



# MEMORANDUM

## LEGISLATIVE REFERENCE BUREAU

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**To:** Nancy Olson, CIO  
**From:** Amy E. Hefter, Legislative Fiscal Analyst-Lead, ext. 2290  
**Date:** August 2, 2013  
**Subject:** Government-Owned Networks in Wisconsin and Various Cities

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This memo is in response to your request for information relating to issues associated with the City of Milwaukee providing network services to the general public. This memo is divided into 5 sections: Wisconsin law, general issues related to government networks, examples of government owned networks in Wisconsin and various cities, and additional resources relating to Wisconsin broadband.

Although Wisconsin law discourages government-owned networks, it is still possible to establish a government-owned network. Please see section one entitled, Wisconsin Law, on page 2, for a detailed explanation of the statutory regulations.

Government-owned networks in 10 cities are identified in this memo. Four are from Wisconsin: Madison, Oconto Falls, Reedsburg, and Shawano. The remaining 6 are from the following cities: Bristol (VA), Chattanooga (TN), Lafayette (LA), San Leandro (CA), Seattle (WA), and Wilson (NC). Please see section 3, page 5 for a detailed description of each city's network. Table 1 on page 2 provides an overview of the government owned networks identified in this memo.

Six of the 10 cities were established public utilities providing residential and business electrical power, water or wastewater treatment prior to providing broadband service: Bristol, Chattanooga, Lafayette, Oconto Falls, Reedsburg, and Shawano.

Seven of the networks are publicly-owned: Bristol, Chattanooga, Lafayette, Oconto Falls, Reedsburg, Shawano, and Wilson. Ownership of 4 of the networks are through public-private partnership: Madison, San Leandro and Seattle.

Financing for 8 of the networks are through public funds, federal grants or a combination of the 2: Bristol, Chattanooga, Lafayette, Oconto Falls, Reedsburg, Shawano and Wilson. Shawano is in the process of selling its fiber optic network to a private provider, Granite Wireless because of lower than expected subscriber rates and higher than expected network maintenance costs. Seattle's network is privately-financed. Madison and San Leandro are financing their networks through a combination of private funds and grant funds.

Section 5 on page 13 of this memo, includes links to reports authored by the Wisconsin Public Service commission related to Wisconsin broadband access, development and utilization.

**Table 1. Overview of Government Owned Networks.**

City	Established	Financing	Ownership	Type of Network
Bristol (VA)	2003	Publicly-financed and additional financing via federal grant.	Publicly-owned.	Broadband network providing cable television, Internet and telephone to residents and businesses.
Chattanooga (TN)	1999	Publicly-financed and additional financing via federal grant.	Publicly-owned.	Smart Grid electric system network that includes telecommunications capabilities.
Lafayette (LA)	2005	Publicly-financed.	Publicly-owned.	FTTH/FTTB*
Madison (WI)	2013	Public and private funding sources.	Public-private consortium of government and non-government entities.	Middle-mile infrastructure.
Oconto Falls (WI)	2000	Publicly-financed.	Publicly-owned.	Telecommunications network, planning on providing broadband in the future.
Reedsburg (WI)	2000	Publicly-financed.	Publicly-owned.	FTTH/FTTB
San Leandro (CA)	2011	Private and federal grant funding.	Public-private partnership between the City, Lit San Leandro, and San Leandro Dark Fiber LLC.	FTTB
Seattle (WA)	2012	Private financing.	Public-private partnership between the City, the University of Washington and Gigabit Squared.	FTTH/FTTB
Shawano (WI)	2007	Publicly-financed.	Publicly-owned, in the process of selling the fiber optic network to a private provider, Granite Wireless.	Fiber-optic network providing cable television, Internet and telephone to residents and businesses.
Wilson (TN)	2006	Publicly-financed	Publicly-owned.	FTTH/FTTB

FTTH/FTTB: Fiber-To-The-Home/Fiber-To-The-Business.

## I. Wisconsin Law

Act 278 of the 2003 Wisconsin Legislature created procedural requirements related to the start-up of municipal cable television, broadband, telecommunications services and prohibits municipal subsidization of municipal cable television and telecommunications services. The Act includes a complex set of exceptions. The Act became effective on July 1, 2004.

