Carolina's public networks must collect all applicable taxes and fees that a private ISP would collect and pay them to the relevant authorities, including the city's own general fund.[162]

As with price and cross-subsidy restrictions,[163] imposing advertising and tax restrictions is best reserved until competition appears reasonably certain. While the advertising restriction alone is relatively minor, it is still an impediment to efficient distribution of service, as it needlessly adds costs in unserved markets. The local government should be able to take advantage of its unique resources, such as public-access channels, to distribute the service more cost-effectively because it more efficiently furthers the goal of the public network to provide an otherwise unavailable yet critically important service in high-speed Internet.

That same logic translates to tax collection. While the municipality should reasonably expect to collect and pass along taxes and fees to other authorities (such as the state and federal governments), there seems to be little purpose served in requiring the city to pay taxes to itself other than to benefit private ISPs by raising municipal networks'

160 *See* N.C. GEN. STAT. § 160A-340.1(a).

161 *Id*. § 160A-340.1(a)(6).

162 *Id*. § 160A-340.1(a)(9).

163 *See supra* Part II.B.2.d.

costs. Instead of collecting this revenue to pay to itself, it makes more sense to permit the city to pass along those tax savings to customers as a price reduction to encourage adoption (if the city so chooses). However, should a private ISP announce its intent and ability to enter the market, fairness dictates that the city begin collecting the relevant taxes in the interest of fair competition.

3. Provisions to Retain

The following three types of provisions are worth keeping mostly unchanged because they offer the private sector a fair level of protection from public competition without unfairly delaying or otherwise inhibiting municipal networks. The first restriction, which requires municipalities to conduct feasibility studies before beginning construction, forces cities to think critically and obtain an objective analysis of the various impacts, both positive and negative, that the project will likely have. The second seeks to avoid battles between the private sector and municipalities by requiring municipalities to solicit broadband service from the private sector before building its own network. The third provision is unique from those previously discussed in that it creates a safe harbor from the restrictions imposed for municipalities that qualify as unserved.

a. Mandatory Feasibility Studies

One rather beneficial procedural obstacle that Utah has adopted is the mandatory feasibility study.[164] Utah's law requires that an outside consultant be retained to conduct a feasibility study, which plays a central role in the city's decision-making process.[165] The feasibility study must meet certain requirements, such as explanations of the impact the city's provision of telecommunications service will have on competition in the market,[166] whether a private party would provide the service if the city failed to do so,[167] the costs of construction,[168] projected demand growth for the service,[169] and projected revenues and expenses for the next five years.[170]

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164 UTAH CODE ANN. § 10-18-202(2) (LexisNexis 2012).

165 *Id.* § 10-18-203.

166 *Id.* § 10-18-203(2)(a)(ii).

167 *Id*. § 10-18-203(2)(b)(ii).

168 *Id*. § 10-18-203(2)(c)(i)–(ii).

169 *Id*. § 10-18-203(2)(d)(ii).

170 *Id*. § 10-18-203(2)(e)–(f).

Contrasted with requirements for cash-flow positivity, as exemplified by Florida's law,[171] Utah's feasibility study seems greatly preferable because its mission is to educate the municipality's decision-makers about the potentially harsh realities the city will face in its endeavor, rather than to impose onerous requirements on the project that may serve to undermine the project's prospects for success. Insofar as Utah's requirement meets this educational goal, it should be retained.

The key difference between the Florida approach and the Utah approach is the impact each has on the prospects for the municipal network's success in providing service. The Florida approach sets a high bar for the project to meet in order to avoid some form of termination, whereas the Utah approach lays out specific factors that the study must examine so that a better-informed decision can be made in the first place. This leaves the ultimate decision in the city's hands, as Utah only requires that the feasibility study result in a finding that the project can generate sufficient revenues to operate cash-flow neutral in the mid- to long-run.[172] While Utah's requirement of cash-flow neutrality may not be ideal, its imposition of a feasibility study remains a worthwhile one. Designed as an instrument to facilitate rational decision-making, the feasibility study is a highly valuable tool that states should require municipalities to invest in prior to deciding to construct a network.

b. Mandatory Private Sector Appeals

An innovative approach to resolving the public-private debate over municipal broadband is found in North Carolina's requirement that municipalities issue a request for proposals to private ISPs as part of the approval process.[173] Specifically, the city must make clear the nature and scope of broadband service it wants provided and explain what actions the municipality is prepared to take in facilitating service provision (e.g., subsidies, rights-of-way, tax incentives, etc.).[174] The municipality must then review the proposals it receives, considering "any relevant factors" including, but not limited to, technical matters, the proposer's experience in the market, and costs.[175]

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171 *See supra* Part II.B.2.a.

172 UTAH CODE ANN. § 10-18-202(3) (LexisNexis 2012).

173 N.C. GEN. STAT. § 160A-340.6(a) (2012).

174 *Id.* § 160A-340.6(b).

175 *Id*. § 160A-340.6(d).

A defining characteristic of North Carolina's system is that the municipality is then entitled to negotiate contracts with "any responsible proposer," bargaining over the relevant factors in order to ascertain which proposal will best suit the city's demands.[176] Once the city concludes its negotiations with all proposers and selects the most favorable proposal, a sixty-day window opens during which the city and that private company must finalize a contract, after which the city may open negotiations with the next-best proposer.[177] Should the municipality fail to reach an agreement with the next-best proposer, it may build its own network.[178]

On the one hand, this system suffers from the all-too-common flaw of adding procedural hurdles to the project, giving private ISPs the opportunity to needlessly delay the project simply by interacting for the sake of wasting time.[179] However, the negotiations permitted during this time make this system far superior to the requests for permission to build, as in Pennsylvania.[180] Such negotiations go to the heart of what the private ISPs want—the ability to provide service for profit—while allowing the municipality a chance to bring in the broadband Internet service at an affordable rate, perhaps via various forms of public subsidies. If successful, such negotiations will end in a compromise in which both sides get what they want, eliminating the need for protracted legal or public opinion battles. In the end, if the city still opts to build its own network, its actions will be out of necessity as the private sector will have opted not to enter the market on acceptable terms.

While this provision is quite reasonable as a middle ground, it in no way alleviates the need to reform other provisions in state laws, including North Carolina's. Other burdensome provisions weigh heavily against a municipality in its negotiations with private ISPs. In the context of this particular provision, the more difficult it is for a city to build a network, the less flexible private ISPs are likely to be in negotiations as they can be confident that even if negotiations fail the public network may still never materialize.

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176 *Id.*

177 *Id.* § 160A-340.6(f).

178 *Id.*

179 *See supra* Part II.B.2.a–d.

180 *See supra* Part II.B.2.a (describing Pennsylvania's requirement that incumbent ISPs have time to consider entering the market).

c. The Unserved Area Exemption

Recognizing the hardships faced by citizens in rural areas, some states have adopted the unserved area exemption, which protects municipalities deemed "unserved" by the private sector from the requirements of the statute. For example, North Carolina's version defines an unserved area as "a census block . . . in which at least fifty percent (50%) of households either have no access to high-speed Internet service or have access to high-speed Internet service only from a satellite provider."[181] Municipalities seeking this exemption must petition the North Carolina Utilities Commission for a determination that the area is unserved, at which time private ISPs may also object to the petition on any grounds that argue against the city's eligibility to be deemed unserved.[182]

This form of exemption is absolutely critical to broadband deployment, especially in light of the FCC's findings that deployment is proceeding more slowly than desired.[183] Unserved communities like those specified in North Carolina's statute are exactly the sort of municipalities likely to crave a public network to fill the lack of broadband service. Those same communities are also likely to be viewed by the private sector as unprofitable and thus private ISPs are unlikely to enter the market. Consequently, municipal networks are the only real hope of broadband access for citizens in those areas, and imposing the restraints discussed in this Note would likely obliterate the prospects of a public network coming to fruition. The modified provisions discussed in Part II.B.2 are designed to protect ISPs' interests in expanding into new markets. However, these procedural hurdles are not necessary in small rural communities because ISPs are unlikely to expend the resources necessary to serve these remote and sparsely populated areas.

III. JUSTIFICATIONS FOR THE STATE-LEVEL PRONG

The primary justification for the state-level prong is that it facilitates broadband penetration in both unserved and underserved areas. The FCC expressed this view in its analysis of the circumstances of *Missouri Municipal League*.[184] Simply put, municipalities are entities

181 N.C. GEN. STAT. § 160A-340.2(b).

182 *Id*.

183 See *supra* Part I.A and I.C for discussions of the FCC's position on broadband deployment rates.

184 *See* Nixon v. Mo. Mun. League, 541 U.S. 125, 142 (2004) (Stevens, J. dissenting) ("[M]embers of the Federal Communications Commission . . . have taken the view that munici-

that can provide broadband Internet service and, in some cases, may be the only entity willing to take on the expense of providing such service. Thus, restrictions on municipalities' ability to provide that service, whether procedural hurdles or cost-raising measures, inhibit the national availability of broadband service.

Broadband deployment is analogous to the deployment of electricity in the United States in the early twentieth century. In the 1880s, most electricity in the United States was supplied by large, private companies that did not view extending service to less densely populated areas as profitable or feasible and thus chose to ignore them in favor of urban markets.[185] In 1889, Detroit was the first municipality to create its own power company, which was successful in cutting costs to customers.[186] Over the next few decades, following Detroit's example, over 3,000 municipalities formed their own power companies.[187] One commentator identified three major impacts of these developments: (1) Congress passed the Rural Electrification Act of 1936, which provided federal assistance for electricity service deployment to rural areas; (2) public companies put added pressure on private companies to operate more efficiently, lowering costs and igniting innovation; and (3) unserved municipalities were able to remain economically viable by taking matters into their own hands and building their own power systems.[188]

The similarities between the electricity and Internet markets in this context are striking. FCC Commissioner Copps pointed directly to rural electricity expansion in his praise for municipal broadband projects.[189] A scholar notes that private ISPs are acting the same way that private power companies did in lobbying strongly in opposition to public entities entering the market.[190] Thus, there is reason to believe that, with widespread municipal broadband, the result would be similar in that broadband service would become far more widely available and arguably at higher quality. Such a similarly positive result is not certain, as broadband technology continues to evolve relatively quickly as compared to plumbing or paving, but history indicates that

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pal entry 'would further the goal of the [Telecommunications Act of 1996] to bring the benefits of competition to all Americans, particularly those who live in small or rural communities in which municipally-owned utilities have great competitive potential.").

185 O'Loughlin, *supra* note 54, at 483.

186 *Id.*

187 *Id.*

188 *Id.*

189 Gotsch, *supra* note 87.

190 O'Loughlin, *supra* note 54, at 490.

municipalities stand a good chance of satisfactorily filling the role of service provider. Moreover, this Note is more concerned with unserved communities, as most areas populated enough to have private ISP broadband service available have no need—and thus little, if any, desire—to construct a municipal network that would compete directly with the private sector.

Another justification for municipal broadband is that municipal networks combat the private sector's tendency toward monopolistic or oligopolistic behavior, keeping prices reasonable and quality of service high.[191] Similarly, consolidation in the telecommunications industry is concentrating control over the Internet in the hands of a few private companies.[192] Municipalities serve as competitive threats to the established private ISPs, forcing them to keep prices down and quality high. Laws that restrict municipal entry into the market degrade the efficacy of this deterrent effect and thus should be minimized.

IV. Counterarguments to the State-Level Prong

The most prominent argument against municipal networks is that they are likely to fail under their own expenses and debt burdens. However, this counterargument has been addressed throughout the proposed solution, as debt management is an integral part of the proposed solution via feasibility studies.[193]

A novel counterargument to this Note's proposed solution is that some state laws may not actually apply to broadband networks at all, as broadband is technically classified as an "information service."[194] But this counterargument is speculative at best, as it is largely semantic and lacks any verifiable evidence that such an interpretation has ever been applied.[195] Moreover, the author advancing this argument, John Blevins, focused his research on the signaling and chilling effects of municipal broadband regulation, agreeing that the restrictions "have played a key role in stifling municipal services," and thus in

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191 *See id.* at 483.

192 *See* Craig Dingwall, *Municipal Broadband: Challenges and Perspectives*, 59 Fed. Comm. L.J. 67, 76–77 (2006).

193 *See supra* Part II.B.3.a.

194 Blevins, *supra* note 10, at 110–11 ("Indeed, several of the state laws never applied to broadband, or stopped applying after the FCC reclassified broadband access as an 'information service,' which . . . arguably limits the scope of some states' restrictions on municipal broadband," as some laws restrict "telecommunications services.").

195 *Id.* at 111.

stifling broadband deployment.[196] Therefore, Blevins's argument does not obviate the need for this Note's proposed solution.

Another counterargument addresses the problem of broadband deployment by instead using federal funds to subsidize private construction of broadband networks in rural areas. For example, in October 2011, the FCC approved a plan to expand the purpose of the $4.5 billion Universal Service Fund ("USF") from helping deploy only telephone service to rural areas to deploying broadband to rural areas.[197] In July 2012, the FCC announced $115 million in public funding would be disbursed from the Connect America Fund (created via the USF's modernization) to deliver broadband service to about 400,000 customers in rural areas within three years.[198]

However, this sort of solution is insufficient given the still-significant lack of broadband deployment, especially in rural areas.[199] The USF and similar public funds are not enough to fill the gaps quickly and municipalities, which are vastly more responsive to their own economic needs and limits than public funds, are in a far better position to assess their respective situations. While subsidies of this sort are helpful, they do not go far enough, as unserved communities remain at the mercy of a large entity for help in obtaining broadband service (albeit a federal one rather than a private ISP) rather than having the power to take matters into their own hands and fix the problem quickly.

Another argument made against municipal networks is that they are anticompetitive to the point of creating antitrust liability for their owners. While the state action doctrine shielding state-sanctioned enterprises from federal antitrust law likely does not apply to municipalities,[200] this argument still fails because the proposed solution includes

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196 *Id*.

197 Whitney Burdette, *FCC Approves Plan to Reform Universal Service Fund*, ST. J. (Dec. 12, 2011), http://www.statejournal.com/story/15915426/fcc-approves-plan-to-reform-universal-service-fund.

198 News Release, FCC, FCC Kicks-Off 'Connect America Fund' with Major Announcement: Nearly 400,000 Unserved Americans in Rural Communities in 37 States Will Gain Access to High-Speed Internet Within Three Years (July 25, 2012), http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0725/DOC-315413A1.pdf.

199 *See* News Release, FCC, FCC Broadband Report Finds Significant Progress in Broadband Deployment, but Important Gaps Remain (Aug. 21, 2012), http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0821/DOC-315866A1.pdf (finding that 19 million Americans still lack access to fixed broadband service, 14.5 million of whom live in rural areas).

200 *See Parker v. Brown*, 317 U.S. 341, 350–51 (1943) ("We find nothing in the language of the Sherman Act or in its history which suggests that its purpose was to restrain a state or its officers or agents from activities directed by its legislature."). The state action doctrine may not apply to municipal broadband, though, because *Parker v. Brown* requires the state to affirma-

safeguards to prevent the municipal network from using its public resources to anticompetitive ends.[201]

Furthermore, as a matter of economic policy, the ISP with the greatest advantage in just about any market will be the incumbent (i.e., the first entrant to the market). Professor Hannibal Travis observed that "[t]he market for local access to broadband tends to be a 'natural monopoly,' at least in its stages of 'growth,'" as "large economies of scale . . . favor monopolists over new entrants" regardless of whether the entity that first served the market is owned privately or publicly.[202] Considering the safeguards included in this Note's proposed solution and the nature of the broadband market, any monopolistic advantage a municipal network enjoys would be the product of natural market forces. Any private ISP would enjoy the same advantages if it were to take advantage of this Note's proposal to require a private sector appeal before constructing a municipal broadband network.[203]

A counterargument from the extreme end of the pro-municipal network spectrum is that this Note's proposed solution does not go far enough and that municipalities should seize control of the "last mile"[204] of broadband infrastructure, leaving private ISPs to handle the "backhaul."[205] The argument is efficiency-based, as it asserts that separating the backhaul from the last mile will encourage the separate entities to innovate and improve in their specific fields while cutting the excess costs associated with each ISP having to build its own lines in both the last mile and the backhaul.[206]

However, even the author of this argument admits that it might be an "unworkable" solution designed to educate regulators by aiding their understanding of "core issues with the current regulatory struc-

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tively sanction the action, in this case the construction of municipal broadband networks. For further discussion of the state action doctrine in the municipal context, see generally Donald Gene Kalfen, *Municipal Antitrust: An Overview*, 60 CHI.-KENT L. REV. 349 (1984).

201 *See supra* Part II.B.2.d–e (providing, among other things, that some advantages municipalities enjoy in constructing and operating broadband networks which private ISPs lack cannot be used by the municipality once private ISPs declare their intent to enter the market).

202 *See* Travis, *supra* note 159, at 1715–16.

203 *See supra* Part II.B.3.b.

204 The "last mile" includes the wires run from the utility pole to the home. Myles Roberts, Note, *Opening the Last Mile to Competition*, 4 VA. SPORTS & ENT. L.J. 309, 310–11 (2005).

205 "Backhaul" includes the more centralized data processing and delivery equipment into which the "last mile" is connected. *See* Rural Broadband Report, 24 FCC Rcd. 12,791, 12,828 (Oct. 19, 2009).

206 *See* Roberts, *supra* note 204, at 331–33, 336–37.

ture" in hopes of facilitating a "major regulatory overhaul."[207] While the proposal is bold and well-articulated, it is impractical in its scope and ambition as well as dangerous in creating a monopolist in every market that would lack incentive to innovate over the last mile. In contrast, this Note's proposed solution is far more practical in that its suggestions are more politically palatable and less jarring to the status quo.

Another potential response to this Note's proposed solution is to encourage municipalities to subsidize advanced wireless Internet service (e.g., individual wireless Internet computer plug-in devices from Verizon Wireless) wholesale from private ISPs for the benefit of residents and businesses. While this would save the municipality a great deal of money and time, it is ultimately an insufficient response to the core problems this Note seeks to resolve. Aside from wireless broadband's present inferiority to wired networks in both speed and reliability,[208] this solution still relies on private ISPs to provide service to isolated and unserved rural areas, a prospect of questionable profitability for the private ISPs. The subsidization plan also commits the municipality to dedicating its resources to a budget expense indefinitely, without the prospect of recovering the costs in the long run through the operation of a profitable ISP business or via sale of the municipal network to a private entity in the future.

CONCLUSION

State legislatures are in the unenviable position of having to balance the sometimes competing interests of their various constituencies, and that is the case in the municipal broadband context. Many states have put too much emphasis on the private ISPs' concerns by effectively prohibiting municipal broadband networks. While the private ISPs' concerns about direct competition with public entities for customers are legitimate, states should not take the drastic step of prohibiting public entities from entering the broadband market entirely. Instead, states should carefully construct laws that are designed to facilitate municipal broadband in underserved communities because of the great benefits these communities derive from broadband. These laws, though, should also reasonably protect the private sector's interests in expanding its networks to these same areas.

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207 *Id.* at 310.

208 *See supra* Part I.B.

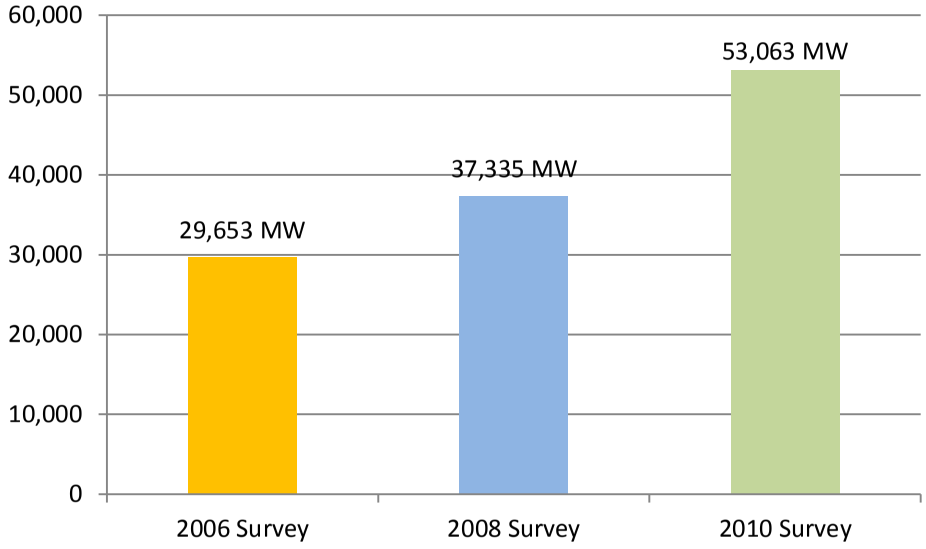
In light of the tremendous industry pressure the private sector exerts on state legislatures, the federal government must force states to relax their laws impeding municipal broadband. The most effective way for the federal government to do so is by amending section 253(a) of the Telecommunications Act of 1996 to expressly apply to public entities. Amending the law would grant the FCC authority to examine the impact of state laws on a case-by-case basis, declaring those statutes which effectively prohibit municipal broadband to be preempted.