The statute, s. 66.422, Wis. Stats., does not define “broadband service.” Interpretation of this term is left to municipalities and to the courts if a municipality’s interpretation is challenged. Broadband is often thought of as Internet access service, but can include high-speed data networks and other applications.

Section 66.0422, Wis. Stats., sets forth procedural requirements for municipal construction, ownership or operation of facilities. Specifically, a municipality may not enact an ordinance or adopt a resolution unless it prepares and makes available for public inspection a feasibility study of the proposed service and holds a public hearing on the proposed ordinance or resolution. All of the statute’s exceptions apply to the procedural requirements of the statute. For a detailed list of the requirements, please see section 4 on page 11.

In spite of Wisconsin legislation that discourages government-owned networks, there are still government-owned networks operating in Wisconsin. Most of these networks were operating prior to Act 278, and were grandfathered. Three of these government-owned networks: Oconto Falls, Reedsburg and Shawano, are discussed in detail on pages 8 and 10.

Recently, the City of Madison received grant funds to help create a public-private consortium called Metropolitan Fiber Network (MUFN). MUFN combined 15 Madison area groups to request a federal grant to improve network infrastructure among them. MUFN was awarded a \$5.1 million grant by the Department of Commerce’s National Telecommunications and Information Administration’s (NTIA) in the first round of the Broadband Technologies Opportunities Program (BTOP) as part of the American Recovery and Reinvestment Act of 2009. MUFN commits to providing wholesale access to network components (e.g. dark fiber) via a City of Madison agreement with Xicom d/b/a Mad City Broadband (MCB). MCB will negotiate business arrangements, capacity limits, reasonable financial terms, and technical conditions for interconnect with requesting parties. For more information on MUFN, please see page 7.

## **II. General Issues Regarding Government Owned Networks.**

Many government-owned networks fail because they lack sustainable business plans and long-term resources to invest in maintenance and upgrades as technology evolves. It is important to consider whether a government possesses the expertise to develop and operate a broadband network. Private providers can spread fixed costs across millions of subscribers whereas government providers can only spread fixed costs across thousands or tens of thousands of taxpayers. These taxpayers may also pay more in taxes as they subsidize the operation and maintenance of a government-owned network.

Lack of proper cost-benefit analysis has hampered government-owned networks. As noted in the article, “The Hidden Problems with Government-Owned Networks,” by Joseph P. Fuhr Jr., PhD., the financial models used by governments looking to deploy government-owned networks have fallen short in 4 areas:

1. The initial investment is generally higher than planned.
2. Penetration rates are systematically overestimated.
3. Revenues earned are lower than expected due to responses from competitors.
4. Operating costs are underestimated.

The size of a government-owned network will affect the cost to consumers. An overbuilt network can result in volume discounts on physical equipment and electronic content. Network

overbuild is counterintuitive in that it requires taxpayers to fund and subsidize a network that duplicates an existing private network.

Universal service may be expected with a government-owned network but in reality not assured. There is no guarantee that the network will be built out to reach all residents in a geographic area. As with a private provider, the cost to build infrastructure in certain areas may be cost-prohibitive due to terrain or population density. Yet residents who do not receive access to a government-owned broadband service are still subsidizing the service through higher property taxes.

Controlling network costs is critical, but a pricing policy that charges higher prices to customers who use excessive bandwidth, by downloading movies and other online activities, has been criticized by consumers when private firms have tried to implement use-based pricing policies.

Municipalities with government-owned networks may lose tax revenue from private network providers that might have entered those markets. A government can compete with a private firm because it does not face the same burden of taxes, cost of capital, rights of way, and liability insurance as a private firm. Private firms are subject to income, sales and real estate taxes as well as franchise and right-of-way fees. Since governments have control over some of the costs of private broadband companies, including franchise and right-of-way fees can deter private firms from market entry or put private firms at a competitive disadvantage.

Governments looking to deploy networks should expect competitive responses from private providers. Private providers tend to lobby state legislatures to enact legislation that burden public network providers with additional regulations. Private providers may also lure potential customers away resulting in lower than expected revenue for government-owned networks.

Public networks must publish their budgets and operate transparently, sharing strategic information with private competitors that are not required to provide comparable information.

Municipalities have benefited by local business expansion and new economic development because of new fiber networks. Another benefit of government-owned networks is keeping money in the community. Monthly fees paid to a government-owned network stay in the community to be spent on other government services.

A government-owned and -operated fiber optic network represents a potential revenue source. There are 3 potential revenue streams for a fiber network:

1. Dark or lit fiber services to nongovernment institutions. By providing reasonably-priced fiber to qualified nonprofit and community organizations and facilities, the network operator supports the needs of nongovernment institutions, which in turn support the citizens.
2. Middle-mile capacity. Providing middle-mile capacity to private sector operators is a more speculative revenue source but by making middle-mile capacity available where it does not exist a government network can reduce barriers for investment and entrepreneurial companies that want to build last-mile capacity.
3. E-Rate subsidies. Governments that choose to become E-Rate providers by serving schools and libraries can receive E-Rate subsidies as high as 90%, depending on the level of poverty in

a community. E-Rate subsidies can help make a network more self-sustaining and less dependent on local government or other external funding.

Many municipal governments have entered into the broadband market with unsuccessful results. Government-owned networks have fared poorly because governments have neither the resources nor the expertise necessary to provide consumers with reliable state-of-the-art broadband connections. When a government network fails to turn a profit, the alternatives for making up a financial shortfall include higher taxes, cross subsidization or a decrease in service quality. A government-owned network facing financial difficulty has 3 choices:

1. Selling at a loss.
2. Continuing using outdated technology.
3. Introducing new investment and better technology, which will increase its costs and lead to a bigger deficit with higher prices, higher taxes or a cross-subsidy from other products in the case of multiproduct producers.

### **III. Examples of Government-Owned Networks in Wisconsin and Various Cities**

#### **Bristol, VA | Bristol Valley Utility | <http://www.bvu-optinet.com/templates/default.php>**

Bristol Valley Utility (BVU) was established 68 years ago. BVU initially built a dark fiber network and data center to serve its city government. The municipality straddles the Virginia-Tennessee border. Virginia law prevents BVU from providing broadband directly to residents. Planning for the network began in 1999, when BVU intended to connect its own substations. Once the substations were linked, the city requested that government buildings also be connected to the network. Private businesses then began requesting to be connected to the network.

In 2003 BVU gained approval to provide broadband and voice services to residents on the Virginia side of the city. It added cable services later that year.

In 2010 BVU added 388 route miles to its current 10 Gigabit (Gbps) fiber network, building out a middle-mile network to 8 rural Appalachian counties, funded through a \$22.7 million BTOP grant. Seven of the 8 counties are classified as economically distressed. BVU provides telephone, cable television and broadband services to 65% of the city. The fiber powers free Wi-Fi at government buildings and the local mall. Many residents also use the network for Wi-Fi in their homes. All commercial buildings in Bristol can access the network.

BVU's Focus division works with municipalities across the United States providing consulting services to other cities considering broadband options.

Residential Broadband service starts at 64 kbps symmetrical for \$16.95 or 6 Mbps downstream for \$26, upward to one Gbps downstream to 50 mbps upstream for \$320. BVU's basic cable package includes 80 channels and is \$36.75 per month. The fee for basic phone service is \$14.

#### **Chattanooga, TN | EPB Fiber Optics | <https://epbfio.com/>**

EPB is a non-profit agency of the City of Chattanooga. EPB was established in 1935 to provide electric power to the people of the greater Chattanooga area. Today, EPB is still one of the largest publicly-owned providers of electric power in the country. EPB serves more than

169,000 residents in a 600 square-mile area that includes greater Chattanooga, as well as parts of surrounding counties (small parts of Bledsoe, Bradley, Marion, Rhea and Sequatchie) and areas of North Georgia (portions of Catoosa, Dade and Walker).

In 1999, EPB entered into the telecommunications business and began to assemble a staff and technical components to develop a fiber-optics-based network, providing high-speed data, local business telephone and other telecommunications services. EPB Fiber Optics is a separate entity from the public company's basic utility service. In 2000, EPB Telecom launched telecommunications service for local area businesses. In July 2002, EPB completed the public approval process, allowing it to provide Internet services. In September 2003, EPB Telecom launched an all-fiber high speed business Internet service, allowing EPB Telecom to compete with other telecommunications providers. This fiber network was up to 300 times faster than traditional business connections such as standard cable, DSL and T1.