Above all, policymakers at both the state and federal levels need to look past the economics of this debate and see the real impact the lack of broadband access has on people's everyday lives. The prospect of a home lacking electricity or telephone service today is unthinkable to most Americans, but this was not always the case. Federal, state, and local governments all played integral and often direct roles in ensuring that Americans in all areas of this expansive nation would have access to these critical services at affordable prices. As the Internet's role in daily American life continues to grow, the need for reliable and affordable high-speed Internet access will only become more pressing. Federal and state legislators should follow in their electricity-focused predecessors' footsteps by embracing municipal broadband as a means to illuminate the information technology darkness in which those without affordable broadband are forced to live.

EXHIBIT 25

Motivation for Demand Response

- Growing Peak Loads make it difficult to keep up with demand
- 10% reduction for 60 hours/yr = 5000MW or 50 100MW peak plants
- Recent heat waves in the North East showed that DR can help

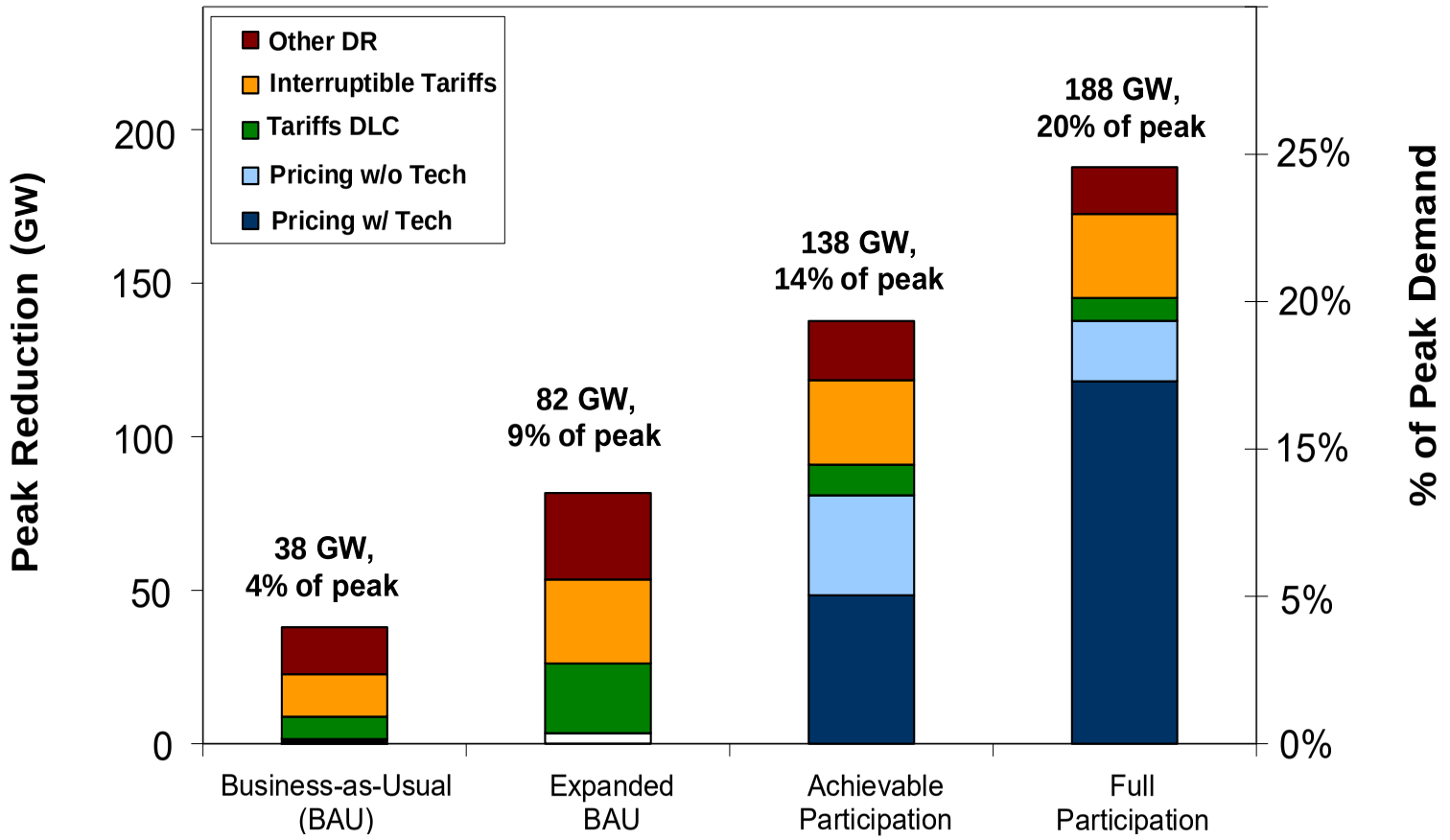


Demand Response Potential Peak Load Reduction in MW, United States: 2006, 2008, 2010 - Business as usual -
Source: Federal Energy Regulatory Commission

openADR ALLIANCE

Motivation for Automated DR

- Demand Response Potential



(Source: Federal Energy Regulatory Commission)

openADR ALLIANCE

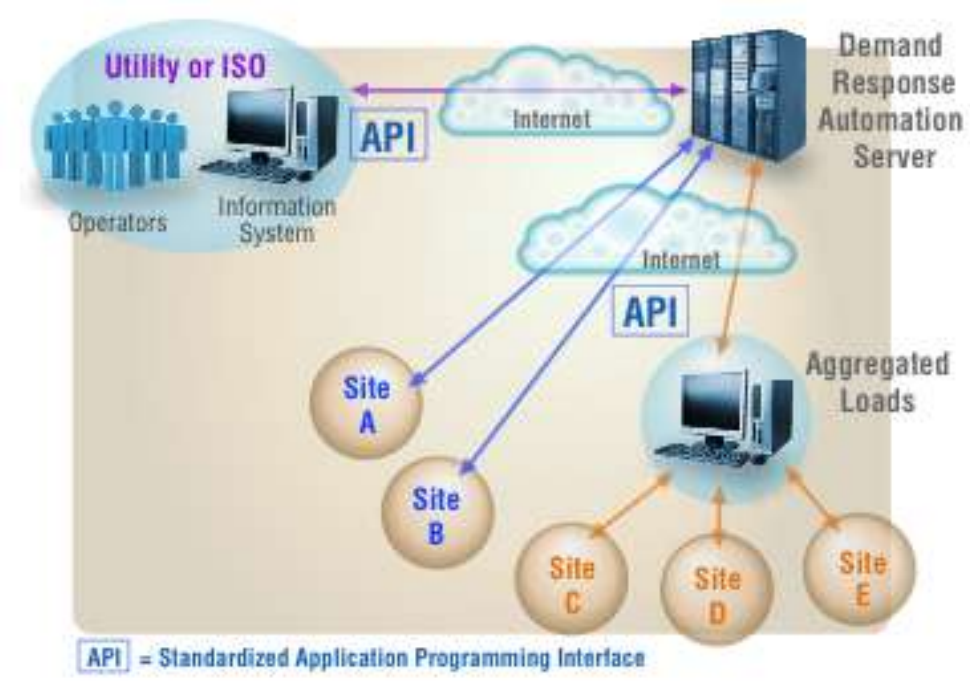
Motivation for Automated DR and Standardization

- OpenADR developed to meet automation goals from 2002
  - Cost - Develop low-cost, automation infrastructure
  - Technology – Evaluate reliability & readiness for common signals
  - Capability - Evaluate control strategies to modify electric loads
- OpenADR is a public domain standard to communicate price and reliability signals
- OpenADR-based Auto-DR programs, offered by utilities/ISOs

openADR ALLIANCE

OpenADR in a Nutshell

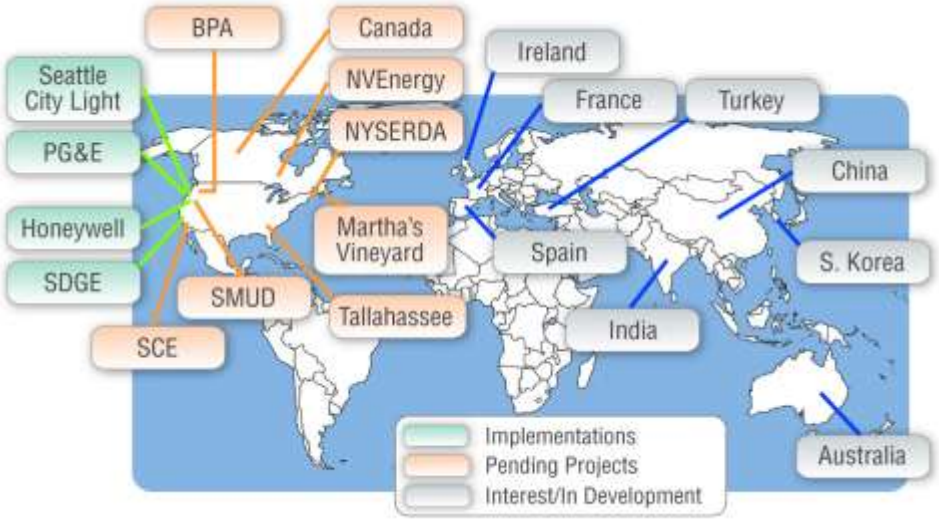
- Open Automated Demand Response (OpenADR) provides a non-proprietary, open standardized DR interface that allows electricity providers to communicate DR signals directly to existing customers using a common language and existing communications such as the Internet.

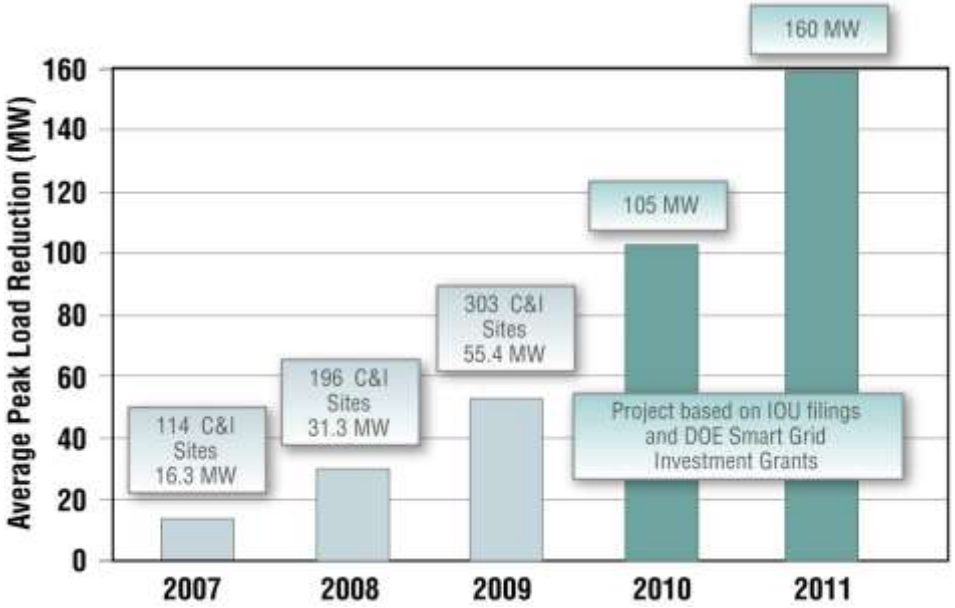


Source: LBNL

OpenADR Deployments

OpenADR Deployments around the World

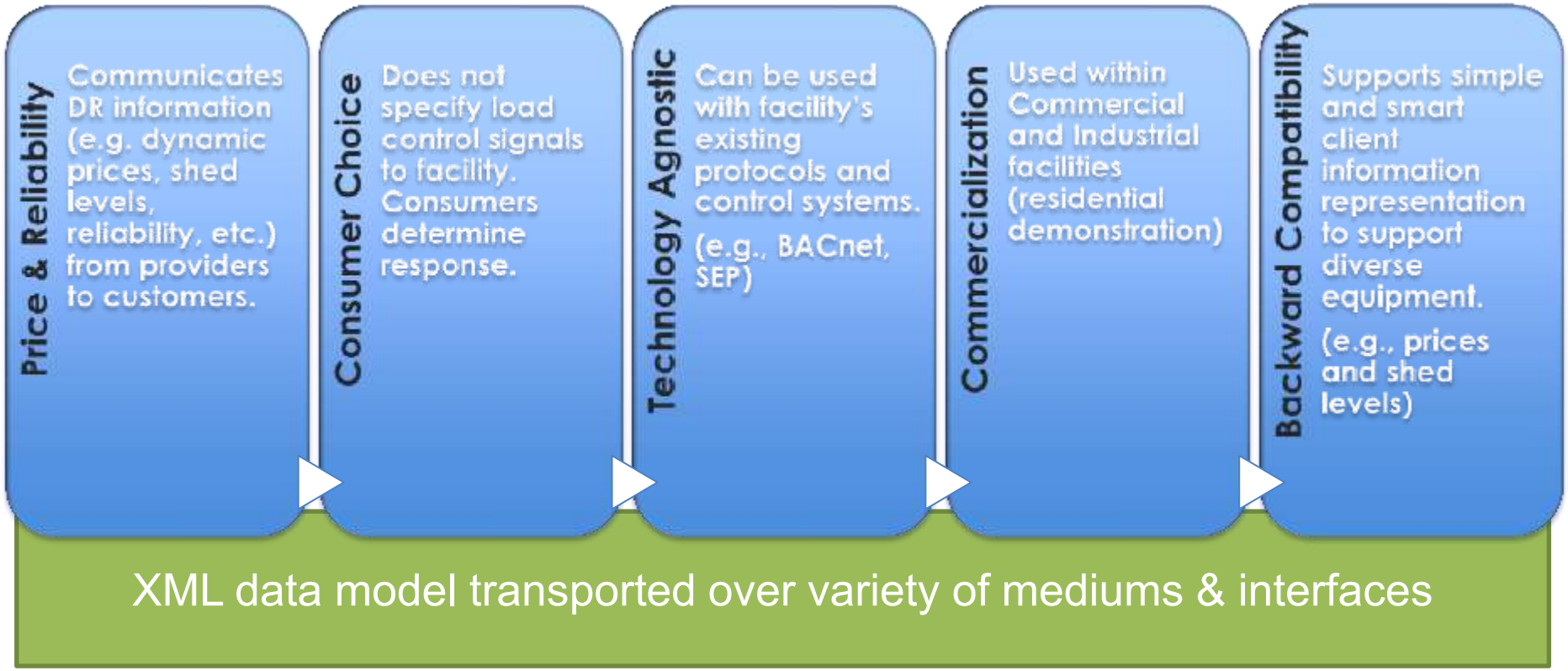




OpenADR Commercial Deployment MW (current enrollment ~200 MW)

OpenADR Features and Benefits

- Low cost automation allows consumers to use less expensive power providing benefits to consumers, utilities, system operators, and society at large.



OpenADR 2.0 - OASIS

- Architectural models for
  - Data models for information exchange
  - Information exchange patterns
  - Distributed Energy Resources (DER)

- Use work across Smart Grid domain related to –
  - Price/Reliability DR from OpenADR 1.0
  - Transactive Prices from Energy Market Information Exchange
  - Common schedule from Web Service Calendar (WS-Calendar)
  - NAESB, UCA, ISOs, RTOs, etc.

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OpenADR 2.0 - OASIS

- Energy Interop Technical Committee (EI TC) works to:
  - Describe information and comms models
  - Define web services

- Create models for –
  - Dynamic price signals
  - Reliability signals
  - Emergency signals
  - Communication re market participation info
  - Load predictability and generation information

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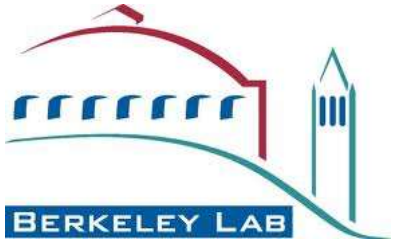
OpenADR 2.0 - OASIS

- OpenADR 2.0 profiles in the EI v1.0

Service	*Section*	*Notes*
EiRegisterParty	7.1	Register to identify and receive information
EiQuote	7.2	EiDistributeQuote for distributing dynamic prices (push), other operations for pull including block and tier tariff communication
EiEvent	9	The core event functions and information models
EiReport	10	The ability to set periodic or one-time information on the state of a Resource
EiAvail	11.2	Constraints on the possible time a Resources is available or not
EiOpt	11.3	Overrides the EiAvail; addresses short-term changes in availability
EiEnroll	8	Used to enroll a Resource for participation in Events.
EiMarketContext	12.2	Used to discover program rules, standard reports, etc.

OpenADR Members

Sponsors



Honeywell

Contributors

Adopters

Current Status

- OASIS Energy Interoperation 1.0 standard approved for third public review
- Completed first interoperability test event
- Established test tool framework
- Finalizing profile certification and test plan
- Preparing market education and outreach programs
- Growing Ecosystem of suppliers

→ Join us …!

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Thank You!
Questions?

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EXHIBIT 26

Broadband Opportunity Council Report and Recommendations

Pursuant to the Presidential Memorandum on Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training

August 20, 2015

Co-Chairs:

Secretary Penny Pritzker, U.S. Department of Commerce
Secretary Tom Vilsack, U.S. Department of Agriculture

Table of Contents

Executive Summary

"Access to high-speed broadband is no longer a luxury; it is a necessity for American families, businesses, and consumers. Affordable, reliable access to high-speed broadband is critical to U.S. economic growth and competitiveness. High-speed broadband enables Americans to use the Internet in new ways, expands access to health services and education, increases the productivity of businesses, and drives innovation throughout the digital ecosystem." – President Barack Obama

The United States continues to experience unprecedented growth and innovation in broadband and in the advanced applications and services it enables. While the benefits of increased broadband access and adoption are widespread, barriers like income and geography keep many Americans from taking advantage of the economic, educational and social benefits of broadband access. To make sure that the Federal government does everything within its power to support broadband deployment and adoption, on March 23, 2015, President Obama signed a Presidential Memorandum (Memorandum) "Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training."[1] The Memorandum created the Broadband Opportunity Council (Council) and tasked it to produce specific recommendations to increase broadband deployment, competition and adoption through executive actions within the scope of existing Agency programs, missions and budgets. This Report responds to that directive.

The Council presents four overarching recommendations:

1. Modernize Federal programs to expand program support for broadband investments.
2. Empower communities with tools and resources to attract broadband investment and promote meaningful use.
3. Promote increased broadband deployment and competition through expanded access to Federal assets.
4. Improve data collection, analysis and research on broadband.

To pursue these objectives, Federal Agencies will take dozens of actions over the next 18 months. These include commitments to:

- Modernize Federal programs valued at approximately $10 billion to include broadband as an eligible program expenditure, such as the Department of Agriculture's (USDA) Community Facilities (CF) program, which will help communities around the country bring broadband to health clinics and recreation centers;
- Create an online inventory of data on Federal assets, such as Department of the Interior (DOI) telecommunications towers, that can help support faster and more economical broadband deployments to remote areas of the country;
- Streamline the applications for programs and broadband permitting processes to support broadband deployment and foster competition; and
- Create a portal for information on Federal broadband funding and loan programs to help communities easily identify resources as they seek to expand access to broadband.

The Council proposes continuing actions in support of its mission, including monitoring agencies' progress in implementing the action items in the Report and exploring additional steps to further the goals set forth in the Presidential Memorandum.

1. Introduction

Progress to Date

Day by day, access to broadband, and the advanced applications it facilitates, becomes more integral to the daily lives of Americans and to the mission and work of the Federal government and its Agencies. Broadband drives the provision of services across nearly all government functions and across many of the activities that are key to advancement and opportunity for all Americans.

- Broadband enables greater civic participation, provides tools for open government and streamlines government processes.
- Broadband enables changes in how we access educational resources, collaborate in the educational process, conduct research and continue to learn anytime, anyplace and at any pace.
- Broadband enables improved healthcare access, treatments and information.
- Broadband enables new business models, creates business efficiencies, drives job creation, and connects manufacturers and store-fronts to clients and partners worldwide.
- Broadband can also help bring communities together and improve public safety, create a greener planet, and make our transportation systems more resilient and efficient.