The city approved its fiber initiative in 2007. In 2008, EPB secured a bond to begin construction of its Smart Grid, a next-generation electric system that includes communication capabilities in order to reduce outages, improve response time, reduce theft and help customers manage their electric power usage. The EPB Smart Grid is one of the first and largest Smart Grids in the United States. The Smart Grid's total cost was more than \$300 million. In November 2009, EPB was awarded a federal stimulus grant in the amount of \$111 million from the U.S. Department of Energy for expediting the build and implementation of the Smart Grid. Customers who only use EPB's electrical service are responsible for financing \$160 million via a loan to EBP Telecom, while EBP's Internet and cable television customers are responsible for the remainder. The first segment of its network launched in 2009.

In March 2011, EPB took the final step in completing its fiber optic network by deploying fiber optics to the outlying community of Haletown, TN. The final splice makes the communication network available to every home and business in EPB's 600-square-mile service area. The network also serves as the backbone for EPB's Smart Grid, which, when complete, will be the most automated system in the country.

In September 2012, in celebration of its 3rd anniversary and to thank the community for its support, EPB Fiber Optics upgraded residential customers' Internet speeds at no additional cost: from 30 Mbps to 50 Mbps, from 50 Mbps to 100 Mbps, and from 100 Mbps to 250 Mbps. EPB Fiber's 1 Gbps service is priced at \$299 per month for its highest speed tier and as low as \$58 for its lowest tier, 50/50 Mbps. The utility was ahead of its 3rd year financial projections, bringing in \$57.3 million in revenue for its fiber optic system and breaking even on its operating costs.

**Lafayette, LA | LUS Fiber | <http://www.lusfiber.com/>**

In 1998, the City of Lafayette built a 65-mile fiber loop to serve government offices. For \$3 million, the city found it could get 12 fiber strands, but by paying 20% more it could get 96 strands, 8 times the capacity. In 2002, LUS began using some of the surplus fiber capacity to provide wholesale service to hospitals, the public school system and universities. In 2004, the city proposed its 4th utility, fiber-to-the-home-and-business (FTTH) network. Frustrated by the lack of services from large broadband providers, in 2005, residents voted in favor of investing \$125 million to build a FTTH network, named LUS Fiber, stretching 800 route miles. LUS Fiber is a separate, but related, division of Lafayette Utilities System (LUS).

After the city made public its intention to build an FTTH network, BellSouth and Cox Communications the private telephone and cable providers, pushed for state legislation to make it impossible for governments to provide Internet services. After the Local Government Fair Competition Act became law, Lafayette was sued by the state cable association and BellSouth which wanted the city to hold a referendum on the network plan. Lafayette lost in district court and on appeal held a referendum. Yet the city was unable to run its own promotional campaign because the Local Government Fair Competition Act prohibited it. Later in 2005, Lafayette voters approved the utility's plan by a 2-to-1 margin.

In order to raise money for the project, the city had to borrow money through tax-exempt bonds. In 2007, Lafayette started issuing bonds. The phased build-out construction began in February of 2008. The service began a year later in February of 2009. In 2010 the phased construction was completed.

LUS Fiber network is large enough to provide wholesale broadband services. Business and residents can get speeds between 10 Mbps and 200 mbps up and down, starting at \$29 and \$200 per month, respectively.

#### **Madison, WI | Metropolitan Unified Fiber Network | <http://www.mufn.org/>**

The Metropolitan Unified Fiber Network (MUFN), a public-private consortium, provides low-cost, high-speed broadband fiber-optic service to anchor institutions, hospitals, schools, local and state government, libraries, and community organizations in Madison and Dane County. MUFN will construct 57.05 miles of new high-count, fiber-optic cable and 35.25 miles of new conduit to improve the middle-mile infrastructure in and around Madison.

In order to create a public-private consortium government and non-governmental partners entered into articles of association to form an unincorporated association under ch. 184, Wis. Stats., the City of Madison entered into the consortium with the following organizations: the Board of Regents of the University of Wisconsin Systems on behalf of UW-Madison Division of Information Technology, the School of Medicine and Public Health, and the University of Wisconsin - Extension on behalf of the Wisconsin Geological and Natural History Survey; the City of Middleton, the Dane County, DaneNet, Madison Area Technical College, Madison Metropolitan School District, Middleton-Cross Plains Area School District, Monona Grove School District, South Central Library System, Wisconsin State Laboratory of Hygiene, University of Wisconsin Hospitals and Clinics Association, University of Wisconsin Medical Foundation, Meriter Health Services, Inc., Mad City Broadband, and WINMetro, LLC. New members may join the consortium at a later date. The agreement was approved by the Madison Common Council on January 23, 2013.

In addition, Madison has entered into a subrecipient agreement with the University of Wisconsin-Madison for the MUFN grant. The primary benefit of being a subrecipient is that all the conduit, fiber and other equipment constructed with grant funds and located in the city right-of-way will be transferred to the City of Madison upon completion of the grant. This includes approximately 15 miles of conduit and 63 miles of fiber optic cable.

As a member of MUFN, Madison will be responsible for repair and maintenance of city-owned conduit and fiber that are included in the MUFN network. Madison will also charge a fiber lease fee to the MUFN Association and/or other individual members (this will require a separate agreement).



It is expected that MUFN will improve the middle-mile infrastructure in and around Madison by upgrading links between the main Internet backbone and last-mile connections that deliver Internet service to individual consumers. It is hoped that MUFN would significantly improve access to Internet resources for at-risk populations, enhance network connectivity for public safety agencies and provide more cost-effective network service for area public schools and libraries.

MUFN will enable participating groups to address their own technology needs and share their resources with others. Public safety agencies and distance education providers, for example, could use MUFN to tap video facilities. Ambulances could transmit patient vital signs to emergency rooms before they arrive. Clinics and hospitals could more easily access electronic health records. Students at Madison Area Technical College and UW-Madison could share resources.

### **Oconto Falls, WI | Oconto Falls Municipal Utilities | <http://www.ofmu.org/>**

In 1981, Oconto Falls, was the first Wisconsin municipality to own a cable television system and is one of a number of municipalities nationwide to own and operate a municipal cable television service. Operated by the CATV Commission, Oconto Falls, offers 12 broadcast basic channels, 56 channels in an expanded basic package, and 63 non-premium channels in a basic digital package. In addition, the Oconto Falls cable television system also offers 8 premium channels.

On September 20, 2000, Oconto Falls Municipal Utilities received a Wisconsin Public Service Commission Competitive Local Exchange Carrier (CLEC) certificate to offer telecommunications services to the local community. At present, the commission is in the process of building infrastructure facilities to provide a conduit for future broadband services.

### **Reedsburg, WI | Reedsburg Utility Commission | <http://reedsburgutility.com/>**

The Reedsburg Utility Commission (RUC) built and operates the network. In 1998, it entered the telecommunications business when it constructed a ring to tie 5 electrical substations together and provide Internet access for its high school, middle school and school administration buildings. As the ring was under construction, local companies asked RUC if it could provide them with Internet access. RUC proceeded to connect these businesses.

In 2000, RUC began planning to provide FTTH-based Internet access, telephony and television to all citizens within the city limits. The plan was to run a fiber drop to every house. As fiber was built out, empty network interface device (NID) boxes were placed on each home, NID electronics were installed when the service was turned on. Construction began in early 2003. Preceding construction there was a mail campaign followed by a door-to-door campaign to get permission agreements signed to construct the fiber on private lands. About 10 home owners refused to give permission. The fiber built out was complete by 2006.

A local bank loaned the initial \$5 million in bond anticipation notes for planning and construction. RUC also issued an additional \$8.5 million in bond anticipation notes to complete the project. The bonds must be converted to asset-backed revenue bonds within 5 years. The network turned cash flow-positive in 2008. RUC spends about \$500,000, per year for network expansion.