Additionally, broadband provides a foundation for many of the advancements we will see across industry sectors in the coming years.[2]

That's why the Obama Administration has focused over the past six years on expanding broadband access for all Americans. Under the Obama Administration's leadership, the United States has experienced unprecedented growth and innovation in broadband networks and services. Since 2009, nearly 45 million more Americans have adopted broadband.[3] Today, 84 percent of Americans are "Internet users," up from 76 percent 5 years ago.[4] Tens of millions of households have seen their home broadband speeds more than double without paying significantly more for monthly service. Communities around the country are beginning to reap the benefits of gigabit speed fiber networks. And while other countries are just beginning to deploy fourth-generation wireless networks to scale, over 98 percent of Americans now have access to 4G mobile broadband.[5]

A combination of robust private investment and targeted Federal policy has driven these remarkable strides in broadband access and adoption. Through the American Recovery and Reinvestment Act (Recovery Act), USDA and the Department of Commerce (DOC) invested nearly $7.5 billion in broadband networks to help connect under-served areas around the country:

- The Commerce Department's National Telecommunications and Information Administration (NTIA) awarded approximately $4 billion in grants under the Broadband Technology Opportunities Program (BTOP) and approximately $293 million in grants under the State Broadband Initiative (SBI) program. Grantees deployed more than 114,500 miles of new or upgraded network miles; connected more than 25,500 community anchor institutions; installed or upgraded more than 47,100 personal computers in public access centers; and prompted more than 670,000 people to subscribe to broadband services. SBI grantees mapped broadband availability in all 50 states and 6 territories and supported well over 200 local broadband planning teams across the country.
- USDA's Rural Utilities Service (RUS) expanded its existing telecommunications programs with an additional $3.5 billion in loans and grants as part of the Broadband Infrastructure Program (BIP). The awards went to 285 last mile providers, 12 middle mile providers, and 4

satellite companies for the deployment of broadband facilities. Additionally, 19 technical assistance grants funded planning efforts to get broadband service to hard-to-reach areas of the country. To date, 64,794 miles of fiber cable and 1,845 wireless access points have been installed in rural communities, bringing new or improved broadband service to over 230,000 residences, businesses and anchor institutions.

The Recovery Act also supported significant investment in systems for electronic health record payments for hospitals and clinicians through HITECH - the Health Information Technology for Economic and Clinical Health Act. In addition, the Obama Administration adopted policies to make more spectrum available for commercial wireless broadband, increasing capacity to meet the growing demand posed by wireless-enabled devices.

Building on the successes of the Recovery Act, the Obama Administration has explored ways to capitalize on other Federal funding sources and work with the public and private sectors to continue expanding broadband access. For example, in June 2013, the President and the Department of Education (ED) Secretary Arne Duncan launched ConnectED, a public-private partnership that "empowers teachers with the best technology and the training to make the most of it, and empowers students through individualized learning and rich, digital content."[6] ConnectED's objective is to connect 99 percent of American students to next-generation broadband by 2018. While broadband connectivity and adoption in schools and libraries is a foundation of ConnectED, the program goes far beyond connectivity with initiatives designed to expand the availability of digital materials and support teachers as they integrate technology into curriculums, further engaging students and improving educational outcomes with personalized learning.

ConnectED is already having an impact. This spring, the Federal Communications Commission's (FCC) e-Rate program awarded $470 million in Federal funds to bring Wi-Fi and high-speed connectivity to classrooms in over 10,000 schools and over 500 libraries across America.[7] These investments are part of over $8 billion in funding that the FCC has made available to meet the President's school connectivity goals. Over 3 million students from 10,000 schools in all 50 states are already using the software, hardware, wireless connectivity and training resources deployed as part of the over $2 billion in private-sector commitments.[8]

More recently, in July 2015, the President and the Department of Housing and Urban Development (HUD) Secretary Julián Castro announced ConnectHome. As a demonstration project, ConnectHome will help bridge the "homework gap" for nearly 200,000 children in 275,000 low-income households in 27 cities and one Tribal Nation.[9] The public-private partnership with Internet Service Providers, non-profits and the private sector will offer broadband access, technical training, digital literacy programs and devices for low-income residents in assisted housing units.

Challenges Remain

Amidst this progress, clear challenges remain. According to 2012 Census data, published as part of NTIA's Digital Nation series, more than 25 percent of American households do not subscribe to broadband at home.[10] This "digital divide" is better understood as a series of digital divides based on geography, income and other demographics factors. Seniors, people with disabilities,[11] those with less than a high school degree, and people with low income levels[12] are among the groups with

lower than average adoption rates – and therefore lower rates of access to the benefits associated with digital information and services.[13]

In an NTIA report based on 2012 Census Bureau data, 29 percent of households without a home broadband connection pointed to expense as a major barrier.[14] And, as a recent report from the Council of Economic Advisers (CEA) highlighted, a gap of almost 20 percentage points in adoption rates exists between wealthy and low-income neighborhoods in cities like Washington, D.C., Philadelphia, Pennsylvania and San Antonio, Texas.[15] Americans in the lowest quartile for household income are 24 percentage points less likely to subscribe to broadband at home than those in the topmost income quartile.[16]

Geography also plays an important role in broadband availability. Some parts of the country, mostly rural and Tribal lands, are connectivity deserts – regions with little or no access to broadband – or "parched" with broadband coverage inadequate to meet community needs. For example, broadband speeds of at least 25 Mbps (download) and at least 3 Mbps (upload) are available to only 47 percent of rural households and 37 percent of people living on Tribal Lands, compared with 92 percent of urban households.[17] Low-income neighborhoods are also significantly less likely to have high-speed connections available to them. For example, the CEA report found that there is a gap of roughly 20 percentage points between the wealthiest and least wealthy communities for download speeds of 25 Mbps to 100 Mbps.[18]

Much of the easy work has been done – building out broadband infrastructure in more profitable areas of the country where the community capacity is strong and the business case is compelling; and encouraging broadband adoption and use among people who are already "digitally ready."[19] The hard work that remains is reaching those communities where geography and economics work against deployment and reaching individuals who do not yet have the same opportunities to use broadband to meet personal and professional goals.

At the same time, limited competition is also a challenge even in communities with high rates of adoption.[20] Today, nearly 40 percent of American households either do not have the option of purchasing a wired 10 Mbps connection or they must buy it from a single provider.[21] Three out of four Americans do not have a choice of providers for broadband at 25 Mbps, the speed increasingly recognized as a baseline for broadband access.[22] Lowering barriers to deployment and fostering market competition can drive down price, increase speeds, and improve service and adoption rates across all markets.

The Federal government has played a crucial role in advancing policies to promote broadband deployment and adoption, including disseminating best practices, breaking down regulatory barriers and encouraging further investment. Yet, more action is needed.

2. Broadband Opportunity Council Process

To help address these challenges, the President launched the Broadband Opportunity Council on March 23, 2015 to make recommendations on actions that the Federal government can take under existing authority to improve the nation's broadband networks and bring the benefits of broadband to more Americans. The Presidential Memorandum issued that day, "Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training," framed the scope and working process for the Council.

The Council is co-chaired by the Secretaries of Commerce and Agriculture or their designees, with designees from 25 Federal Agencies, departments and White House offices, support from the Director of the National Economic Council and the Director of the Office of Science and Technology Policy, and consultation with the Federal Communications Commission and relevant Federal Working Groups. DOC Secretary Pritzker designated Lawrence E. Strickling, Assistant Secretary of Commerce for Communications and Information and Administrator, National Telecommunications and Information Administration, and USDA Secretary Vilsack designated Lisa Mensah, Under Secretary for Rural Development, USDA, to lead the Council. Appendix A provides a list of Council member Agencies.

Council Working Group members met weekly by phone and in person. Agency designees developed and contributed action plans, reviewed those commitments within their Agency, and reviewed and approved the substance of this full Report.

In addition to engaging agencies across the Federal government, the President charged the Council with gathering stakeholder input about how the Federal government can better support broadband deployment, competition and adoption. The Council published a Request for Comment (RFC) in the Federal Register on April 29, 2015[23] and hosted a webinar on May 19, attracting more than 200 viewers. Comments submitted by 248 individuals, businesses, organizations and Agencies are available at http://www.ntia.doc.gov/Federal-register-notice/2015/broadband-opportunity-council-comments.[24] A brief summary of the approximately 1,000 pages of comments received is included below. Appendix B provides the list of commenters.

The Agency commitments and recommendations contained herein, submitted to the President on behalf of the Council, represent the result of internal Agency exploration, consultation with stakeholders through the public comment process and extensive deliberations among members of the interagency Council Working Group.

Public Input to the Broadband Opportunity Council

In response to the Council's RFC, 248 diverse stakeholders provided input and recommendations. Commenters included major telecommunication carriers and associations; IT innovators and technology companies; nonprofits and community anchor institutions; State, Local and Tribal governments; and individuals. The Council requested input on regulations and barriers that hamper broadband deployment, recommendations on ways to promote public and private investment in broadband and ideas for ways that the Federal government can encourage and support broadband adoption and digital literacy.

A number of themes emerged from the comments including the need for: increased clarity and guidance on Federal funding options for broadband;[25] streamlined processes that enable the use of Federal assets for broadband;[26] insight on attracting local investment;[27] requests for best practices and technical assistance;[28] and a desire for more data[29] and research on broadband.[30]

In terms of infrastructure policy, commenters urged the Federal government to further facilitate the use of government lands and infrastructure for broadband deployment. They asked that Federal programs: allow broadband providers or other entities to install infrastructure during Federal construction projects;[31] develop an online permitting and tracking system;[32] make Federal highway and sewer projects contingent on the allowance of conduit or fiber deployment during excavation;[33] and that the Federal government encourage State and Local "Dig Once" policies that allow deployment of conduit and fiber in transportation rights of way during other projects.[34]

Commenters asked the Council to simplify and modernize funding processes[35] and to ensure that definitions for broadband speeds were clear and consistent across programs.[36] Other comment areas included requests for consolidated information about broadband funding opportunities across the Federal government[37] and suggestions for decreasing timelines for application reviews.[38]

One area that was the subject of a number of recommendations was permitting on Federal lands. Commenters requested that Agencies streamline processes and standardize timelines for the review and processing of permitting applications and make such documentation easily accessible.[39] Several commenters particularly asked that Agencies streamline wireless siting.[40] A number of commenters noted the progress of the Executive Order (EO) 13616 Working Group[41] and asked for expedited progress on finalizing master contracts, applications and fees.[42] A recurring theme was the recommendation to develop a comprehensive inventory of broadband assets[43] and Agency points-of-contact[44] and to streamline environmental and cultural review processes, particularly in already disturbed land or where review has already been performed.[45]

Commenters stressed the importance of promoting adoption[46] and availability[47] among vulnerable populations such as low-income individuals, persons with disabilities, seniors, veterans and those with limited English. They also emphasized the need for digital literacy and offered suggestions for addressing it.[48] Some recommended that the Federal government donate surplus equipment and encourage refurbishment.[49] Commenters supported the idea of expanding free public Wi-Fi hot spots, especially in Federal buildings and on Federal Lands.[50]

Commenters recognized NTIA's BroadbandUSA initiative as providing valuable support for communities working to expand broadband programs. They requested additional support from NTIA including technical assistance, webinars and publications on best practices on broadband adoption, infrastructure and planning.[51] Commenters acknowledged the effectiveness of Agencies' moving services online, and also cautioned that digital literacy and outreach are necessary to include all citizens.[52]

A number of comments came in from individuals expressing concern about the lack of adequate, affordable broadband service where they live.[53]

Some areas identified by commenters are out of the Council's scope and better directed toward the FCC, Congress, and State governments. For example, some commenters made specific recommendations for reforming Lifeline to support broadband;[54] expanding e-Rate to support more than schools and libraries;[55] reforming retransmission consent and program access rules.[56]

Others requested tax incentives[57] or Congressional extension of bonus depreciation.[58] The comments directed to the FCC have been shared with the FCC for their consideration. Other comments requested additional funding, requiring statutory changes from Congress.

While the Council was not able to translate every comment received into an immediate Agency action, the stakeholder feedback provided important insight into current challenges and opportunities for broadband deployment and adoption – input that shaped the Guiding Principles outlined in Section 3, informed the recommendations summarized in Section 4 and provided the basis for the next steps described in Section 5.

3. Guiding Principles

The President provided the following guidance that set the policy context for the Broadband Opportunity Council:

It shall be the policy of the Federal government for executive departments and Agencies having statutory authorities applicable to broadband deployment (Agencies) to use all available and appropriate authorities to:

- *Identify and address regulatory barriers that may unduly impede either wired broadband deployment or the infrastructure to augment wireless broadband deployment;*
- *Encourage further public and private investment in broadband networks and services;*
- *Promote the adoption and meaningful use of broadband technology; and otherwise*
- *Encourage or support broadband deployment, competition, and adoption in ways that promote the public interest.*

Through the Council's extensive research into Agency programs, analysis of the public comments, engagement with the private sector and discussions with trade associations, research institutions, advocacy groups and other stakeholders, the Council has elaborated on the President's guidance to further inform Agencies as they translate these prescriptions into actionable policies. The Council began this task with the overarching goal to encourage or support broadband deployment, adoption and competition in ways that promote the public interest. The Council was guided by several principles for doing so:

Identify and address deployment barriers and promote interagency coordination

- **Leverage Federal assets**. Federal lands, buildings and assets are important conduits for broadband deployment and should be accessible for the promotion of broadband competition and deployment.

- **Streamline processes.** The Federal government should strive for common permitting and application processes to reduce the burden on Local government, State government, non-profit, and private applicants applying for Federal aid and resources.

- **Collaborate and strengthen coordination.** Agencies should expand interagency coordination to minimize redundancy and remove regulatory barriers and should continue to collaborate to meet the goals established for the Council. Additionally, where appropriate, Council members should increase collaboration and coordination with State, Local and Tribal governments to support their initiatives to expand broadband access and adoption.

- **Lower barriers to competition.** While regulatory power generally rests with State, Local and Tribal governments and independent regulatory Agencies, the Federal government should provide fair and open access to government assets and processes. Such open access is designed to stimulate increased deployment and competition by lowering barriers for new market entrants and for incumbent expansions.

Encourage further public and private investment

- **Specify broadband as eligible expenditure in Federal programs.** Broadband is a critical element of community and regional infrastructure and should be an eligible expenditure and, where possible, a priority for infrastructure funding and loan programs.

- **Encourage public-private partnerships.** The deployment of broadband almost always requires collaboration between the public and private sector and often cooperation across multiple levels of government. As Federal Agencies shape their broadband policies, they should work closely with the private sector and State, Local and Tribal governments to ensure those policies maximize overall investment in and adoption of broadband services.

Promote adoption and meaningful use

- **Expand outreach.** Access to affordable broadband is unevenly distributed and is impacted by both geography and income. Federal Agencies should target resources towards high-need communities, *e.g.*, communities with low connectivity or with few options for procuring high-speed broadband. For example, broadband adoption lags among seniors, low-income households, people with lower educational levels, people with disabilities and those living in Indian Country and in rural areas.

- **Increase digital literacy.** Digital literacy and fluency is increasingly integral to economic advancement and participation in American society. Agencies should incorporate increased digital literacy training and broadband adoption support into online platforms, training programs and services.

- **Encourage meaningful use.** Access to broadband should increase access to government services, especially in rural communities or populations that may lack easy access to government resources. The Federal government should be a leader in encouraging meaningful use of broadband by making services, data and information readily accessible and regularly evaluating online accessibility and use.

The recommendations in Section 4 arise from these Guiding Principles. As noted in our conclusion, the Broadband Opportunity Council will continue to explore opportunities to advance these core principles through additional reforms and actions.

4. Recommendations and Agency Actions

The Council was charged with making recommendations for actions that can be implemented within the scope of existing Agency programs, missions and budgets. The Council makes recommendations in four areas where Federal actions can strengthen broadband deployment, foster competition and promote broadband adoption:

1. Modernize Federal programs to expand program support for broadband investments.
2. Empower communities with tools and resources to attract broadband investment and promote meaningful use.
3. Promote increased broadband deployment and competition through expanded access to Federal assets.
4. Improve data collection, analysis and research on broadband.

Milestones reflect the Federal fiscal year calendar which begins October 1. Please see Appendix A for a list of Agencies and acronyms. Recommended next steps for the Broadband Opportunity Council are summarized in Section 5.

4.1 Modernize Federal programs to expand program support for broadband investments

Broadband has steadily shifted from an optional amenity to a core utility for households, businesses and community institutions. Today, broadband is taking its place alongside water, sewer and electricity as essential infrastructure for communities.

However, not all Federal programs fully reflect the changing social, economic and technological conditions that redefined the need for and benefits of broadband. In some cases, programs that can support broadband deployment and adoption lack specific guidelines to promote its use. Other programs have not integrated funding for broadband commensurate with its importance and role in program execution and mission.

RECOMMENDATION: All relevant Federal programs, especially those supporting economic development, infrastructure and housing programs, will use rulemakings or guidance to open financing resources for broadband investments.

To implement this recommendation, Council members will take the following initial 13 actions. Cumulatively, these actions will open up or clarify the potential uses for $10 billion in Federal grants and loans for broadband-related activities.

- USDA: Update guidance for the Rural Development Community Facility Program: Rural Housing Service - Community Facilities (CF), which represents an estimated $2.3 billion in FY16 funding, will develop and promote new funding guidance making broadband projects eligible.
    - Key Milestones:

- Develop new program guidelines 3QFY16
- Promote new policy to stakeholders 4QFY16

- USDA: Expand broadband eligibility for RUS Telecommunications Program: RUS will revise regulations that currently limit broadband investment in specific areas with inadequate service. This change would open funding opportunities to a different provider even though an incumbent exists and would allow new entrants to access an estimated FY16 funding of $690 million.
  - Key Milestones:
  - Develop and publish new regulation 4QFY16

- DOC: Highlight broadband eligibility for Economic Development Assistance: DOC's Economic Development Administration (EDA) will issue an FY16 Federal Funding Opportunity (FFO) for its Economic Development Assistance Programs (EDAP) that highlights broadband planning and deployment as one of EDA's national strategic priorities for funding. The President's FY16 request for EDAP is $227.5 million.
  - Key Milestones:
  - Publish Federal Funding Opportunity 1QFY16

- Department of Treasury (UST): Clarify broadband eligibility for New Market Tax Credits: Treasury will update Frequently Asked Questions (FAQs) to specify that broadband projects in qualified census tracts are eligible for the New Markets Tax Credit Program (NMTC Program), provided the investment meets the IRS Regulations related to a business qualifying under the NMTC program. The NMTC Program provides a 39 percent tax credit to offset Federal tax liability for investors that make equity investments in specialized financial institutions called Community Development Entities (CDEs) that provide loans and other credit assistance in low-income communities. Over the past 5 years, CDEs have raised $20.644 billion in qualified private equity investment under the NMTC.
  - Key Milestone: Issue updated FAQs 1QFY16

- HUD: Establish broadband connectivity standards for housing construction: HUD will begin a rulemaking process to require that HUD-funded new residential construction and substantial rehabilitation projects include plans for infrastructure that supports unit-based access to broadband internet connectivity. Exceptions will be made where the local infrastructure, location of the building or building structure makes broadband infeasible as determined by HUD. In addition, the rule will not apply to properties that only participate in HUD-insured or guaranteed mortgage or loan programs. Other Agencies will explore adoption of similar standards for housing construction programs under their purview.
  - Key Milestones:
  - Publish the proposed rule in the Federal Register 1QFY16

- USDA: Expand broadband eligibility for Rural Business Loan Guarantee Program: USDA Rural Business will issue guidance to rural communities stating that broadband projects represent an eligible infrastructure expense for the Rural Business Cooperative Services

Business and Industry Loan Guarantee Program. Subject to specific requirements, loan funds may be used for real estate, equipment, working capital and debt refinancing. This program represents an estimated $1.2 billion in FY16 funding.