Reedsburg Utility is extending its existing municipal FTTH network to the surrounding rural areas of Sauk County. When completed, fiber will reach the northern Sauk County border, extending to the northeast along Interstate 90/94 and to the southwest reaching Loganville, Lime Ridge and Hill Point. More than 6,000 people will benefit from this fiber project, along with 144 businesses and 12 community institutions, including schools and libraries. This expansion is being partly funded through a \$5.2 million Broadband Technology Opportunities Program stimulus grant.

**San Leandro, CA | Lit San Leandro Fiber Optic Loop | <http://litsanleandro.com/>**

The City of San Leandro took a public-private hybrid approach to build its fiber network. Working with a local company, OSISoft, to round out coverage of the cost, the city built out an 18-mile network that serves more than 950 businesses with speeds of 10 gigabits per second.

Four areas of the city were identified in an assessment report as priorities for broadband improvements due to substandard service levels or future plans for development. These areas included downtown San Leandro, the city's shoreline, the 880 Industrial Corridor, and the Davis/Doolittle/Adams Tract area (a planned mixed-use development).

Lit San Leandro was approved by the City Council in October 2011, allowing San Leandro Dark Fiber to install a fiber optic network around the city using existing conduit. Lit San Leandro and San Leandro Dark Fiber LLC comprise the private partnership that works with the City of San Leandro to create the Fiber Loop. San Leandro Dark Fiber owns the fiber optic cable that runs through the City's underground conduit. Lit San Leandro owns and operates the switch and routing facilities that bring lightning-fast Internet service to the community.

An additional \$2.1 million federal grant funded the last 7.5 miles of build-out. Lit San Leandro pays for all of the fiber and is giving 10% of the strands to the city for its use. The first section went live in March 2012, with the majority of the new network becoming operational in August of the same year.

**Seattle, WA | Gigabit Seattle | <http://gigabitseattle.com/>**

Seattle spent nearly a decade studying ways to bring ultrafast broadband to everyone in the city, using the city-owned network as a foundation. But that plan was abandoned in 2012 by Mayor Mike McGinn. Instead, he decided to parcel out portions of the city network to private companies, an approach that basically ends any chance of Seattle developing a citywide, municipal broadband network.

The City of Seattle has reached an agreement with broadband developer Gigabit Squared, in December of 2012, to develop and operate an ultra high-speed fiber-to-the-home/fiber-to-the-business broadband network. The plan will begin with a demonstration fiber project in 14 Seattle neighborhoods and includes wireless methods to deploy services more quickly to other areas in the city. The initiative, leveraging the City of Seattle's excess fiber capacity, the expertise of Gigabit Squared, and the community leadership of The University of Washington, aims to stimulate business opportunities, spur advancements in health care, education, and public safety, and enhance quality of life for the residents and businesses of Seattle.

The City, the University and Gigabit Squared have signed a Memorandum of Understanding and a Letter of Intent that allows Gigabit Squared to begin raising the capital needed to conduct engineering work and to build out the demonstration fiber network. The project is the second city

project announced by Gigabit Squared as part of its multi-million dollar Gigabit Neighborhood Gateway Program. Gigabit Squared will collaborate with the City of Seattle and the University of Washington to initiate a process for sharing information and soliciting input on the project from members of the affected communities.

The network, called Gigabit Seattle ([www.gigabitseattle.com](http://www.gigabitseattle.com)) includes 3 pieces: Fiber directly to the home and business in 14 demonstration neighborhoods, dedicated gigabit broadband wireless connections to multifamily housing and offices across Seattle, and next-generation mobile wireless internet. The fiber network, the gigabit dedicated wireless connections, and wireless cloud services neighborhoods will together provide broadband wired and wireless network and Internet services, giving Seattle customers new choices.

This is the first demonstration project of Gigabit Squared's Gigabit Neighborhood Gateway Program (GNGP), which will bring other projects like this to promote gigabit network innovation in 6 selected university communities across the country. The \$200 million broadband program was developed in partnership with The University Community Next Generation Innovation Project (Gig.U).