- Key Milestones:
  - Issue guidance to stakeholders and prospective applicants 3QFY16

- USDA: Expand broadband eligibility for RUS Electric Program: RUS will issue guidance to its legacy electric borrowers and other stakeholders that broadband projects supporting smart grid and communications facilities for energy management are an eligible infrastructure expense. This program represents an estimated $5 billion in electric infrastructure investment. SmartGrid funding will be available based on demand. The Department of Energy (DOE) will highlight this guidance on Smartgrid.gov and will send out an alert to their list serve.
  - Key Milestones:
    - RUS announcement and promotion to stakeholders 2QFY16
    - DOE announcement to SmartGrid stakeholders 2QFY16

- HUD: Amend Consolidated Plan regulations to include broadband: HUD's Office of Community Planning and Development will begin rulemaking to integrate broadband feasibility and needs assessment into planning efforts. The Consolidated Plan serves as a framework for a community-wide dialogue to identify housing and community development priorities.
  - Key Milestones:
    - Publish the proposed rule in the Federal Register 1QFY16

- Department of Labor (DOL): Expand broadband eligibility for One-stops and Job Centers: DOL will issue clarification that broadband service within one stops / American Job Centers is an allowable expense within administrative allowances. ETA will address the allowability of funds to improve digital literacy skills for job hunters, promote Wi-Fi in public facilities, and improve capacity of computer centers to deliver services to customers. This clarification can impact up to 2,500 one-stop career centers across the country.
  - Key Milestones:
    - Issue guidance to the public workforce system 2QFY16

- Department of Health and Human Services (HHS): $25 million in new grants to advance Health Centers' use of health IT: HHS will support Health Centers' efforts to use health information technology to improve healthcare. HHS will award $25 million in grants to help health centers implement electronic health records and other health information technology to improve quality of care and patient access to personal health information. Since patient and health center use of electronic health information relies on having access to those records, training and technical assistance to facilitate access to broadband will be listed as an eligible expense in this grant program.

RECOMMENDATION: Agencies will develop best practices, provide technical assistance and create a one-stop portal for broadband resources to support local governments and anchor institutions.

Beyond targeting best practices, the Council sees opportunities to engage private, public, philanthropic and nonprofit groups to develop a benchmark or index system of community connectivity indicators to promote innovative practices, investment, and digital inclusion. The index would help community leaders understand where their strengths lie and where they need to improve, and would promote innovative community policies and programs. It would be supported by tools and processes for community assessment, improvement and recognition.

RECOMMENDATION: The Executive Branch will convene stakeholders to design and launch a community connectivity index.

There is also significant room for improvement in Local and State government policies. While the Federal government cannot address Local and State regulations through executive action, it can encourage best practices. Among other practices, "Dig Once" policies have emerged as an important source for cost savings. "Dig Once" policies help Local and State governments lower their own costs and costs for telecommunication companies by coordinating infrastructure projects and allowing conduit to be laid alongside transportation, water and other projects. Under Executive Order 13616, the Department of Transportation (DOT) provided guidance for using "Dig Once" practices in Federally-funded projects. The Council recommends expanding this guidance to projects supported by other Federal Agencies that fund infrastructure projects, such as the Environmental Protection Agency (EPA), GSA, USDA, HUD, and DOI.

RECOMMENDATION: Federal Agencies that fund significant infrastructure investments will work together to further promote "Dig Once" policies.

While many communities around the country would benefit from Federal support in addressing connectivity issues, Tribal areas face particular challenges.[60] Broadband deployment and adoption in Tribal Lands remains well below national averages, creating yet another barrier for education, healthcare and economic development. The Council recommends that DOI bring together Federal agencies to focus time and resources on identifying creative ways to address the unique challenges facing Tribal areas.

RECOMMENDATION: Federal Agencies, working in conjunction with Native American leaders and led by DOI, will work to address broadband challenges on Tribal Lands.

Access is not enough. Broadband adoption and Internet use is often lowest among those populations that can most benefit from digital information services. Agencies must look for opportunities to further promote and support broadband deployment, adoption and education in areas that are aligned with their programs and missions.

RECOMMENDATION: Federal Agencies, working with partners, will support broadband adoption and promote meaningful technology use.

Convene Stakeholders to Develop a Community Connectivity Index

- NTIA/OSTP: Convene stakeholders to design and launch a community connectivity index: NTIA, with support from the White House Office of Science and Technology Policy (OSTP) and National Economic Council (NEC), will convene a series of stakeholder forums to develop an index program that encourages advancements and investments in community connectivity. Stakeholders will include private, public, philanthropic and nonprofit groups with interests in leveraging broadband to support innovation, economic growth and digital inclusion. The index program will identify indicators of community connectivity in a range of categories related to broadband deployment, competition, and adoption, such as average broadband speed and adoption rates, local/regional policies that support broadband, digital inclusion policies, public access points and online applications such as telehealth, digital learning or e-government.

  The index would help community leaders understand where their strengths lie and where they need to improve, and would promote innovative community policies and programs. The goals of the index program are to:

  1) provide a framework and tools for communities to learn about the factors that influence a community's connectivity;
  2) mobilize community action and coordination to improve connectivity;
  3) encourage and recognize innovative policies and programs; and
  4) attract economic development and investment.

  The stakeholder community will determine the criteria and measures. The Executive Branch will provide convening support and explore partnerships to create, support and sustain the program.

  - Key Milestones:
    - Identify potential partners 1QFY16
    - Convene stakeholder forums to discuss criteria 2QFY16
    - Identify program owner(s) and sustainability plan 3QFY16
    - Announce program 1QFY17

Further promote "Dig Once" policies

- Joint Agency action to promote "Dig Once" policies: "Dig Once" policies promote broadband competition, reduce costs for broadband providers and decrease road-related costs from repeated excavation. Based on EO 13616, DOT has already taken actions to promote "Dig Once" policies, including developing best practices and model policies and disseminating them to State DOTs and other stakeholders. To build on the work of DOT and further promote "Dig Once" policies, DOI, EPA, GSA, USDA, DOC and HUD will, in partnership with DOT:
  - Review Agency regulations to assess if there are changes that would facilitate and/or promote "Dig Once" policies for State and Local governments.

- Develop, publish and disseminate best practices documents and models to stakeholders; and explore opportunities to provide technical assistance and expertise to interested State, Local and Tribal governments and recipients of Federal construction support.
- Review existing notification systems for Federally supported construction projects and identify opportunities to promote increased levels of information and visibility to Local and Tribal governments, utilities and broadband and communications service providers to facilitate practical project-level coordination between project sponsors and broadband providers.
- Agencies with Federal land stewardship responsibilities ensure that they lead by example in implementing "Dig Once" policies which encourage broadband competition and deployment, including planning, joint use, construction and notification.
  - Key Milestones:
    - DOT and DOI designate an office to provide information on "Dig Once" policies Q4FY15
    - Agencies will complete review of policies to encourage "Dig Once" Q2FY16
    - Agencies will publish best practice documents Q3FY16
    - Agencies will begin providing technical assistance, as appropriate Q4FY16

Address Broadband Challenges on Tribal Lands

- DOI: Conduct a Native American summit on broadband in Indian Country: DOI, in conjunction with other Federal Agencies, will conduct outreach to Tribes to plan and convene a Native American Broadband Summit to provide opportunities for the White House Council on Native American Affairs, Broadband Opportunity Council members and representatives from Federally-recognized tribes to review the current status of connectivity in Indian Country and discuss approaches to improve broadband access and adoption. The forum will provide an opportunity to develop inter-agency and inter-governmental actions to improve connectivity on Tribal lands and among Native American people. A Summit Report will be developed highlighting results, actions and intended next steps. Agencies supporting this effort include: FCC, Department of Homeland Security (DHS), ED, DOC, HUD, IMLS, and USDA.
  - Key Milestones:
    - Host listening session at White House Tribal Nations conference 1QFY16
    - Develop agenda, logistics and outreach plan 3QFY16
    - Conduct the summit 4QFY16

- DOI: Launch an interagency Tribal schools technology initiative: The DOI Bureau of Indian Education (BIE) will work with the White House Council on Native American Affairs, other Federal Agencies and the Educational Native American Network (ENAN) to increase broadband connectivity and educational support at schools throughout Indian Country. This action will leverage resources and programs such as ConnectED, BroadbandUSA, RUS Telecommunications and Distance Learning Grants and new e-Rate regulations to develop

and implement a plan to increase connectivity at Tribal Schools. All actions will be implemented through ENAN, which provides standards-based connectivity, security, content delivery, web services, distance learning, email access, education application access and other information services to BIE schools. In addition to supporting educational outcomes, high-speed connections at schools can support broader plans to increase broadband access in Tribal Lands. The following Agencies will support this effort: DOC, ED, HUD (ICDBG), IMLS and USDA.

  - Key Milestones:
    - Identify schools that need increased capacity broadband Q2FY16
    - Develop a 3-year plan to provide higher speeds to designated schools Q4FY16

- DOL: Expand technology-based job training in tribal communities: DOL Employment Training Administration will provide information on the Rural Utilities Service (RUS) Distance Learning and Telemedicine (DLT) and Community Connect grant programs to its Indian and Native American Program grantees. This information will reach over 125 grantees across the country, helping them to deliver online services to their customers. IMLS will also promote RUS grant information to their Native American Library and Museum Services grantees.
  - Key Milestones:
    - Outreach to IMLS Native American grantees 2QFY16
    - Outreach to DOL Native American "community of practice" 2QFY16

Support Broadband Adoption and Meaningful Technology Use

- HUD: Fund educational navigators in HUD-assisted housing to facilitate broadband adoption: HUD will issue a new grant opportunity to fund "educational navigators" in HUD-assisted housing to expand access to high quality education resources and assist residents with broadband access and adoption questions. An estimated $2 million in funding will be available for these competitive grants, which will be awarded to approximately 3 Public Housing Authorities (PHAs) over a 3-year period. The PHAs will designate which HUD-assisted housing developments they will serve.
  - Key Milestones:
    - Release Notice of Funding Availability 2QFY16

- ED: Expand technology-enabled learning practices to new partner Agencies: ED will build on its Future Ready Schools work by providing additional technical assistance and support to schools that have taken the Future Ready pledge. Technical assistance will include topics such as infrastructure, professional development and open educational resources. ED will collaborate with other Federal Agencies to expand the reach of the program to DOI's Tribal and rural community stakeholders, participants in HUD's ConnectHome demonstration program and DOL's adult learning programs. Future Ready Schools provides districts, schools and communities with a clear path to building the necessary vision and capacity to

use technology to improve learning. The following Agencies will support this effort: DOI, HUD, and DOL.

- Key Milestones:
  - Finalize 2015/16 Future Ready support plans for schools 4QFY15
  - Define DOI, HUD and DOL Future Ready collaborations 1QFY16
  - Align partner activities/resources to Future Ready Framework 1QFY16

- General Services Administration (GSA): Modernize government donation, excess and surplus program: GSA will lead an interagency effort to recommend updates to EO 12999[61] and the Computers for Learning program with the objective of updating equipment definitions and enabling additional user groups to receive surplus equipment. The donation program promotes recycling of surplus equipment while making devices available to support schools, libraries and educational non-profits. The following Agencies will support this effort: IMLS, NTIA.
  - Key Milestones:
    - Convene stakeholders to explore program revisions 1QFY16
    - Propose updates to Executive Order 2QFY16
    - Issue updated guidance on Computers for Learning 3QFY16

- Small Business Administration (SBA): Develop and deploy new digital empowerment training for small businesses: SBA will develop new training modules to support small businesses in using broadband-based applications and services to conduct better market research, improve operations and efficiency, and strengthen marketing and sales. SBA's Office of Entrepreneurial Development will distribute materials to SBA field offices including more than 900 Small Business Development Centers (SBDCs), 100 Women's Business Centers (WBCs) and 16 Veterans Centers. Materials will also be made available at 14 RUS Regional Centers through a partnership with USDA and through the BusinessUSA portal.
  - Key Milestones:
    - Provide updated digital literacy toolkit 2QFY16
    - Launch awareness campaign 3QFY16

- GSA: Publish consumer guides on the benefits of broadband targeted at key communities: Through targeted consumer campaigns using printed publications and websites, GSA will educate citizens, especially low-connectivity populations, on the benefits of broadband adoption. NTIA's BroadbandUSA will take the lead in creating content for these publications. Material on the benefits of broadband adoption will be provided through GSA's English and Spanish print publications, which reach over 300,000 people.
  - Key Milestones:
    - Develop communication/outreach plan 2QFY16
    - Develop digital inclusion content 2QFY16
    - Develop and issue initial digital products 3QFY16
    - Provide insert for print publications 4QFY16

4.3 Promote increased broadband deployment and competition through expanded access to Federal assets

One important way to increase competition in broadband markets – and thereby reduce costs and improve services for consumers – is to reduce the barriers to entry, especially the costs of infrastructure deployment. While patterns of land ownership and local and state regulations shape most deployment options, Federal lands, buildings and assets are also important conduits for broadband deployment. Recognizing this opportunity, the President released EO 13616, "Accelerating Broadband Infrastructure Deployment" on June 14, 2012, directing Federal Agencies to streamline application processes and otherwise promote access to Federal lands.[62] While Federal Agencies made significant progress, stakeholders suggest that more remains to be done – especially to provide more information on the wide range of Federal assets that are or can be made available for broadband purposes.

Continuing to build on EO 13616, the Federal government can also continue to do more to help service providers obtain the necessary permits and permissions to build out broadband networks on Federal lands, use Federal assets or cross Federal rights-of-way. Comments received through the Council RFC process highlighted the EO Working Group's work in these areas and urged continued and expedited efforts to streamline Federal permitting.[63]

RECOMMENDATION: Agencies will streamline processes and promote interagency coordination to lower barriers to investment.

When we think of Federal assets, it is common to think of public lands, buildings or towers, but Federal programs, publications and digital content can also serve as important resources to support broadband. These resources should be identified and made more accessible and available.

RECOMMENDATION: Agencies will create an accessible open inventory of Federal assets that can support broadband and expanding access to those assets.

Streamline Processes and Lower Barriers to Investment

- DOT: Issue policy guidance to leverage highway rights of way for broadband; DOT will develop and disseminate policy guidance defining broadband flexibilities within highway rights of way. Guidance will include, but not be limited to: the use and valuation of excess fiber capacity within Intelligent Transportation Systems (ITS); shared use of fiber, conduit and other assets; and policies for overlashing and pole attachments.
  - Key Milestones:
    - Develop draft guidance document 3QFY16
    - Issue final guidance 1QFY17
    - Outreach initiative includes national webinar 2QFY17

- DOI/USDA: Explore strategies to create efficiency and consistency in Section 106 review for broadband projects: DOI and USDA will work with the Advisory Council on Historic Preservation and other relevant Agencies, like the General Services Administration, to

explore ways to align and create efficiency in Section 106 historical review permitting processes for broadband projects on Federal lands.

- Key Milestones:
  - Inventory existing processes, agreements and policy 1QFY16
  - Identify priority improvements and establish timelines for implementation 2QFY16

Create Inventory and Expand Access to Federal Assets

- Create accessible open data inventory of infrastructure assets that can support broadband: NEC, OSTP and the Office of Management and Budget (OMB) will bring together and organize key Agencies across the Federal government to create and make available, as appropriate, a centralized inventory of broadband-related infrastructure assets. The inventory will include Federal data sets that contain telecommunications assets, buildings and other assets that can be used to support increased broadband deployment. All data will be publicly available through a common interface such as data.gov with tagging, or metadata to simplify discovery, access and use. While Agencies will not create a combined map of Federal assets, the data sets will include Geographic Information System (GIS) and other mapping data; the availability of these data sets will enable other providers to leverage this information to create regional or national asset maps. This centralized data inventory will enable private and public concerns to better evaluate and access the Federal assets that can be used to lower costs for broadband deployment, thereby promoting investment and increasing competition. Agencies supporting this effort include: DOC, DOE, DOI, DOT, GSA, and USDA.
  - Key Milestones:
    - Define required data elements and scope of inventory 1QFY16
    - Provide appropriately formatted data for database 1QFY16
    - Make data sets accessible to public 2QFY16

- DOI: Expand utilization of towers on Tribal and rural lands: DOI will develop an initiative to leverage over 4,000 towers and other assets on DOI-managed property to support broadband deployments. The initiative will seek public-private partnerships to "make ready" or upgrade towers in exchange for discounted tower leases, consistent with statutory requirements. This effort could reduce barriers to entry, increase competition and improve service over 500 million square acres of land in unserved and underserved communities. NTIA will assist DOI in this effort.
  - Key Milestones:
    - Develop "credit in kind" tower lease model 1QFY16
    - Develop agreements with partners 4QFY16
    - Establish semi-annual meetings (roundtables) 2QFY17

4.4 Improve Data Collection, Analysis and Research on Broadband

Research on broadband deployment, competition and adoption has not kept pace with the massive digital changes that permeate our economy and society. More research and development is needed: research into broadband economics; studies on deployment barriers; deeper study on how competitive telecommunication markets work in rural and remote regions; and updated studies on broadband adoption and digital literacy.

Council Agencies recognized the need for more granular data about broadband connectivity as it impacts their stakeholders and missions. This can include data on: broadband speeds and quality points; wireless loads at community anchor institutions; digital literacy and confidence; metrics on effective use; or e-commerce-driven business growth. Opportunities exist to leverage interagency collaboration to improve data collection strategies and to improve our overall understanding of current conditions and needs.

More than any one study; the Council recommends developing a comprehensive research and data collection agenda to prioritize future research plans and continuing to invest in pioneering research programs that support American competitiveness.

There are ample opportunities to engage stakeholders in developing this agenda, executing a broad research program and promoting more sharing across entities.

RECOMMENDATION: Agencies will develop a national research agenda, prototype advanced applications and improve data collection, analysis and research on broadband.

- National Science Foundation (NSF) and NTIA: Develop a national broadband research agenda: NSF and NTIA, with participation from other Federal Agencies and bureaus including the Commerce Department's Census Bureau and Economics and Statistics Administration, will develop a national broadband research agenda. This activity will comprise a review of existing broadband research and resources (including, *e.g.*, a review of Federal research programs, data sets and data collection efforts relating to broadband) and will engage the broader research community to understand challenges, needs, and opportunities and map out and prioritize the most significant opportunities for broadband research. Possible research questions include topics related to broadband innovation, deployment, competition, adoption and impacts (including social/economic impacts). The national broadband research agenda will also consider how to make broadband research (and data) publicly available via open data initiatives. The following Agencies will participate in this effort: DOC, DHS, GSA, HHS, IMLS, and others.
    - Key Milestones:
        - Inventory broadband data needs/assets of Federal Agencies 2QFY16
        - Engage the research community and stakeholders/practitioners 3QFY16
        - Publish broadband research agenda 4QFY16

- ED: Compile and create national data on broadband in schools: ED will use existing data collection tools and vehicles to assess and compile better national data about student access to technology in school and at home. This initiative will leverage Local and State Education Authority data tools and surveys to create a stronger national and regional understanding

of district needs for connectivity, devices and digital content. Results will inform future local, regional and national program and policy actions and support the goals and objectives outlined in ConnectED and implemented through e-Rate reforms.

- Key Milestones:
  - Identify appropriate state and regional survey capabilities 1QFY16
  - Develop additional queries to add to surveys 3QFY16
  - OMB approval for new data collection 2QFY17
  - Begin expanded data collection 3QFY17

- NSF: Pilot new applications that leverage advanced broadband networks: The US Ignite initiative, launched by the Administration in June 2012 with NSF serving as the lead agency, supports next-generation Internet applications that leverage ultra-high-speed connectivity and other advanced networking infrastructure to provide transformational capabilities and services, such as state-of-the-art weather monitoring to improve disaster preparedness and response and real-time individual and patient monitoring to improve health outcomes. NSF will work with other Federal departments and Agencies to develop a new round of application ideas and prototypes to advance agency missions. These efforts will demonstrate to agencies and to the public the technological benefits that can be gained by expanding gigabit broadband networks, encouraging a virtuous cycle of broadband investments and innovations. To develop these applications, NSF will work with partner Federal Agencies to convene workshops with academic researchers, entrepreneurs, developers, community organizers and users to spur collaborations and advance subsequent investments. Agencies supporting this effort include: NSF, HHS, DOT, DOJ, and HUD.
  - Key Milestones:
    - Convene workshops in various verticals 1QFY16
    - Prototypes new applications in at least two verticals 4QFY16

5. Implementation and Next Steps

The March 23, 2015 Presidential Memorandum established the Council to coordinate actions among all the member Agencies in support of the Administration policy to encourage investment in broadband infrastructure and promote the adoption and meaningful use of broadband technology. It further directed the Council to issue a report within 150 days providing a list of recommendations "on actions that Agencies can take to support broadband deployment and adoption."

Over the past five months, the Council sought public comment, conducted dozens of stakeholder meetings and held extensive interagency deliberations to explore opportunities to take action. Council members have deepened their understanding of the importance of broadband to their respective missions and of further actions their Agencies may take to advance broadband deployment, competition and adoption in America.

This Report describes 36 immediate actions, with associated milestones, that Federal Agencies have committed to undertake. In order to ensure that these recommendations are implemented in a timely and transparent fashion, Agencies will provide regular updates to the Council Steering Committee which will monitor progress and report periodically to the NEC.

In addition to the recommendations herein, the Council will explore additional actions that can unlock even more value across our agency initiatives. For example, greater reach, speeds, and cost-savings can be achieved in our broadband investments by adding technical expertise and reference designs to support each initiative. As one of its first steps, the Council will explore ways to bring this expertise into key agencies, which in turn will increase the impact of the recommended actions.

The work of the Council was shaped by input and conversation with a diverse group of stakeholders including State, Local and Tribal government leaders; major telecommunication carriers and associations; IT innovators and technology companies; nonprofits and community anchor institutions; community advocates and individuals. Their insights were critical to shaping these recommendations and will be critical to both the implementation of actions and considerations for future actions. Member Agencies will continue to engage with stakeholders to shape implementation plans, to gather feedback on the impacts of these changes and to develop future actions for consideration.

Appendix A: Broadband Opportunity Council Member Agencies

Appalachian Regional Commission	ARC
Council of Economic Advisers	CEA
Council on Environmental Quality	CEQ
Department of Agriculture	USDA
Department of Commerce	DOC
Department of Defense	DOD
Department of Education	ED
Department of Energy	DOE
Department of Health and Human Services	DHHS
Department of Homeland Security	DHS
Department of Housing and Urban Development	HUD
Department of the Interior	DOI
Department of Justice	DOJ
Department of Labor	DOL
Department of Transportation	DOT
Department of the Treasury	UST
Department of Veterans Affairs	VA
Domestic Policy Council	DPC
Environmental Protection Agency	EPA
General Services Administration	GSA
Institute of Museum and Library Services	IMLS
National Economic Council	NEC

Iowa Communications Alliance

Island Institute

Jackson, Karen

Joanne's Radiology Transcription

JALA International

Jenkins County Development Authority

Johnson, Gary

Johnson, Ron

Jones, Gail

Kaelber, Dr. David

Kehus, Cynthia A.

Kindle, Dwayne

Klatt, Mark and Kathy

Klise, Kate

Kopecky, Randy

Leadership Conference on Civil and Human Rights, et al.

Levin, Blair

Lexington Broadband Initiative

Lifeline Connects Coalition

Lone Eagle Consulting

Long, Samantha

Louisiana State University

MacIntyre, Norman

Manfredi, Frank

Marcus Spectrum Solutions LLC

Martin County Board of County Commissioners

Mathis, Virgil

McComb, William and Ardith

McGuire, Vince and Lynnette

Metts, William

Meyer, Randolph and Dorothy

Midkiff, Brenda

Minnesota Office of Broadband Development

Mississippi State University Extension Service Intelligent Community Institute

Mobile Future

Monroe Health Center

Monte R. Lee and Company

Moore, David

Morgan, Charlotte

Morrison, Melissa

Mozilla

Musgrave, Edward

National Association of Regulatory Utility Commissioners

National Cable & Telecommunications Association

National Congress of American Indians

National Digital Inclusion Alliance

National Hispanic Media Coalition

National Housing Conference

National League of Cities, National Association of Counties, and National Association of Telecommunications Officers and Advisors

National Rural Electric Cooperative Association

National Rural Health Association

National Tribal Telecommunications Association

National Urban League

New America's Open Technology Institute

Nelson County, VA

NoaNet

Appendix C: Endnotes

[1] Obama, Barack, "Presidential Memorandum - Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training," March 23, 2015, https://www.whitehouse.gov/the-press-office/2015/03/23/presidential-memorandum-expanding-broadband-deployment-and-adoption-addr (Presidential Memorandum).

[2] Over time, our definition of what constitutes high-speed internet or broadband has evolved as consumers engage in more activities online. Most recently, the Federal Communications Commission (FCC) has defined household "broadband" as 25 Mbps for download speeds and 3 Mbps for upload speeds. The FCC acknowledges that the ultimate goal is for consumers to have sufficient broadband capacity to take full advantage of the services and applications they want to use online. Accordingly, businesses and community anchor institutions supporting simultaneous users or mission critical applications may need 100 Mbps or multi-gigabit connections to address their needs. For this Report, we consider broadband as a connection that supports an acceptable quality of service for the applications that people expect to use in the course or their work and daily life.

[3] Council of Economic Advisors, "Mapping the Digital Divide," July, 2015, p. 1, https://www.whitehouse.gov/sites/default/files/wh_digital_divide_issue_brief.pdf (CEA report).

[4] Perrin, Andrew and Maeve Duggan, *Americans' Internet Access: 2000-2015*, June 26, 2015, http://www.pewinternet.org/2015/06/26/americans-internet-access-2000-2015/

[5] White House, "FACT SHEET: Next Steps in Delivering Fast, Affordable Broadband," March 23, 2015, https://www.whitehouse.gov/the-press-office/2015/03/23/fact-sheet-next-steps-delivering-fast-affordable-broadband.

[6] White House, ConnectED Initiative, https://www.whitehouse.gov/issues/education/k-12/connected.

[7] White House, "FACT SHEET: ConnectED: Two Years of Delivering Opportunity to K-12 Schools & Libraries," June 25, 2015, https://www.whitehouse.gov/the-press-office/2015/06/25/fact-sheet-connected-two-years-delivering-opportunity-k-12-schools.

[8] *Id.*

[9] White House, "FACT SHEET: ConnectHome: Coming Together to Ensure Digital Opportunity for All Americans," July 15, 2015, https://www.whitehouse.gov/the-press-office/2015/07/15/fact-sheet-connecthome-coming-together-ensure-digital-opportunity-all.

[10] NTIA, "Exploring the Digital Nation: Embracing the Mobile Internet," October 16, 2014, p. 15, http://www.ntia.doc.gov/report/2014/exploring-digital-nation-embracing-mobile-internet (Digital Nation 2014). The underlying data assumes that households have broadband service if they use anything other than dial-up.

[11] Fox, Susannah, Pew Research Center, "Americans living with disability and their technology profile," January 21, 2011, http://www.pewinternet.org/2011/01/21/americans-living-with-disability-and-their-technology-profile/.

[12] Id. Pew includes differences in education level and income together as "class."

[13] File, Thom and Camille Ryan, "Computer and Internet Use in the United States: 2013," November 2014, p. 6, http://www.census.gov/content/dam/Census/library/publications/2014/acs/acs-28.pdf.

[14] Digital Nation 2014, p. vii

[15] CEA report pp. 4-5, Figure 4.

[16] *Id.* p. 6.

[17] FCC Broadband Progress Report, p. 6.

[18] CEA report p. 7.

[19] Horrigan, John P., "Digital Readiness: Nearly one-third of Americans lack the skills to use next-generation 'Internet of things' applications," June 2014, http://jbhorrigan.weebly.com/uploads/3/0/8/0/30809311/digital_readiness.horrigan.june2014.pdf.

[20] CEA report p. 8.

[21] Prepared remarks of FCC Chairman Tom Wheeler, "The Facts and Future of Broadband Competition," September 4, 2014, p.2, https://www.fcc.gov/document/chairman-remarks-facts-and-future-broadband-competition.

[22] *Id.*

[23] Broadband Opportunity Council Notice and Request for Comment, Docket Number 1540414365-5365-01, 80 Fed. Reg. 23,785 (Apr. 29, 2015), http://www.ntia.doc.gov/Federal-register-notice/2015/broadband-opportunity-Council-notice-and-request-comment.

[24] Broadband Opportunity Council Comments, Docket Number 1540414365-5365-01, June 12, 2015, http://www.ntia.doc.gov/Federal-register-notice/2015/broadband-opportunity-Council-comments.

[25] City and County of San Francisco p. 3 (June 10, 2015); National Housing Conference p. 2 (June 3, 2015). *See also* endnote 37 below.

[26] *See* endnotes 39 and 40 below.

[27] AT&T Services, Inc. pp. 9-11 (June 10, 2015); Fiber to the Home Council Americas pp. 3-4 (June 10, 2015); SDN Communications and South Dakota Telecommunications Association p. 2 (June 10, 2015).

[28] Fiber to the Home Council Americas pp. 3-4 (June 10, 2015); National League of Cities, National Association of Counties, and National Association of Telecommunications Officers and Advisors p. 2 (June 5, 2015); Schools, Health & Libraries Coalition p. 6 (June 10, 2015); Town of Hawley p. 2 (June 9, 2015). *See also* endnote 51 below.

[29] American Library Association pp. 10-11 (June 10, 2015); Benton Foundation p. 3 (June 10, 2015); California Emerging Technology Fund pp. 30-31 (June 10, 2015); Connected Nation pp. 7-8 (June 10, 2015); EveryoneOn p. 3 (June 10, 2015); Leadership Conference on Civil and Human Rights et al. pp. 1, 3 (June 11, 2015); New America's Open Technology Institute p. 5 (June 10, 2015); State of Illinois p. 11 (June 10, 2015); Utah Governor's Office of Economic Development p. 7 (June 10, 2015); Washington State University Extension, Division of Governmental Studies & Services pp. 5-6 (June 10, 2015)

[30] Advanced Communications Law & Policy Institute, New York Law School p. 16 (June 10, 2015); CK Blandin Foundation pp. 7-8 (June 9, 2015); California Emerging Technology Fund p. 31 (June 10, 2015); EveryoneOn p. 3 (June 10, 2015); National Rural Electric Cooperative Association p. 18 (June 10, 2015); State of Illinois p. 12 (June 10, 2015),

[31] Coalition for Local Internet Choice p. 9-12 (June 10, 2015); Ed Fielding p. 1 (June 10, 2015); North Carolina Office of Digital Infrastructure p. 3 (June 10, 2015); State of Illinois p. 7 (June 10, 2015); Utah Governor's Office of Economic Development p.4 (June 10, 2015); Wireless Internet Service Providers Association p. 5 (June 10, 2015).

[32] Information Technology and Innovation Foundation p. 7 (June 10, 2015); Minnesota Office of Broadband Development p. 3 (June 10, 2015)

[33] California Emerging Technology Fund p. 9 (June 10, 2015); Information Technology and Innovation Foundation p. 6 (June 10, 2015); Blair Levin p. 5 (June 10, 2015); Valley Vision and the Connected Capital Area Broadband Consortium p. 2 (June 10, 2015).

[34] CK Blandin Foundation p. 3 (June 9, 2015); Senator Amy Klobuchar p. 2 (June 10, 2015); Minnesota Office of Broadband Development p. 9 (June 10, 2015); New America's Open Technology Institute p. 7 (June 10, 2015); The Quilt p. 4 (June 10, 2015); Rural Telecommunications Congress p. 5 (June 10, 2015).

[35] CTIA – The Wireless Association pp. 27-28 (June 10, 2015); Foundation Telecommunications Inc. p. 8 (May 28, 2015); Oregon Broadband Advisory Council p. 2 (June 10, 2015); Utah Governor's Office of Economic Development p. 2 (June 10, 2015).

[36] Colorado Association of Regional Organizations p. 2 (June 1, 2015); National League of Cities, National Association of Counties, and National Association of Telecommunications Officers and Advisors p. 4 (June 5, 2015); New America's Open Technology Institute p. 6 (June 10, 2015); National Rural Electric Cooperative Association p. 10 (June 10, 2015); Rural Telecommunications Congress p. 3 (June 10, 2015); Utah Governor's Office of Economic Development pp. 3-4 (June 10, 2015); Washington State University Extension, Division of Governmental Studies & Services p. 3 (June 10, 2015); Wireless Internet Service Providers Association p. 5 (June 10, 2015);

[37] Fiber to the Home Council Americas p. 3 (June 10, 2015); Minnesota Office of Broadband Development p. 6 (June 10, 2015); North Carolina Office of Digital Infrastructure p. 2 (June 10, 2015); Town of Hawley p. 6 (June 9, 2015); Washington State University Extension, Division of Governmental Studies & Services p. 2 (June 10, 2015).

[38] Utah Governor's Office of Economic Development p. 2 (June 10, 2015).

[39] Advanced Communications Law & Policy Institute, New York Law School pp. 4, 14 (June 10, 2015); American Cable Association pp. 2, 7-9 (June 10, 2015); Benton Foundation p. 5 (June 10, 2015); CenturyLink pp. 4-6 (June 10, 2015); Fiber to the Home Council Americas p. 3 (June 10, 2015); General Communications, Inc. p. 7 (June 10, 2015); Information Technology and Innovation Foundation p. 7 (June 10, 2015); Minnesota Office of Broadband Development p. 3 (June 10, 2015); National Cable & Telecommunications Association pp. 2-3 (June 10, 2015); National League of Cities, National Association of Counties, and National Association of Telecommunications Officers and Advisors (NATOA) pp. 6-7 (June 5, 2015); NTCA – The Rural Broadband Association pp. 10-11 (June 10, 2015); USTelecom p. 4 (June 10, 2015); Utah Governor's Office of Economic Development p. 2 (June 10, 2015); Wireless Internet Service Providers Association p. 3 (June 10, 2015).

[40] Advanced Communications Law & Policy Institute, New York Law School p. 14 (June 10, 2015); AT&T Services pp. 4, 6-9 (June 10, 2015); CTIA – The Wireless Association pp. 11-21 (June 10, 2015); Information Technology & Innovation Foundation p. 8 (June 10, 2015); PCIA – The Wireless Infrastructure Association pp. 7-8 (June 10, 2015).

[41] Advanced Communications Law & Policy Institute, New York Law School p. 5 (June 10, 2015); American Cable Association p. 3 (June 10, 2015); Benton Foundation pp. 1-2 (June 10, 2015); Blair Levin p. 5 (June 10, 2015); Connected Nation p. 3 (June 10, 2015); CTIA – The Wireless Association p. 3 (June 10, 2015); Fiber to the Home Council Americas p. 2 (June 10, 2015); General Communications Inc. p. 6 (June 10, 2015); Google Inc. p. 15 (June 10, 2015).

[42] AT&T Services pp. 4, 6 (June 10, 2015); Information Technology & Innovation Foundation p. 8 (June 10, 2015); Blair Levin p. 7 (June 10, 2015); Mobile Future pp. 6-7 (June 10, 2015).

[43] California Emerging Technology Fund, p. 27 (June 10, 2015); Minnesota Office of Broadband Development p. 4 (June 10, 2015); New America's Open Technology Institute p. 6 (June 10, 2015); NCTA –The Rural Broadband Association (June 10, 2015); North Carolina Office of Digital Infrastructure p. 1 (June 10, 2015); Rural Telecommunications Congress pp. 2-3 (June 10, 2015).

[44] American Cable Association pp. 2, 7, 9 (June 10, 2015).

[45] Advanced Communications Law & Policy Institute, New York Law School, p. 14 (June 10, 2015); CenturyLink pp. 5-6 (June 10, 2015); General Communications, Inc. pp. 2, 5, 7-8 (June 10, 2015); Independent Telephone & Telecommunications Alliance p. 5 (June 10, 2015); Minnesota Office of Broadband Development pp. 4, 6, 9 (June 10, 2015); Mobile Future p. 5 (June 10, 2015); State of Illinois p. 8 (June 10, 2015); Utah Governor's Office of Economic Development pp. 2, 3 (June 10, 2015).

[46] Benton Foundation pp. 4-6 (June 10, 2015); California Emerging Technology Fund pp. 11, 23 (June 10, 2015); CK Blandin Foundation p. 11 (June 9, 2015); Google Inc. p. 16 (June 10, 2015); ICF International p. 10 (June 10, 2015); Illinois 21st Century Digital Futures Alliance NFP p. 10 (June 10, 2015); Lifeline Connects Coalition pp. 2-9 (June 10, 2015); Senator Amy Klobuchar p. 1 (June 10, 2015); Leadership Conference on Civil and Human Rights pp. 1-4 (June 11, 2015); Minnesota Office of Broadband Development p. 10 (June 10, 2015); National Hispanic Media Coalition pp. 2-7 (June 10, 2015); National Housing Conference pp. 1-2 (June 3, 2015); Colin Rhinesmith pp. 1-2 (June 9, 2015); Stevens County Washington and Washington State University Stevens County Extension p. 3 (June 10, 2015); Town of Hawley p. 7 (June 9, 2015); USTelecom pp. 8, 10 (June 10, 2015); Washington State University Extension, Division of Governmental Studies & Services p. 4 (June 10, 2015); NCTA –The Rural Broadband Association (June 10, 2015).

[47] American Library Association p. 3 (June 10, 2015); California Emerging Technology Fund pp. 23, 25 (June 10, 2015); Foundation Telecommunications Inc. p. 9 (May 28, 2015); National Housing Conference pp. 2-3 (June 3, 2015); National Rural Electric Cooperative Association p. 15 (June 10, 2015); S. Srinivasan, Texas State University p. 1 (May 31, 2015); USTelecom p. 8 (June 10, 2015).

[48] *See* Advanced Communications Law & Policy Institute at New York Law School p. 16 (June 10, 2015); American Library Association p. 4 (June 10, 2015); California Emerging Technology Fund pp. 6, 9-10, 16-17, 21, 25 (June 10, 2015); Connect Your Community 2.0 pp. 1-3 (June 10, 2015); Google, Inc. pp. 17-18 (June 10, 2015); Information Technology and Innovation Foundation p. 9 (June 10, 2015); Island Institute p. 2 (June 4, 2015); Lifeline Connects Coalition pp. 3-5 (June 10, 2015); National Digital Inclusion Alliance pp. 4-7 (June 10, 2015); National Hispanic Media Coalition pp. 3 (June 10, 2015); National Urban League p. 2 (June 10, 2015); New America's Open Technology Institute pp. 4, 8-10 (June 10, 2015); Owen Holdings LLC pp. 13-14 (June 9, 2015); Colin Rhinesmith pp. 1-2 (June 9, 2015); Schools, Health & Libraries Broadband Coalition pp. 6, 12 (June 10, 2015); Strategic Networks Group p. 2 (June 10, 2015); Windstream p. 7 (June 10, 2015).

[49] See California Emerging Technology Fund p. 14 (June 10, 2015); Google Inc. p. 18 (June 10, 2015); National Digital Inclusion Alliance p. 5 (June 10, 2015).

[50] California Emerging Technology Fund pp. 7-8, 16 (June 10, 2015); Google, Inc. p. 10 (June 10, 2015); Information Technology Industry Council p. 4 (June 10, 2015).

[51] CK Blandin Foundation pp. 5, 7 (June 9, 2015); Minnesota Office of Broadband Development pp. 8-9 (June 10, 2015); National Digital Inclusion Alliance p. 6 (June 10, 2015); State of Illinois pp. 5, 9, 10 (June 10, 2015).

[52] American Library Association p. 4 (June 10, 2015); Benton Foundation p. 3 (June 10, 2015); CK Blandin Foundation p. 11 (June 9, 2015); Google Inc. pp. 18-19 (June 10, 2015); Leadership Conference on Civil and Human Rights pp. 1, 3 (June 11, 2015); Minnesota Office of Broadband Development pp. 5, 8 (June 10, 2015); National Digital Inclusion Alliance p. 3 (June 10, 2015); National Hispanic Media Coalition pp. 5-6 (June 10, 2015); National League of Cities, National Association of Counties, and National Association of Telecommunications Officers and Advisors p. 3 (June 5, 2015); Town of Hawley p. 3 (June 9, 2015).

[53] *See, e.g.*, Terry Allen p. 1 (June 5, 2015); Brian Atkins p. 1 (June 8, 2015); Mary Ruth Casey (June 9, 2015); Charley Hogue p. 1 (May 28, 2015); Ed Musgrave p. 1 (May 27, 2015); Barbara Roy (May 24, 2015); Jesse Walser p. 1 (June 10, 2015); Shelley Wilson p. 1 (May 24, 2015).

[54] California Department of Technology p. 3 (June 12, 2015); CK Blandin Foundation p. 11 (June 9, 2015); Dr. David Kaelber p. 2 (June 10, 2015); Leadership Conference on Civil and Human Rights et al. pp. 1, 2 (June 11, 2015); Minnesota Office of Broadband Development p. 7 (June 10, 2015); USTelecom pp. 32-33 (June 10, 2015).

[55] Alaska Native Tribal Health Consortium p. 1 (May 28, 2015); EveryoneOn pp. 2-3 (June 10, 2015); Yolo Local Agency Formation Commission p. 2 (June 10, 2015).

[56] Google Inc. p. 8 (June 10, 2015); Independent Telephone & Telecommunications Alliance pp. 7-8 (June 10, 2015); USTelecom pp. 21, 25-26 (June 10, 2015).

[57] Foundation Telecommunications Inc. p. 3, 5, 11 (May 28, 2015); Schools, Health & Libraries Broadband Coalition p. 10 (June 10, 2015); Wireless Internet Service Providers Association p. 7 (June 10, 2015).

[58] CTIA – The Wireless Association pp. 28-29 (June 10, 2015); TechAmerica p. 7 (June 10, 2015); USTelecom pp. 15-17 (June 10, 2015).