Gigabit announced 3 tiers of service in June of 2013:

1. Signature gigabit service with download speeds up to 1,000 megabits (or 1 gigabit) per second will cost \$80 per month. Installation costs \$350, but the charge is waived for customers signing a one-year contract.
2. Gigabit will offer 100 Mbps service for \$45 per month, plus the \$350 installation charge that's waived with a year-long contract.
3. The lowest tier of service offers download speeds up to 5 Mbps and uploads up to 1 Mbps. That's far slower than modern cellphone networks, but it's fast enough for email, browsing and other basic Web usage.

The company also is offering a barebones service with no monthly charge for 60 months, but the \$350 installation fee applies. Over 5 years the installation fee works out to \$5.83 per month. Gigabit hasn't released its prices for business customers or multifamily buildings where it will offer wireless service, instead of wired connections.

**Shawano, WI | Shawano Municipal Utilities | <http://www.shawano.tv/index.html>**

In 1996, Shawano Municipal Utilities (SMU) installed its own fiber-optic network within the city to monitor its electrical, sewer and water facilities. Shortly after, the network was expanded to provide communication and Internet services to other city departments and the Shawano School District. In 2006, voters approved a citywide referendum in order provide competitive telecommunications (cable television, Internet and telephone) services to city residences and businesses.

In 2007, \$4 million in borrowing was authorized to allow SMU to begin expanding its fiber-optic network throughout the City of Shawano. By March 2008, SMU began offering limited telecommunications services to residential customers as it continued to build the backbone of and infrastructure necessary to provide service to the entire city. By the end of 2009, services were available to nearly 85% of Shawano. The SMU network was completed in 2011. SMU has continued to maintain the system but has stopped making major investments in it.

SMU is in the process of selling the retail fiber optic system including Internet and cable services but not telephone service to Bertram Communication, doing business as Granite Wireless. The utility's intention was to have customer revenue pay for the network and the service, including repayment of the \$4 million in borrowing. However, the telecom business never generated sufficient revenue to support itself and pay off the principal on its debt.

The debt was reissued in May 2012, by the Shawano Common Council as general obligation bonds, a 10-year and a 20-year bond that were added to the tax levy beginning in 2013. The city's total debt service went up in 2013 by \$494,165. Debt service on the retail fiber network accounts for \$283,000 of that amount.

#### **Wilson, NC | Greenlight Community Broadband | <http://www.greenlightnc.com/>**

In the 2000s, the City of Wilson first approached Time Warner Inc. and Embarq with a request for faster internet for residents and local businesses. The cable companies refused, unwilling to cut into their profit margins. So the city took it upon itself, and in the end found out it could sell the service to citizens at a fraction of the cost. Wilson began working with existing laws that enable municipalities to provide cable services to residents. In 2006, Wilson's city council unanimously approved deployment of an FTTH network, funded by \$33 million in loans. The network, Greenlight Community Broadband, serves 6,000 of the city's 50,000 residents, and connects all the public schools in the county with speeds between 100 Mbps and 1 Gbps.

In 2011, North Carolina state law was changed to discourage municipal broadband, although Wilson is exempted from much of the state's anti-municipal broadband laws, Wilson may not expand its broadband network outside of its current boundaries because of this law.

Pricing for Wilson's FTTH services: residential packages start at \$100 per month, Internet only service starts at \$40 for 10 Mbps with additional speed tiers up to 100 Mbps for \$155.

#### **IV. Section 66.0422, Wis. Stats.**

As provided in s. 66.0422(2), Wis. Stats., no local government may enact an ordinance or adopt a resolution authorizing the local government to construct, own, or operate any facility for providing video service, telecommunications service, or broadband service, directly or indirectly, to the public, unless certain criteria are satisfied:

- a. The local government holds a public hearing on the proposed ordinance or resolution.
- b. Notice of the public hearing is given by publication of a class 3 notice under ch. 985, Wis. Stats., in the area affected by the proposed ordinance or resolution.
- c. No less than 30 days before the public hearing, the local government prepares and makes available for public inspection a report estimating the total costs of, and revenues derived from, constructing, owning, or operating the facility and including a cost-benefit analysis of the facility for a period of at least 3 years. The costs that are subject to this paragraph include personnel costs and costs of acquiring, installing, maintaining, repairing, or operating any plant or equipment, and include an appropriate allocated portion of costs of personnel, plant, or equipment that are used to provide jointly both telecommunications services and other services.