[59] AT&T Services Inc. pp. 4, 9-11 (June 10, 2015); C.K. Blandin Foundation pp. 5, 7 (June 9, 2015); Fiber to the Home Council Americas pp. 3-4 (June 10, 2015); Minnesota Office of Broadband Development p. 8 (June 10, 2015); National League of Cities, National Association of Counties, and National Association of Telecommunications Officers and Advisors p. 2 (June 5, 2015); Schools, Health & Libraries Coalition p. 6 (June 10, 2015); Town of Hawley p. 2 (June 9, 2015). See Minnesota Office of Broadband Development p. 9 (June 10, 2015); National Digital Inclusion Alliance p. 6 (June 10, 2015); State of Illinois pp. 5, 9, 10 (June 10, 2015).

[60] Affiliated Tribes of Northwest Indians Telecommunications Committee p. 6 (June 10, 2015); ICF International p. 4 (June 10, 2015); National Conference of American Indians pp. 1, 3 (June 10, 2015);National Tribal Telecommunications Association pp. 3-4 (June 10, 2015); Rural Broadband Policy Group p. 1 (June 11, 2015)

[61] White House, "Executive Order 12999 - Educational Technology: Ensuring Opportunity for All Children in the Next Century", April 17, 1996, http://www.gsa.gov/portal/content/100841.

[62]White House, "Executive Order -- Accelerating Broadband Infrastructure Deployment', June 14, 2012, https://www.whitehouse.gov/the-press-office/2012/06/14/executive-order-accelerating-broadband-infrastructure-deployment.

[63] See California Emerging Technology Fund, p. 27 (June 10, 2015); Minnesota Office of Broadband Development p. 4 (June 10, 2015); New America's Open Technology Institute p. 6 (June 10, 2015); North Carolina Office of Digital Infrastructure p. 1 (June 10, 2015); Rural Telecommunications Congress pp. 2-3 (June 10, 2015).

EXHIBIT 27

From critic of Click! to business partner

April 21, 2008 Publication: News Tribune, The (Tacoma, WA) Page: B05 Word Count: 399

Editor's note: This originally appeared on the Inside the Editorial Page blog: blogs.thenewstribune.com/oped

Times do change. Pierce County telecom entrepreneur Brian "Skip" Haynes once hated the very idea of Tacoma Power's Click!Network.

Now his rapidly growing company, Rainier Connect, is using the utility's fiber-optic network to expand its business and is building a new headquarters in Tacoma's Brewery District.

The irony is not lost on the folks at Tacoma Power, although there was no trace of it in the announcement by Click! last week. The news: Rainier Connect, the 98-year-old, family-owned firm formerly known as Mashell Telecom, has signed to become the fourth private company, or ISP, providing broadband Internet services via cable modem to Click! customers.

Rainier Connect has been using the city's fiber-optic network since 2001 to provide phone and data service.

No small irony here. Back in 1996, when the City Council debated whether to allow Tacoma Power to build the network and provide a cable-TV alternative to widely detested cable monopoly Viacom (later TCI, now Comcast), Haynes objected loudly.

Haynes authored an oped piece for The News Tribune arguing that government had no business competing with private telecom companies. But Viacom's reputation for lousy service was so bad that the public clamored for any reasonable alternative to the cable monopoly, even if it was Tacoma Power. The council vote was unanimous.

There's no disgrace in Rainier Connect's new hookup with Click! Network. The company, based in Eatonville for most of its history, has prospered serving the rural market and built a reputation for responsive service. It was one of the first small, independent firms to take advantage of telecom deregulation to offer "bundled" products.

Now Haynes and Rainier Connect are ready to compete with Comcast and the three ISPs that operate over the Click! Network. And the winners are the Click! customers who have far more telecom alternatives to choose from than most U.S. consumers.

We haven't talked to Haynes lately. But he probably would admit that he never foresaw the competitive opportunities that Click! ultimately opened up for his own business.

Times do change.

EDITORIAL: From critic of Click! to business partner

(News Tribune, The (Tacoma, WA) (KRT) Via Thomson Dialog NewsEdge) Apr. 21--Times do change. Pierce County telecom entrepreneur Brian "Skip" Haynes once hated the very idea of Tacoma Power's Click!Network.

Now his rapidly growing company, Rainier Connect, is using the utility's fiber-optic network to expand its business and is building a new headquarters in Tacoma's Brewery District.

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(Correction: TCI, not Viacom, was the unpopular cable giant serving Tacoma at the time. As the commenter notes, -TCI CEO Leo Hindery, a Bellarmine grad, showed up to lobby strenuously against the Tacoma Power proposal.)

Haynes authored an oped piece for The News Tribune arguing that government had no business competing with private telecom companies. But Viacom's reputation for lousy service was so bad that the public clamored for any reasonable alternative to the cable monopoly, even if it was Tacoma Power. The council vote was unanimous.

There's no disgrace in Rainier Connect's new hookup with Click! Network. The company, based in Eatonville for most of its history, has prospered serving the rural market and built a reputation for responsive service. It was one of the first small, independent firms to take advantage of telecom deregulation to offer "bundled" products.

Now Haynes and Rainier Connect are ready to compete with Comcast and the three ISPs that operate over the Click! Network. And the winners are the Click! customers who have far more telecom alternatives to choose from than most U.S. consumers.

We haven't talked to Haynes lately. But he probably would admit that he never foresaw the competitive opportunities that Click! ultimately opened up for his own business.

Times do change.

To see more of The News Tribune, or to subscribe to the newspaper, go to http://www.TheNewsTribune.com.

EXHIBIT 28

Mitchell Shook Comments at Tacoma City Council March 16th, 2019

DejaVu! Just like 2015. Same two culprits - Same scheme! Wasn't City Council's unanimous "NO" loud enough?

Don't try pretending "Oh, we'll still own it" or this 40 year "lease" is anything but privatization.

Click! is more than the wires. **Click! is these 35,000 TV and Internet customers – their billing relationship, bank account information, set top boxes, brand recognition, loyalty, love and pride in THEIR hometown Network -America's first municipal network** and **the $200 million they paid to build it**.

That's Click! No putting lipstick on the pig. Dumping it destroys it!

What if Rainier's acquired by Wave? Or moves these customers onto Wave's network? Wave is a $100 Billion private equity fund. They're pulling fiber here right now.

-1 There's no recovering from that -You set us **back 20 years!**

You raise prices, eliminate competition and **kill our open access network** -**It's not "Open access" when the network operator sets the prices and is one of the competitors**.

What's Click! worth? There've been **no bids or RFPs**. Only an RFI **asking for ideas**. **Advanced Stream offered to pay for the $1 million Gigabit upgrade -and easily met all 12 policy goals under the current partnership. Nobody loses their job! Click! Remains a public asset.**

And who says **Rainier's $2.5 million a year offer** is even fair? That **doesn't cover your depreciation expense, which, like all the other unrelated overhead Click! pays, isn't going away**

The ISPs are paying $8 million a year now!.

Click! has $27 Million a year in revenue! TPU's own internal Valuation shows Click! making $7 million a year -with a market value of over $100 million. Have you seen that! It's right here!

-2) Where is the Audit Council voted for?

With no RFP, appraisal or audit, this is an illegal gift of public funds!

Board Member Flint told us the ***"Numbers were not real"*****,** that **TPU management wanted to dump Click!** and **threw in "*Everything and the Kitchen Sink*"** to **create the fake "squishy" numbers**. He told the News Tribune reporter "***check out these numbers, something's wrong here!"***

You blew the whistle, fired the Director, but never got the audit? You have a duty of care.

To ignore that is negligence! A violation of our trust!

Cities across America are setting up networks. The Internet is becoming a public utility. We invented that! Stick with Click! and let us get back to work.

EXHIBIT 29

Tacoma Public Utilities

MEMORANDUM

DATE: August 22, 1996

TO: Mark Crisson, Director of Utilities

FROM: Steve Klein, Light Superintendent

SUBJECT: Letter from TCI to the Tacoma City Manager Regarding Municipal Ownership of Telecommunication Systems

In 1992, Cedar Falls Utilities began investigating the possibility of installing a broadband communications network throughout the City of Cedar Falls, Iowa. TCI of Northern Iowa, the incumbent cable television provider in the City of Cedar Falls, sent a letter to the Board Chair of Cedar Falls Utilities to help point out all the reasons why the City of Cedar Falls should stay out of the telecommunications business. As the city and utility moved forward with their research, TCI also pursued an aggressive advertising campaign using billboards to convince the community of the drawbacks of municipal telecommunication.

We anticipated a similar response by TCI to the Light Division's investigation of cable services. The letter from TCI to Mr. Corpuz has not changed substantially from their standard campaign letter. It has not been updated to reflect the positive changes wrought by the Telecommunications Act of 1996 (which was signed into law on February 8). It has not been updated to reflect that our exploration of telecommunications is the initiative of a revenue based utility business not a tax funded government. It has not been updated to reflect the fact that if TCI is to upgrade their own system in four years - as repeatedly promised - that they will have to "dig up streets, trench through people's yards and landscaping." It has not even been updated to reflect that what is really being discussed is a telecommunications infrastructure with the ability to deliver multiple advanced telecommunications services provided by many parties not just a cable television system.

Many of the issues TCI raised and the cases they cite become increasingly dated with each passing year, however, some valid issues raised by the letter will be addressed in our business plan as we explore how to best serve the needs of our customers and greater community. TCI has reportedly sent variations of this letter to officials in other communities upon learning that those communities were exploring their telecommunications options.

The attached document is the letter from TCI to Mr. Corpuz with all of the text that is new since the 1992 TCI/Cedar Falls letter italicized so that what new information exists in the letter can be easily identified.

Attachment

Ray Corpuz, Jr.
Tacoma City Manager
747 Market Street, Room 1244
Tacoma, WA 98402

RE: Cable Television Service in the *City of Tacoma*

Dear Mr. *Corpuz*:

The City of *Tacoma* has stated that it is considering owning and operating its own cable television system. Before the City acts, TCI of *Tacoma, Inc*. would like to discuss several important issues which the City of *Tacoma* should carefully consider before embarking on this major business venture.

First and foremost, cable television is a competitive entertainment business offered to customers on a monthly subscription basis. Unlike telephone or other public utility services, it is not considered an essential "public service". Unlike telephone and other public utility service, it is rarely the case that it is taken by most, if not all, of the citizens within your community.

Moreover, cable television is far more than a mere hardware business. It is a service and entertainment business marked by exceptionally high expectations and by changing tastes in what programming should be delivered. It requires skills and resources not typically cultivated by government. Survival in the cable business requires retail and marketing savvy. Given the rapidly changing market environment in which cable television competes, the number and range of these skills are certain to increase in the future.

These simple facts have far-reaching implications concerning the practical and political ability of the City of *Tacoma* to operate such a business over the long haul. The City of *Tacoma's* system would duplicate and compete with TCI of *Tacoma's* existing system, both for present and future subscribers. Available studies, including those commissioned by cities considering municipal ownership, show that such

"overbuild"[1] systems generally do not work, *prove to be more costly than expected*, and rarely survive for long.

These are complicated legal questions about how the City of *Tacoma* must avoid censorship or political abuse of its system, and how the City of *Tacoma* can compete with the cable industry and regulate it at the same time. *Finally, any consideration the City of Tacoma has given to competing against TCI of Tacoma, Inc. in order to provide better service and rates should have been mooted by federal regulations. In 1992, Congress adopted extensive new regulation of cable television rates, customer service, channels carried, ownership and other matters. Cable Television Consumer Protection and Competition Act of 1992, Pub. Law 102-385, 106 Stat. 1460 (hereinafter "1992 Cable Act"). Under the FCC's implementing rules, local franchising authorities have the right to apply federal rate standards to cable service. Even prior to the 1992 Cable Act, many franchising authorities have had such rate regulatory authority. This is because in 1991 the Federal Communication Commission reregulated rates in many cable systems in the country. In Reexamination of the Effective Competition Standard for the Regulation of Cable Television Basic Service Rates, 6 F.C.C. Rcd. 4545 (1991), the FCC restored rate control to local governments unless six different channels were available off-the-air -- a test which regulated all but a few major metropolitan systems. Thus, both rates and customer service are regulated, and the concerns motivating municipal overbuilds have been mooted.*

Hence, while TCI of Tacoma, Inc. acknowledges the non-exclusive nature of its franchise, and does not shy away from competing with others on a level playing field for its valued customers, after considering the complex questions and issues discussed in this letter, TCI of Tacoma, Inc. is confident the City of Tacoma will agree that cable and other entertainment services are best provided by private enterprise.

I. PRACTICAL PROBLEMS OF A CITY-OWNED CABLE SYSTEM

To fully appreciate the political consequences of a City-owned cable system, you must first understand the practical consequences. The City of *Tacoma* is about to

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[1] An overbuild is considered to occur when one cable operator constructs its cable system alongside the existing cable operator's cable system, with the result that residents in the area have the option to subscribe to either cable operators' cable service

join TCI of *Tacoma, Inc*. in the free-enterprise competitive home-entertainment industry. The City of *Tacoma* must spend millions of tax dollars to build and operate its system. City of *Tacoma* officials may be placing their political futures on the line since they must keep their customers and non-customers happy. They may also be the direct recipient of criticisms from customers and non-customers alike relating to rates, programming, customer service, and the costs associated with owning and operating a cable system. The City of *Tacoma* faces an expensive long-term commitment to continue to ensure quality, state-of-the-art services and facilities. Finally, you must do all of this facing fierce and fast-developing competition, and not just from us, since the entertainment industry in one of the most competitive in the country.

The one fact above all others which must guide your decision is that a cable system is not a public utility, like electricity or water. Cable television is a business. Sophisticated marketing and operations are essential for a modern cable system to survive. As we have already suggested, this fact has far-reaching implications, as the experience of other cities has shown. Many public officials are leery of operating a cable system because they do not wish to be responsible for a non-essential, entertainment oriented service. Cable television is a highly visible target for customer criticism *and the nature of the cable product spurs ongoing consumer inquiries*. It is likely the City of Tacoma will lose significant time and resources responding to customer complaints. It is also unlikely that public officials responsible for building and operating a cable system will bear the full brunt of their dissatisfied customers and non-customers' ire.

Despite dedicating significant resources to building and operating a cable system, cities that have undertaken such an endeavor have not fared well. A respected cable industry analyst, John Mansell of Paul Kagan Associates, Inc. has noted that no municipally-owned overbuilds make money. Moreover, Mansell says on average, they tend to have fewer channels and are slower to add service than the average cable system.[2] It is easy to see that a municipal cable system could prove to be an economic and political albatross.

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[2] K.C. Neel and Bob Diddlebock, "Rate Complaints Prompt Florida Cities to Mull Overbuilds," Cable World, May 3, 1993 at 33.

A. Construction and Maintenance of a Cable System

Start-up costs for cable television are significant. Before the City of Tacoma can give even more of its citizens cable service, it will have to spend millions of tax dollars or otherwise raise capital in a time of clear economic contraction. *In most cases where a municipality has undertaken cable operation, capital requirements and operating burdens have far exceeded projections. A few examples illustrate this point.*

The City of Paragould, Arkansas turned on its municipality-built system in 1991. The town's 18,500 residents were then required to pay higher taxes two years in a row to pay off the $3.2 million in bonds issued to fund the project as well as to subsidize the City's cable system. According to the City, it simply did not generate the number of customers it had hoped.[3]

In Morgantown, North Carolina an election was held by the City paving the way for a municipally-owned cable system. By early 1994, the costs and burdens of operating such a system set in:

> *Morganton residents are paying more than they think for cable TV, whether they receive the service or not. The Morganton City Council voted in June to subsidize the new cable television system with $1 million - or 5.7 percent -- of the revenues from the city's electric system. At the same time the city is using Electric Fund dollars to underwrite its cable television system. It has raised city electric rates by more than 9 percent in the past four years. For the average residential electric customers with a monthly bill of $65.32, the subsidy meant $3.72 if its goes toward paying for a city-owned cable system which in fiscal year 1992-1993 ran up a deficit of $600,000. Thus, even Morganton residents who don't subscribe to the city's cable system still help pay for it through their electric bills.*

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[3] Larry Young "Paragould Cable to Drive Taxes Higher Once Again," Arkansas Democrat Gazette, July 31, 1993 at 2D. "Paragould, AR to Lose Millions on Overbuild," Cable TV Regulation, July 30, 1993 at 9.

Morganton New Herald, January 9, 1994 as reprinted by Thomas P. Southwick, "Morganton Update," Cable World, January 24, 1994 at 16.

Even with the subsidy from electric fund payers, it was reported that Morganton was forced to raise cable rates $2.00 per month higher than the local private operator and $3.00 a month more than the City had promised it would charge when the voters approved the municipally-owned system in 1993.

In Michigan, a number of cities have simply wanted out of the cable business. Five exclusive Detroit suburbs decided recently that potholes on asphalt highways are easier to face than those on the information highway. The exclusive towns of Grosse Pointe, Grosse Pointe Park, Grosse Pointe Woods, Grosse Pointe Farms and Harper Woods agreed to sell their 16,600-subscriber system to Comcast Corp. in late 1994. The president of the municipal system said that looming competition plus the increasing complexity of the cable business as it moves into telephone and date-based services prompted municipal officials to reconsider their involvement in the business. The system currently needs a $7.5 million rebuild, equivalent to about a $460 per subscriber cost.[4]

In Orangeburg, South Carolina,[5] *the City decided in 1991 that it would overbuild the local operator. A feasibility study performed by Malarkey-Taylor Associates found that the City's plan to spend $3.7 million to build 160 miles of cable plant was completely inadequate. Instead the City would have to spend upwards of $10 million a year to build a 300-mile system -- a project that the City would lose from $8 million to $10 million a year on for the next 10 years.*[6]

Moreover, if the City of *Tacoma* decides to overbuild the *TCI of Tacoma, Inc.* it may have to spend even more money than *TCI of Tacoma, Inc.* has spent. As a "single system" operator, the City of *Tacoma* will likely *be unable to take advantage of any quantity or volume discounts, and thus may be forced to purchase all equipment at top*

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4 John M Higgins, "Michigan Cities Sell Out to Comcast," Multichannel News, October 10, 1994 at 41.

5 The cable system in Orangeburg was never built. The Supreme Court of South Carolina determined after protracted litigation that the City had not been granted the requisite authority by the legislature under the State's constitution to engage in cable operations. Sheppard v. City of Orangeburg, 44 S.E. 2d 601 (1994).

6 K.C. Neel and Bob Diddlebock, "Rate Complaints Prompt Florida Cities to ull Overbuilds," Cable World, May 3, 1993 at 1, 33.

dollar. As a necessary part of providing service to its customers, the City of *Tacoma* will have to dig up streets, trench through people's yards and landscaping and restore them to their original condition. Such construction is a very costly proposition both in dollars and in lost goodwill for the City of *Tacoma's* cable business.

-- It is almost impossible to overbuild a cable system without causing some cuts and outages to others present on the poles and in the trenches. The City of *Tacoma*, as must any other cable operator, will be required to compensate the utilities and incumbent cable operator for cuts and outages to their operations during the construction of this new system. The City of *Tacoma* must bear the costs of restoring service and of keeping the citizens aware of what is happening so that they may expect the problem and know that someone is taking care of it.

In addition, the City of *Tacoma* will likely have to hire outside persons or companies to construct, supervise and/or maintain the cable system since, of course, the City of *Tacoma* is not in the business of constructing or maintaining cable systems. It must ensure that the system is properly built and maintained -- once again, a very costly proposition. Cable systems must be operated in compliance with numerous governmental agencies' rules and regulations. Most significantly, the City of *Tacoma* must stay constantly vigilant of these rules as a failure to comply may result in fines, loss of operating licenses, or a complete forced interruption of service. Cable operators have years of experience meeting regarding such requirements which cannot be easily duplicated overnight by the City of *Tacoma*.

B. Customer Service

Effective customer service is the lifeblood of a cable operator. While City of *Tacoma* officials deal with citizens on a host of problems each and every day, the City of *Tacoma* may not understand the enormity of the job it faces in serving its citizens as cable subscribers. Citizens dealing with government or with utilities resign themselves to the fact that there is only one agency or company to deal with, and that they must accept the service they get. Cable customers, in contrast, are a tougher group to satisfy. They are paying for entertainment and information and demand performance. If they are not satisfied, they can do to competitor, *such as direct broadcast satellite (DBS) services or multi-point multi-districts (MMDS) services*, use their VCR or watch broadcast TV. One brief outage or fuzzy picture often triggers complaints and require a service call. In addition, cable customers have a choice of service levels, and are constantly adding or subtracting services, resulting in service calls. It is extremely expensive to maintain the full-time customer service representatives and repair people necessary to keep customers

satisfied. *[For example, TCI of Tacoma, Inc. has at least 102 people doing a variety of jobs including installing, fixing trouble calls, and responding to customer service complaints.]*

Again, our experience shows what the City of Tacoma may expect. TCI of Tacoma, Inc. constantly receives telephone calls from customers concerning everything from programming questions, to cable connections and disconnections, to change of service, to questions rates, to of course, service problems.

Additionally, it is reasonable to assume that City of Tacoma staff also have numerous other responsibilities that may compete with the time they may devote to cable problems and complaints. This could result in unhappy subscribers who may decide that the grass was greener on the other side, and return to the competing, private cable system *or to other competitors, such as DBS or MMDS. DBS providers now can offer customers virtually identical programming service as those offered by the cable operator -- and do so at a very competitive price. To prevent this loss, the City of Tacoma* may have to incur the expense of hiring additional employees who devote their time solely to cable, or of retaining an independent company to handle customer service.

C. Marketing

If the service is the sustaining lifeblood, marketing is the food which fuels the growth of the system. A cable system must attract customers and take step to retain existing ones, and can only do so through aggressive marketing -- especially when faced with head-to-head competition from various sources. The City of *Tacoma* may not be aware of how costly these marketing efforts are since it does not have to market its governmental or utility services, as they are necessities which people must use.

The City of *Tacoma*, moreover, may have to spend substantially more than *TCI of Tacoma, Inc.* for marketing. The City of *Tacoma* will have the added burden of attracting customers away from *TCI of Tacoma, Inc.* and overcoming the loss of goodwill caused by its disruption of streets and yards during construction. Finally, the City of *Tacoma's (and TCI of Tacoma, Inc.'s)* advertising and marketing expenses in an environment of direct cable competition may likely be higher than what *TCI of Tacoma, Inc.* has been spending thus far.

D. Programming

The City of *Tacoma*, like all cable operators, must purchase much of the programming which is most desirable to its customers. A single municipally owned system may not be able to obtain the volume based discounts for premium and satellite services which multiple system operators such as *TCI of Tacoma, Inc.* enjoy. *Any such higher operating costs* may turn the tables against the economic viability of a municipal cable system.

E. Competition

The City of *Tacoma* may think that it will only be competing with *TCI of Tacoma, Inc.*, but rest assured this is not the case. One reason *TCI of Tacoma, Inc.* presently spends so much for marketing and customer service even without direct cable competition is that cable television is only one part of the consumer-entertainment industry. Cable television vigorously competes on a daily basis with over-the-air broadcast television, *DBS* low power television, subscription television, satellite master antenna television, *MMDS*, video cassette recorders, videodisc players, newspapers, radio and theaters for the consumers' entertainment dollars. The reality is sobering. According to one source, only 66% of all households in the United States that are able to receive cable television do indeed subscribe to cable service. *[TCI of Tacoma, Inc.'s present average in the City of Tacoma is 60% of the households which TCI of Tacoma, Inc. has passed with its cable system.] Our penetrations range from 45% to 100% in varying economic and demographic areas of the City.* The City of *Tacoma* is, of course, aware that telephone companies have been given authority by the courts to enter the cable business, which not only would add another competitor to the list, but a competitor that already has *equipment placed throughout the City and already has a* "business relationship" with every resident already receiving telephone service. *Thus, the City of Tacoma will not only need to complete with TCI of Tacoma, Inc. for the residents' entertainment dollars, but also will have to compete with other providers of home entertainment. Given the large number of likely competitors, the City of Tacoma may face not only greater costs to increase the attractiveness of its service to potential subscribers, but also lower revenues as it is forced to reduce prices to meet competitors' offerings.*

Finally, no other City-operated service must compete with the scope and variety of businesses we have described. The City of *Tacoma* may not appreciate the costs and risks of such competition since the City of *Tacoma's* traditional services, such as public utilities that, because of their status as utilities, do not compete, can raise rates to make up for inefficiency, and do not face the prospect of economic failure. A cable system will have no such luxury.

II. POLITICAL CONSIDERATIONS

A city-owned and operated cable system will be a political adventure as well as a commercial venture. The City of *Tacoma* will face not only the commercial pressure of surviving in the marketplace, but the political pressure of justifying the use of millions of tax dollars or other generated capital of such a risky venture. This pressure will be enormous and will be a constant distraction of City of *Tacoma* officials. If the City of *Tacoma's* system fails, the public outcry will be deafening. In addition to this obvious political risk, there are several less evident risks.

A. A Cable System Would Be Financed By all For the Benefit of a Few At the Expense of Public Services

In this time of economic retraction, there may be only one realistic way for a municipality to finance a cable system: tax increases, the most politically unpopular act government can do. The citizens are quite naturally going to wonder where these tax dollars are going. *We have already pointed out that only 60% of homes who have access to cable actually subscribe*. Even if the City of *Tacoma* succeeds in obtaining customers equal to half of *TCI of Tacoma, Inc.'s* existing subscribers (which may be an extremely optimistic view), the fact remains that millions of tax dollars will have gone to give a small portion of City of *Tacoma* residents a luxury entertainment service. In these days of rising crime, increasing economic hardship and decreasing social services, the citizens may well question, raucously, use of tax money for cable service already available. Assurances that the system will be self-supporting or even profitable may not be enough to quell the criticism. The simple fact is that "break even", let alone profitability, is years down the road, and, as studies have shown in an overbuild system, may never come.

Of course, for these years of losses, the City of *Tacoma* will have no subsidize the system with tax dollars. One observer has noted that in the few examples of municipal ownership available, the inability of the municipal system to turn a profit led to a decrease in other city services in order to cover the losses of the cable system.

B. Tougher Restraints to Follow

One "political" consequence which may be unexpected is the fact that, simply because the City of *Tacoma* is a governmental body, it must operate under restraints which do not bind private businesses. The City of *Tacoma* must comply with civil service employment requirements, government contracting procedures and other bureaucratic

programs. Thus, the City of *Tacoma* may take longer and possibly spend more money to build and operate a cable system as a result of the various bidding processes and public hearings required. In addition, the City of *Tacoma* may face civil service statutes or other legal obstacles not faced by private enterprise when terminating, counseling, or disciplining unproductive employees. All of these considerations may make for good government, but may not be good business practices. In a service-oriented, competitive business, these restraints may stop the City of *Tacoma's* cable system from effectively reacting to changing competitive conditions.

C. Is Running a Media Enterprise a Proper Role of Government?

Cable systems are, after all, media enterprises. They deliver electronic information and entertainment, which is quite a different business from utility service. The First Amendment made a very deliberate choice to keep government out of controlling the media. When Congress established broadcasting, it carefully placed ownership of broadcasting facilities in private hands, subject to FCC licensing. PBS is government owned, but it usually occupies no more than one channel per region. Cable has followed the same model, with ownership of media left in private hands (subject to municipal franchising) and typically, one channel provided for government access. These separations between government and media were established to ensure active criticism of government actions by the media. Against such a tradition, local citizens may question whether they really want to turn over control of their cable channels to the City of Tacoma. With limited channel capacity, will the City of Tacoma feel comfortable choosing between a Hispanic channel like Galavision, Black Entertainment Television, Asian American Satellite TV, the Playboy Channel and the Family & Values Channel? Is the City of Tacoma willing to withstand the pressure of protests from a minority of subscribers over programming that the majority of subscribers enjoy? The First Amendment counsels that the risks of such inevitable abuses must be minimized by keeping media in private hands.[7] *Not only must an operator make programming decisions in choosing among the plethora of optional satellite services -- the operator must also provide fill-in substitute programming for syndicated exclusivity "blackout" periods on many broadcast signals; and provide local origination programming. Governmental control of the sole source of programming to a subscribing home is*

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[7] Recently, New York City made the decision to divest its municipally owned radio stations. The Mayor stated that the sale enabled the City to shed "the distorted role" that government plays when it acts as a media owner, saying that [b]roadcasting is not at the core of the business of city government. Cities don't belong and don't do well in the broadcasting business. It fits a different form of government than a democratic one." Donna Petrozzello, "New York City to Sell WNYC-AM-FM," Broadcasting and Cable, March 27, 1995 at 48.

contrary to the nation's tradition of free speech.

Moreover, a cable television system's decision to carry and not carry certain signals may increasingly subject the system to litigation. Residents in New York and elsewhere have successfully sued a cable television system for failure to carry all of the desired pay services. Carriage of adult programming has caused citizens to file obscenity charges against the cable system. As competing shopping channels, music channels, new channels, and other channels develop, operators, including the City of Tacoma, can anticipate charges to be filed when one is selected over another.

A separate question arises with respect t what the City of Tacoma can contribute to the viability of the cable industry whose core product is discretionary. Over the last few years, there has been a 70% increase in investment by cable television operators into new programming sources. Many satellite services which were on the verge of failure or which could not obtain the necessary capital have survived through infusions of cash by cable operators. The wealth of satellite programming today is a product of this "free enterprise" system. A municipal cable system is comparable to municipal competition with other private enterprises such as theaters, supermarkets, or newspapers. We would question whether the government should extend its control of streets or electrical utility services into competition with discretionary services such as cable television that need a constant infusion of creativity and cash to survive.

III. EXPERIENCE SHOWS THAT OVERBUILDS DO NOT ENDURE

So far we have only discussed the problems, costs and risks to the City of *Tacoma* in the "ideal world" where the systems are equally competing head-to-head for subscribers. In reality, however, the City of *Tacoma* is going to overbuild *TCI of Tacoma, Inc.'s* system and then try to take away customers who have been committed to *TCI of Tacoma, Inc.* for years as well as encourage new customers from those that historically may have chosen to not take cable service. While competition, of course, is generally necessary in our economic system, studies have shown that cable competition through overbuilds is typically a costly failure for both the overbuild system and for customers.

The City of *Tacoma* does not have to take just our word for it. One observer has noted:

> Analysts have reached the general consensus that unless a market

> has a high housing density -- at least 90 to 120 homes per mile -- and high penetration, it cannot sustain two competing cable systems. The capital costs of erecting duplicate plants simply cannot be recovered if the pie is split in half. There may be temporary rate wars, but several analyst -- including Touche Ross, Booz Allen and Malarkey-Taylor -- have reported how the technical quality of plant suffers, how maintenance is neglected and how programming funds are diverted to the war as operating revenues dry up.[8]

In another instance -- Jefferson City, Missouri -- the city appointed a task force to find ways to increase competition. Instead, the task force found that '[d]ue to the small market size of Jefferson City, the size of TCI (the current franchise holder), and the capital investment required, it is unlikely that a purely private enterprise will choose to risk its dollars and assets in head to head competition in Jefferson City."[9] The task force also found that "[t]he cost to overbuild the system is as great as to build the system originally," which was estimated to be "$2 million dollars."[10] Finally, the task force reported that two cable operators were interested in the city; however, "[n]either operator expressed interest in competing with TCI on a head-to-head city-wide basis. When informed of franchise requirements[11] for city-wide plans, both operators withdrew their expression of interest."[12]

A. Historically Overbuilds Have Not Succeeded

Studies show that overbuilds do not endure, make financial stability of the companies questionable, restrict service expansion and system improvements and do not

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8 Glist, Exploring the Hidden Costs of Overbuilds, Cable T.V. and News Media, Vol VI, Number 11 (Jan., 1989).

9 Report of Cable TV Task Force, City of Jefferson City, Missouri ("Task Force Report'), December 5, 1990, at 1.

10 Id. at 4.

11 In accordance with [Florida] statutory requirements, any second operator, even a City-owned system, would have to obtain a franchise which is not less burdensome or more favorable than the franchise that Operator received from the City. [See Section 166.046(2) (a)-(h) Florida Statutes].

12 Id. at 6.

foster different programming offerings.[13]

One consultant on overbuilds has stated that the history of overbuilding shows that generally only one company survives an overbuild.[14] In fact, the existence of "only a handful of over 7,000 cable systems in the U.S." shows that there is "little if any economic incentive for a cable operator to consider an overbuild seriously."[15] The economic drain on both operators in an overbuild may cause them to reduce construction and expansion of their system, causing their long term service to suffer. In fact, applying that observation to the situation in the county at the time, TMC found that permitting overbuilds would slow-down current construction efforts in which the incumbent operator was engaged.[16] Furthermore, as one analyst has written:

> It is generally assumed that cutthroat competition results in both companies operating at a loss because of low prices. Soon, one or both companies are not able to sustain the loss, so attempts are made to reduce expenses by cutting back on system maintenance, subscriber services, etc. Eventually, the strongest company dominates and seeks to purchase the weaker company. Then, according to the scenario, the remaining company [raises its rates].[17]

Thus, even though the City of *Tacoma* may hope its overbuild will bring the benefits of competition, studies suggest that it more likely will bring a failed system, a damaged incumbent, and higher rates to make up for the harm.

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13 See Touche Ross and Co., "Financial Analysis of Potential Addtional Cable Television Franchise Awards" for the Sacramento Metropolitan Cable Television Commission, July 30, 1986; Touche Ross & Co., Financial Economic Analysis of the Cable Television Permit Policy of the City and County of Denver," December 23, 1983, plus the other reports referred to herein.

14 Telecommunications Management Corporation Report on Overlapping Cable Television Franchises and Overbuilding of Cable System to Hillsborough County, Florida ("TMC Report"), at 53. "The long-term impact of an overbuild depends, therefore, as to whether the overbuilt areas can be self-sufficient or even profitable on its own, or must be subsidized. If the latter, and if the subsidy is large, the overbuild generally will be unstable, with the weakest operator eventually bought out or driven out." Id. at 110 (emphasis in original).

15 Id. at 93.

16 Id. at 50.

17 John Mansel of Paul Kagan and Associates.

Before the City of *Tacoma* takes such a risk, it must carefully examine whether its proposed system has any realistic chase of success.

B. Financial Feasibility

The City of *Tacoma* must begin by not only studying the present situation, but also by getting financial projections concerning all aspects of future cable operations. If the City of *Tacoma* does not have in-house cable experts and economists to do these projections, it will have to hire them, as do many private cable companies.

One analyst who has done many feasibility studies for cities considering going into the cable television business has cautioned against such a venture, stating that "no cable investment is without risk. In an overbuild situation, there is less certainty, for a variety of reasons, over expected cash flows which are largely driven by overall subscriber levels and service rates."[18] Feasibility studies or financial projections must be extremely detailed and account for all possible variables. They must also contain enough specific information to let you understand the proposed operation. The assumptions and projection techniques used must make sense in the context of cable operations. Finally, projections may be worthless unless they are based on realistic information and an assessment of whether the City of *Tacoma* has the ability to carry out the plans on which the projections are based. For example, one critique of a feasibility study done by Rice Associates for the City of Cambridge, Massachusetts, Communication Strategies Incorporated found that "[s]everal capital expenditure items have been understated or omitted," which amounted to an underestimated capital expenditure of several million dollars.[19]

Additionally, the City of *Tacoma* must consider the economic outlook for the coming years. Presently, as we all are well aware, the economic condition in this country is not very good. In hard times, luxuries such as entertainment may be the first to go. Moreover, considering the problems that Savings and Loans and other banks are experiencing, such institutions may not be very anxious to lend such substantial amounts of money for the construction and the other start-up costs of a risky venture such as a second cable television system. Thus, the City of *Tacoma* may not be able to obtain such

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[18] Cable Television Feasibility Study for the City of Tallahassee, Florida, Rice Associates, December 31, 1987, at II-18.

[19] MUNICIPAL OWNERSHIP OF CABLE TELEVISION IN CAMBRIDGE, How Much Will It Cost And How Will It Operate? ("Cambridge Report") Communication Strategies Incorporated, Executive Summary, February, 1893, at 22.

financing without securing it with tax increases or bonds.

C. Capacity and Disruption in Rights-of-Way and Private Property

The City of *Tacoma* must carefully study the use and capacity of easements and rights-of-way in the City. The City of *Tacoma* must address how the additional installation of cables and construction of the City-owned system will affect the utilities -- electric, telephone and water companies -- serving the City of *Tacoma*. The City of *Tacoma* will need information from the utilities concerning capacity on existing poles, projected uses of poles, whether poles would have to be changed, cost of such change, use of underground easements and the capacity of such easements. Finally, the City of *Tacoma* should determine how much of its proposed system will be installed underground since such installation is not only much more costly, see Rice reports, but also causes the greatest disruption to public and private property.

The potential disruption makes it imperative that the City of Tacoma conduct such an overbuild study[20] prior to deciding to go forward with the construction of a second system. One consultant has stated that cable television is a disruptive force at installation and causes inconvenience to the County's citizens.[21] The disruptive impact in an overbuild cannot be minimized. "Because overbuilds represent a more dense and complex use of rights-of-way and may require new digging in areas dug up previously they are likely to cause somewhat more disruption than a 'new build'."[22] For example, in its report to Dade County, Florida, Touche Ross reported that to install cable underground, the second operator would have to lift and replace sidewalks, acquire new easements from private owners, retrench and repair the road service, or in some instances, build on the opposite side of the road of the present operator. Touche Ross found the following possible additional disruptions:

In both aerial and underground construction (assuming

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20 For example, when Hillsborough County, Florida, was considering granting additional cable television franchises which would have resulted in an overbuild situation, the County hired Telecommunications Management Corportation ("TMC") as its consultant to advise the County on whether to grant such additional franchises and to review the applications submitted by those seeking the franchises.

21 TMC Report ("TMC Report"), at 97, 121.

22 TMC Report at 123.

> coexistence in the right-of-way or easements) the additional CATV cable is to be placed close to the existing CATV cable, thereby leaving it vulnerable to be damaged or cut.
>
> The similarities between the physical properties of the existing CATV plant and the new CATV plant may cause confusion to the cable construction crews unless the two systems are marked correctly.[23]

The City of *Tacoma* has a duty to insure that its citizens do not needlessly bear this inconvenience. If the City of *Tacoma* did not have a cable operator already providing service, but was about to seek an initial installation, the competing duty to provide cable service might override the interest in avoiding disruption. This is not the case, however, because the City of *Tacoma* already has a cable operator whose franchise insures that all of the City's residents have cable service available to them.

Not only must the City of Tacoma be concerned with physical disruption during an overbuild, it must also be wary of exhausting the utilities' capacity for accommodating additional cable television systems. One county was cautioned to avoid exhausting this capacity in order that the capacity will be available for future use.[24] In addition, it was reported to the county that to install just one additional cable system, at least 50% of all of the poles in the county would have to be changed.[25] The Jefferson City task force made a similar observation when it found that "[t]he ability to attach additional wire to the poles [within Jefferson City] is limited by regulation on spacing. If a pole is not available, the cost to place a taller pole at the same location is approximately $500.00 per pole. Given the number of poles that are at capacity, this would be significant cost to the new competitor.[26]

D. Other Problems

In addition to the disruption discussed above, Touche Ross reported to Dade County that there are day-to-day operation problems with second cable system,

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23 Touch Ross Report to Dade County, Florida at 19.
24 TMC Report at 121.
25 Id at 51.
26 Task Force Report at 4.

including:

> Customer confusion -- Not knowing whom to call for installation and trying to understand the rate and tiering structures of two different companies can be difficult for some new subscribers.
>
> Drops and Installations -- . . . The entire subscriber tap to back-of-set is subject to incorrect hook-ups, theft of facilities, etc., and therefore can be a source of customer confusion and frustration.
>
> Service -- Customers not familiar with the cable TV provider can c call the wrong cable company for service. If it is caught before a truck is dispatched, the inconvenience is that of the clerk's time ant the phone traffic. However, if the truck is dispatched, the customer is inconvenienced as they wait for a repairman that is not authorized to work on their system and then wait further for the proper repairman to arrive.[27]

Other problems identified by Touche Ross include:

> The side effects of construction, such as traffic detours, trenching and lawn/garden restoration, cable crews in backyards, etc., are in themselves a nuisance, and are compounded by the fact that the residents will have to go through this process again with a second operator.
>
> A review of the County's complaint log over the past five years indicated that underground cable trenching and pedestal placement issues are common complaints among Dade County residents. Placements of a second pedestal can cause additional objections in many areas.
>
> After an additional CATV company is in operation, it is likely that some subscribers will have switched service to the second operator.
> When this occurs, their homes may have multiple aerial drops installed which could result in a negative aesthetic effect.

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[27] Touche Ross Report to Dade County, Florida at 20.

> Each attachee to a utility pole is required to place a separate anchor and guy wire at specified locations as opposed to attaching to existing Telco or CATV anchors. The additional anchor will be placed and may be an eyesore.[28]

All of these problems create public irritation and therefore have political consequences. Given the dismal success of overbuilds generally, the City of Tacoma would be well advised to reevaluate any plans for an overbuild.

IV. LEGAL CONSIDERATIONS

The City of Tacoma, like the City of Paragould, Arkansas, must face the fact that "a number of legal questions must be resolved in any government owned and operated system. The legality of competing, questions of antitrust, anticompetitive behavior by the City must be guarded against."[29] Although a municipality may own and operate a cable system, that is only the beginning -- not the end -- of the inquiry.