If a municipality chooses not to hold a public hearing and provide a report of the cost involved in providing broadband services directly to the public, then the municipality must satisfy the following regulations, as provided in ss. 66.0422(3), (3d), (3m) and (3n), Wis. Stats.:

S. 66.0422(3), Wis. Stats.

S. 66.0422(2), Wis. Stats., does not apply to a local government if:

- On November 1, 2003, the public service commission has determined that the local government is an alternative telecommunications utility under s. 196.203, Wis. Stats.
- A majority of the governing board of the local government votes to submit the question of supporting the operation of the facility for providing video service, telecommunications service, or Internet access service, directly or indirectly to the public, by the local government to the electors in an advisory referendum and a majority of the voters in the local government voting at the advisory referendum vote to support operation of such a facility by the local government.

S. 66.0422(3d), Wis. Stats.

S. 66.0422(3d), Wis. Stats., does not apply to a facility for providing broadband service to an area within the boundaries of a local government if any of the following are satisfied:

- a. The local government asks, in writing, each person that provides broadband service within the boundaries of the local government whether the person currently provides broadband service to the area or intends to provide broadband service within 9 months to the area and within 60 days after receiving the written request no person responds in writing to the local government that the person currently provides broadband service to the area or intends to provide broadband service to the area within 9 months.
- b. The local government determines that a person who responded to a written request that the person currently provides broadband service to the area did not actually provide broadband service to the area and no other person responds to the local government.
- c. The local government determines that a person who responded to a written request that the person intended to provide broadband service to the area within 9 months did not actually provide broadband service to the area within 9 months and no other person makes the response to the local government.

S. 66.0422(3m) Wis. Stats.

S. 66.0422(3m), Wis. Stats., does not apply to a facility for providing broadband service if all of the following apply:

- a. The municipality offers use of the facility on a nondiscriminatory basis to persons who provide broadband service to end users of the service.
- b. The municipality itself does not use the facility to provide broadband service to end users.

c. The municipality determines that, at the time that the municipality authorizes the construction, ownership, or operation of the facility, whichever occurs first, the facility does not compete with more than one provider of broadband service.

S. 66.0422(3n) Wis. Stats.

S. 66.0422(3n), Wis. Stats., does not apply to a local government that, on March 1, 2004, was providing video service to the public.

**V. Additional Resources Relating to Wisconsin Broadband**

*Wisconsin's Playbook for Broadband Progress*, Public Service Commission of Wisconsin, March 20, 2013, [www.link.wisconsin.gov/lwi/docs/WI\\_Playbook.pdf](http://www.link.wisconsin.gov/lwi/docs/WI_Playbook.pdf)

The *Playbook* builds on the work accomplished over the past 2 years at the regional level to create a set of realistic action steps that can improve broadband availability and utilization throughout Wisconsin. The *Playbook* recognizes the extensive investments already made by Wisconsin's broadband provider community. Incumbent local exchange carriers, competitive local exchange carriers and, increasingly, many wireless (mobile and fixed) providers have invested and are investing millions of dollars in Wisconsin to make broadband available to a majority of the state.

The purpose of this *Playbook* is to highlight specific replicable initiatives and actions that (1) are realistic and possible within available resources; (2) have enough consensus to be successfully implemented; and (3) are consistent with the needs of Wisconsin. The audience for the state *Playbook* is Wisconsin leadership, whose actions or coordination is important to advancing state broadband initiatives. This includes legislators, the Governor's office, educators, private providers, industry, business leaders, state agencies, economic development and regional planning organizations, municipal and county officials, trade associations, consumer interests and others. The document also provides actionable ideas that can be implemented successfully in Wisconsin to improve broadband availability, adoption or application. Additional resources related to the *Playbook*:

- *Report of Interview Findings: Initial Broadband Development and Utilization Assessment for Wisconsin*, Link Wisconsin, June 23, 2010  
<http://www.link.wisconsin.gov/lwi/docs/Interview%20Findings.pdf>
- *Region 9 Broadband Investment Plan*, Final-February 27, 2012  
<http://wisconsindashboard.org/book/export/html/350> (Region 9 includes Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha counties.)