For Example, some of the potential legal issues include:

1. Violation of Constitutional Due Process and Equal Protection Rights

How can you regulate us and compete with us at the same time? This simple and fundamental question raises a host of constitutional issues.

The City of Tacoma is going to face the twin pressures of still competition and the enormous financial and other challenges which face any overbuilder. At the same time, the City of Tacoma is the authority which regulates us. There will be a strong temptation for the City of Tacoma to overcome its disadvantages by increasing our regulatory burden. Because of the conflict arising from the City of Tacoma's dual role as our regulator and competitor, all regulatory actions taken by the City of Tacoma which may fall with a heavier hand on us then on the City of Tacoma, are open to a constitutional due process claim. This claim can be asserted regardless of the procedures used to take such actions.

Next, the City of Tacoma cannot give itself an unfair advantage

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[28] Id. at 19-20.

[29] Jefferson city Task Force Report at 11.

over Company. Any franchise granted to the City of *Tacoma* must ensure that the City is treated equally with the private cable operator. The City of *Tacoma* cannot franchise itself on terms and conditions more favorable, or less burdensome, than those required by *TCI of Tacoma's* franchise. There must, at all times, be a "level playing field" for competition. This principle requires the City of *Tacoma* to go through the exact same franchise application process, including, if applicable, competitive bidding.

If the City of *Tacoma* is obligated to give itself a franchise under state or local laws, the provisions of that franchise agreement must be at least the same as those of *TCI of Tacoma, Inc.'s* franchise. This may include the following: the same channel capacity; the same service area; construction, installation, maintenance of the system in the same manner as *TCI of Tacoma, Inc.*, consistent with all laws, ordinances, construction, safety, and FCC technical standards; the same requirements as to location and maintenance of poles, wires and appurtenances so as to cause minimal interference with the proper use of the streets and public ways; equal treatment as to payment and use of the poles with other utilities and cable operators; the same responsibilities for restoring all sidewalks, driveways, landscaping and street surfaces; the same operational standards, including provision of customer services, repair services and maintenance of the technical and quality standards which *TCI of Tacoma, Inc.* is required to maintain; some mechanism for maintaining the fees which *TCI of Tacoma, Inc.* is obligated to pay; and the same required services, including at least the same special access channels, production facilities for local origination programming and the like.

As you can see, this is quite a list.

2. Control Over Content Under the U.S. Constitution and the Federal Cable Act

A city-owned cable system makes an inviting target for political abuse on two levels. First, incumbent elected officials would be tempted to use their access to the system to gain a "free" advertising edge over challengers. Second, politicians may be tempted to control the content of programming on the system (i.e. nudity in R-rated movies or restrictions on politically unpopular groups on ideas having access to the system) to advance their personal political agendas.

In order to avoid challenges by citizens or public interest groups under both constitutional and federal law, accompanied by cries of "censorship" in the media, the City of *Tacoma* must ensure that it will not exercise control over the cable system's

4. Federal and State Antitrust Violations

The City of *Tacoma* may not, of course, compete unfairly with TCI of *Tacoma, Inc.* and use its regulatory authority with a heavier hand upon TCI of *Tacoma, Inc.* so as to threaten to drive TCI of *Tacoma, Inc.* out of business. In such circumstances, the City of Tacoma may not be immune from federal or state antitrust claims and may be subject to pay treble damages, attorneys' fees and other costs. The City of *Tacoma* also can be enjoined from any unfair competition by the court order.

The issues outlined above are but a brief summary of the possible legal pitfalls facing a City planning to build and operate a cable system in order to compete with private cable operators. These legal factors and possibly many others, must be considered along with the economic, managerial and political factors raised earlier before any decision is made by the City of *Tacoma* to enter into the cable television business.

In short, the City of *Tacoma* has a lot to think about before it decides to embark on this course. TCI of *Tacoma, Inc.* hopes that this letter will give the City of *Tacoma* a chance to pause and let the euphoria of the benefits you may now expect to be replaced by a realistic appreciation of the pitfalls and risks associated with municipal ownership of what is traditionally an entertainment service provided by private enterprise.

Sincerely,

Barbara J. Wyatt
General Manager

BJW/lkb

EXHIBIT 30

Update: Tacoma Power/Rainier Connect Contract Negotiations

City of Tacoma | Tacoma Public Utilities

City Council/Public Utility Board Joint Study Session

MAY 14, 2019

ITEM 1

OVERVIEW

- The contract concepts to discuss today concern:
  - Major pre-conditions to transfer of operational control to Rainier Connect
  - Reports and monitoring
  - Remedies to ensure contract compliance

PROPOSED REQUIREMENTS

Major Pre-Conditions to Transfer of Operational Control

- Technical Compliance Assurances
  - Transition Plans
    - Post-approval period
    - Post-transfer of control period
  - Plan regarding Click! employees

PROPOSED PUBLIC MEETINGS

June 18th	Presentation to Board and Council at Joint Study Session of proposed material terms and transition framework
June 25th	Council resolution and final draft contracts on Council agenda for public comment only
June 26th	Board resolution and final draft contracts on Board agenda for public comment only
July 10th	Board to consider approval of final contracts
July 16th	If Board votes to approve on July 10th, Council to consider concurrence with Board's approval

EXHIBIT 31

Is an IRU really an IRU?

Davis Wright Tremaine LLP

USA | December 17 2013

Everyone talks about indefeasible rights of use, or IRUs, as if they are unique or special. Reams of FCC and state regulatory orders have been written on them as have fiber agreements, both large and small. Those statements, however, usually take IRUs for granted. In other words, they assume that everyone knows what it is and go from there.

There was a time when IRUs (along with MIUs or minimum investment units) only applied to wet cable; in particular, trans-oceanic fiber. The purpose was to allow carriers who could not afford to build or participate in the build of a cable to purchase dark fiber in the cable but without any ownership interest. There was also a time when the term of the IRU was the depreciable life of the cable or 20 years. Over time, IRUs made their way on land and not only applied to dry cable but, eventually, lit capacity and had terms anywhere from 15 to 25 years.

Then, of course, there was the infamous "how do I book the purchase and sale of an IRU?" For instance, can I account for it as an asset and depreciate it? If so, can I book it in year one or must I spread the revenues over the life of the IRU? Is it property under the Tax Code or the Communications Act or a service? Even Congress and the SEC got in the act back at the turn of the century and every once in a while there is a Revenue Ruling by the IRS that never seems to get to the core of the issue.

The truth, however, is much more simple than it has been made out to be. The answer: an IRU is a lease, of which there are two types, an operating lease or a capital lease. Whether it is an operating lease or a capital lease depends on the terms of the IRU and the indicia laid out by the Financial Accounting Standards Board's Statement of Financial Accounting Standards No. 13, entitled *Accounting for Leases*. (Although dated 2002, the reader may find this explanation to be both of interest and helpful.) IRUs also have an additional characteristic: the right of

quiet enjoyment. In other words, the purchaser of the IRU is permitted to use it without any interference by anyone other than for required maintenance.

So far so good for accounting purposes; not yet so clear for how it is treated for taxes. Specifically, is it a service or property? Much writing has been done on the tax treatment of IRUs but little has been resolved. Only in one instance am I aware was it found to be property and that instance was a bankruptcy case where the judge needed to determine if an IRU agreement was executory and could be rejected. The judge arrived at his decision by parsing the language of the IRU agreement and noting that the operations and maintenance of the fiber was a service that was the subject of a separate agreement.

An IRU is not, therefore, really an IRU and unfortunately a lot of folklore has risen around the term such that it has strayed from its original intent. But cutting to the core, an IRU is a lease, usually a capital lease, with the unfettered right to enjoy it.

EXHIBIT 32

History of Tacoma Public Utilities

By David Wilma Posted 12/16/2002 at https://historylink.org/File/5025

Tacoma's electrical and water utilities, its industrial railroad, and its telecommunications system all grew out of a need to serve the community coupled with frustration at the ability of private companies to provide services. After more than 100 years of operation, Tacoma Public Utilities operates a wide network of dams, reservoirs, pumping and power stations, and a small but vital railroad.

In 1884, Philadelphia capitalist and railroad man Charles B. Wright (1822-1898) organized the Tacoma Light and Water Co. with a franchise from the City Council. The company drew drinking water from several creeks and distributed it through pipes made from hollowed-out logs. He used the flow to power a small dynamo that first lighted Tacoma streets in late 1885. With the monopoly of the franchise, he could charge what the market would bear and customer service was an afterthought.

By 1890, Tacomans were unhappy with the quality, reliability, and cost of the water supply. Wright, who controlled Tacoma Light and Water from Philadelphia, became impatient with both the criticism and the slow rate of return on his investment. He suggested that the City buy the company. The parties struck a deal of $1.75 million for the water and electrical properties. Voters approved the deal on April 11, 1893, and on July 1, Tacoma was in the utility business.

Tacoma soon learned that the deal was somewhat one sided. Some of the creeks were not owned by Tacoma Light and Water at all and the wells produced less water than advertised. But the city pressed ahead to secure additional water and power sources.

Tacoma Water

The city engineer looked at the newly acquired water system and estimated that it lost 1.5 million gallons a day. An equivalent amount was lost when a dam on Galliher's Gulch failed. Consumers complained of dirty, bad smelling, bad tasting water and the City struggled to find a dependable and safe source of drinking water. The choice boiled down to digging more wells -- not always successfully -- or tapping the Green River and letting gravity move water to Tacoma. The gravity option was much more expensive and in September 1907, voters rejected that plan.

The city was left with polluted surface water sources, including Galliher's Creek where farms, cesspools, and privy vaults contaminated the stream. The Hood Street Reservoir was little better. In the meantime, the Water Department (now known as Tacoma Water) dug wells to tap groundwater.

In 1909, Tacomans finally approved the Green River plan and also a reorganization of city government that eliminated the 16-member City Council from the management of the agencies. Water and electricity would be under the control of an elected Commissioner of Public Utilities. Commissioner Nicholas Lawson completed work on the 43-mile Green River line in 1913, overcoming significant legal, engineering, and financial hurdles. Although water quality continued to be a nagging problem, typhoid deaths -- attributed to contaminated water -- dropped to a sixth of the old rate.

There were no meters and customers paid a flat rate for water. The average Tacoma resident used four times as much water as did residents of New York, Chicago, or Philadelphia. With this extravagance, Tacoma Water struggled to meet the demands of new industries that wanted to build in Tacoma. Pulp plants in particular needed vast quantities of water. A plan to develop Lake Kapowsin as a source in the late 1920s came to nothing, and Tacoma had to keep drilling wells to meet demand. In the meantime, the original wood-stave pipeline from the Green River began to fall apart.

Franklin Roosevelt's New Deal in the 1930s helped pull the water system out of the doldrums. With federal loans, Commissioner Ira Davisson completed replacement of the Green River pipeline and built other supply lines and system improvements. But the wooden distribution mains under city streets had never been upgraded. Failure of the pipes threatened drinking water safety and fire protection. Replacement of the old wooden mains began in 1945, funded by property owners in local improvement districts under Commissioner Clifton A. Erdahl.

In 1952, voters approved a change to city government in which a nine-member City Council appointed the city manager. The Public Utility Board appointed the Director of Public Utilities, who named the heads of City Light (now Tacoma Power), City Water (Tacoma Water), and the Belt Line Railway (Tacoma Rail). The new Public Utility Board boosted water rates by 30 percent and mandated universal metering. The rate hike generated almost no comment. The metering program was loudly protested, however, but the City Council backed the program in 1954. With meters, Tacoma's water consumption dropped. To increase revenue, Tacoma started serving small cities and unincorporated areas and acquired a number of community systems.

If finding enough water in rivers and wells and building and maintaining the system were not big enough problems for Tacoma, protecting the safety of the water was a serious challenge. The U.S. Department of Agriculture was supposed to protect the watershed that fed the Green River, but logging operations and human habitation introduced contaminants into water that flowing to Tacoma. In 1951, Tacoma Water began gradually buying up land to protect it. Plans for the U.S. Army Corps of Engineers' Howard Hanson flood control dam upstream from Tacoma Water's headworks forced construction of two large storage reservoirs in the city.

The reservoirs allowed turbidity caused by dam construction and operation to settle out.

To properly protect the Green River as a water source, Tacoma Water needed to exclude all access to a one-half mile buffer around the river. Property owners, anglers, King County, and U.S. Government agencies battled Tacoma Water's efforts to buy, condemn, and swap land. At one point in 1962, a King County commissioner blew the locks off a gate to the watershed and dragged the gate away. Tacoma Water responded with another gate and guards. In 1968, after court battles and many confrontations -- physical, legal, and political -- Tacoma Water owned 10,000 acres of land and declared its watershed protection program a success.

The construction of a second pipeline from the Green River proved even more difficult. The original project, called Pipeline No. 5, began in 1967 and would have tapped an aquifer in North Fork Valley. The project would insure water supplies to Tacoma and the growing communities of Pierce and south King Counties. After more than 30 years, the pipeline and related water quality and environmental enhancements are scheduled for completion in 2004.

The well system that Tacoma Water used as a safe alternative to surface water was not immune from contamination. In 1981, traces of industrial pollutants from an oil company were discovered in two wells in South Tacoma. The U.S. Government funded a $1.2 million treatment plant that pumped the water and stripped out the contaminants.

Tacoma Power

In 1893, the electrical system was little more than wiring to distribute power purchased from competing power companies and trolley lines. The new electric utility rebuilt its steam boilers and by 1894 it was twice as profitable as the water system. The City cut electricity rates and set a nationwide reputation for economical power that would last a century.

Buying power from private companies was unacceptable to the City Council and it looked to the Nisqually River for hydropower. A popular vote to approve the $2.3 million expenditure was assisted by the private supplier's ill-timed raising of rates and cutting power to the city's water pumps. The LaGrande Powerhouse came on line in 1912 and supplied all of Tacoma's power needs -- for a time.

The business and housing boom of World War I demonstrated the need for more capacity and in 1919, Tacoma launched the Cushman Project on the Olympic Peninsula. Cushman electricity reached Tacoma in 1926. Almost immediately, Public Utilities Commissioner Ira Davisson (1860-1951) asked for a second Cushman Dam, which came on line in December 1930. Despite the Great

Depression, Tacoma rightfully billed itself as the "Electric City" with cheap electric rates and widespread use of electric appliances.

In 1930, Tacoma Power became a monopoly when Puget Sound Power & Light's franchise to sell electricity in Tacoma expired. This ended decades of economic and political rivalry between supporters of municipal ownership and private power interests.

Despite the hard time of the 1930s, Tacoma Power's load continued to grow. Consumers were encouraged to buy appliances, which the utility repaired for free. The system was upgraded to improve efficiency and reliability. Unemployed customers could work off their light bills by digging trenches or painting buildings. Tacoma boasted the highest residential consumption in the nation.

By the time of World War II, Tacoma Power saw more shortages coming and laid plans to expand the Nisqually River Project with Alder Dam and a new dam at LaGrande, both completed in 1945. The tie lines with Seattle and with the Columbia River supplied the extra power that kept the lights on and industries humming during the war.

The post-war boom applied as well to electricity consumption and Tacoma Power looked to the Cowlitz River for more capacity. Opposition to the new dams from anglers and from the State Game Department delayed Mayfield Dam until 1963, and Mossyrock Dam until 1968. Despite increased generation and improved efficiencies, by the end of the 1950s, Tacoma Power produced only half of the power its customers used. The situation was relieved somewhat with the Cowlitz dams and a portion of a coal-fired power plant in Centralia purchased in 1970. But the energy crisis of 1973 forced Tacoma Power to raise rates and to ask consumers to conserve. Ratepayers became Watt Watchers and Tight Watts. Conservation became part of Tacoma Power's permanent strategy. A kilowatt saved was equivalent to a kilowatt generated.

The energy business saw nuclear power as the answer and Tacoma Power signed up for shares of four Washington Public Power Supply System reactors. But the WPPSS found the plants to be far more expensive than it planned and cancelled the projects in 1982. It was the largest default of public bonds in history, costing Tacoma money with no electricity to show for it.

If shortages in electricity that raised rates were not enough, Tacoma Power had to deal with increased pressure on its precious hydroelectric facilities. The dams and powerhouses proved detrimental to runs of salmon and steelhead, so the utility funded and operated fish hatcheries and mitigation programs. On the Cowlitz River, 15 percent of the cost of the project went to protect fish. Other species affected by dams were protected with wildlife preserves purchased and maintained by Tacoma Power revenues.

Tacoma Rail

Public transportation began in Tacoma in 1885 with horse-drawn streetcars. In the 1890s, the street railway business boomed with electric trolleys. By the end of the decade, the Tacoma Railway & Power Co. (TR&P) was one of two dominant streetcar companies. Tacoma's own railroad had its origins with the TR&P and the need to provide transit services for employees of industries in the tideflats. TR&P passengers reached the tide flats by getting off the Pacific Avenue line at the 11th Street Bridge, walking across, and boarding another line on St. Paul Avenue.

In 1914, after years of negotiations and failed ballot propositions, Tacoma built a line across the bridge that was used by TR&P cars. The City lost money on the arrangement, which lasted just two years. By that time, the United States was involved in World War I and the new shipyards needed trolley service for their employees. When the City Council could not sell bonds for the extension, it made the City's electric utility buy them. The City laid track and a trestle over the Milwaukee Road tracks, and bought rolling stock. The City partnered again with TR&P to run the operation. The new line could not keep pace with the thousands of workers building ships for the war effort and an honor system for fares guaranteed financial losses. TR&P dropped out of the deal and on January 1, 1919, Tacoma officially owned and operated the mass transit and freight switching service to the tide flats.

The Tacoma Municipal Street Railway continued to lose money in its passenger operations and struggled under heavy debt. Customers of the freight business -- the belt line -- were unhappy with service. When the Northern Pacific contracted to use the belt line in 1924, other national carriers and major industries signed on as well. This allowed mainline rail access to all industrial users and uniform switching service and the belt line's future, if not its profitability, was assured. The name changed to Tacoma Municipal Belt Line Railway, and now is known as Tacoma Rail.

The 1920s saw the line extend service, but accidents, fires, and chronic indebtedness marred its record. The 1930s saw an improvement in the line's fortunes and in 1935 it posted an annual net gain, the first in its history, thanks to the freight operation. In 1936, Superintendent Charles H. McEachron purchased buses as part of a goal to replace the electric streetcars. The trolleys interfered with the switching locomotives and the only way to serve new passenger stops was to lay track. In May 1938, buses replaced trolley service. Even the boom of passenger traffic during World War II did not improve the financial performance of passenger service, however. The City Council voted to turn the service over to the Tacoma Transit Company on the first day of 1947.

In 1942, the Belt Line served 27 industries with 13 miles of track. Logs made up 40 percent of the traffic. The electric locomotives were dropped in favor of diesel in

1944, and a classification yard at 11th Avenue and Sitcum Avenue was completed in April 1945. Under Superintendent Neil H. Kime, the line finally reached some financial stability in 1947, but the track, facilities and rolling stock were in poor shape. Any profits went to pay off loans to City Light and other creditors. The major railroads served by the line were reluctant to consent to rate increases to pay for improvements.

Tacoma almost sold the Belt Line four times, either to the railroads or to the Port of Tacoma. The City kept the line and gradually improved motive power, trackage, and rolling stock, through the 1970s, but money was always tight. The 1980s saw a decline in the fortunes of the major railroads and the forest products business. Grain shipments dropped. The Milwaukee Road disappeared entirely. A 1984 audit of the line's operations found numerous operational problems and safety violations, but served to obtain the long-needed increase in switching rates that could finance improvements. In 1985, Tacoma Rail absorbed the switching operations of the Port of Tacoma, first on a trial basis, then permanently.

Today, Tacoma Rail runs on 38 miles of track and served 58 customers, the largest being the Port of Tacoma.

Click!

In 1996, City Light examined providing cable television and Internet access to consumers, services already supplied by private companies. Echoing back to the 1890s when customers were dissatisfied with rates and service from private utility companies, the cable franchisee in Tacoma was slow to deliver promised upgrades and expansion. City Light wanted to connect the power distribution system with fiber-optic data lines. These lines could also deliver television, Internet service, and business telecommunications to consumers cheaper and better than the franchisee. In November 1997, City Light connected the first cable customer. By the end of 2002, the Click! Network served more than 25,000 homes and businesses.

In June 1998, Tacoma Public Utilities renamed its units. City Light became Tacoma Power, Tacoma City Water became Tacoma Water, and the Belt Line Railway became Tacoma Rail. That year, Tacoma Rail extended service to Morton and to Chehalis for a total of 132 miles of track. Its largest customer was the Port of Tacoma.