Staff Brief

Study Committee on Rural Broadband

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INTRODUCTION

The Joint Legislative Council established the Study Committee on Rural Broadband to review the Wisconsin Broadband Expansion Grant Program and the extent to which it has encouraged construction of broadband infrastructure in areas of the state with few broadband service providers. The Joint Legislative Council has directed the study committee to:

- Discuss the criteria used to evaluate applications and award grants.
- Consider alternatives for determining eligibility and prioritizing proposed projects.
- Consider alternative methods for encouraging construction of broadband infrastructure.
- Identify options to recommend.

This Staff Brief is organized as follows:

- ***Part I*** describes broadband quality and availability in rural areas.
- ***Part II*** describes the Wisconsin Broadband Expansion Grant Program.
- ***Part III*** describes funding for the Wisconsin Broadband Expansion Grant Program.
- ***Part IV*** describes federal funding for rural broadband projects.

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PART I – BROADBAND SERVICE QUALITY AND AVAILABILITY IN RURAL AREAS

Broadband service generally refers to high-speed transmission of electronic information between computers or other electronic devices that are connected through a network or the Internet. The speed at which information is transmitted is central to the concept of broadband service because it determines the extent to which various activities can be conducted over a connection. The availability of broadband service in a geographic area depends on the telecommunications infrastructure in that area.

BROADBAND SERVICE QUALITY

Broadband transmission speed is measured based on the quantity of electronic information that can be transmitted in one second. A service can be measured in terms of the rate at which electronic information can be received, "download speed," and the rate at which electronic information can be sent, "upload speed." Electronic information is made up of single digits, which are referred to as "bits." Transmission speed is typically expressed in terms of thousands of bits, kilobits, per second (Kbps); millions of bits, megabits, per second (Mbps); and billions of bits, gigabits, per second (Gbps).

The minimum transmission speed needed by a consumer depends on the activities that the consumer intends to conduct. The Federal Communications Commission (FCC) estimates the minimum transmission speed needed to conduct certain activities with an adequate level of performance. As shown in Table 1, the FCC's recommendations vary based on the amount of information involved in an activity. The more activities that are conducted at one time, over a single connection, the greater the download speed that will be needed for that connection.

Table 1: FCC Minimum Download Speed Recommendations[1]

Activity	Minimum Download Speed (Mbps)
Email	0.5
Navigating government websites	0.5
Viewing interactive webpages and short videos	1
Basic video conferencing	1
Streaming feature movies	1.5
Telelearning	4

The FCC establishes a benchmark combination of download and upload speeds that it considers necessary to support certain telecommunications functions listed in federal law. Federal law requires the FCC to annually evaluate whether advanced telecommunications capability is being

[1] FCC Broadband Speed Guide (http://www.fcc.gov/guides/broadband-speed-guide), last accessed July 1, 2016.

deployed to all Americans in a reasonable and timely fashion.[2] For a service to be considered advanced, it must enable users "to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology."[3] The FCC establishes its benchmark speeds based on its evaluation of the speed needed to enable users to conduct these activities.

The FCC has increased its benchmark as technical advances have increased the speeds needed to conduct the activities. In 1999, the FCC established a benchmark of 200 Kbps for both download and upload speed.[4] In 2010, the FCC increased its benchmark to 4 Mbps for download and 1 Mbps for upload.[5] In 2015, it increased its benchmark to the current levels of 25 Mbps for download and 3 Mbps for upload.[6]

Broadband Technology

Broadband service can be delivered through several different technologies that transmit electronic information either over wires or wirelessly through the air. The most commonly used wireline technologies are: (a) digital subscriber line (DSL), which uses copper telephone lines; (b) coaxial cable typically owned by cable television companies; and (c) fiber optic technology. The most commonly used wireless technologies are: (a) fixed wireless, in which electronic information is transmitted to transceiver equipment that is fixed at the consumer's premises; (b) mobile wireless, in which information is transmitted over mobile telephone infrastructure; and (c) satellite broadband service.

Each technology has advantages and limitations that determine whether the technology will be appropriate for a given area. For example, although fiber optic technology provides the highest transmission speed capacity, its deployment often requires construction of new physical connections to each consumer premises. In contrast, DSL can often be used to provide service over existing telephone lines, and fixed wireless can be used to provide service without the construction of new physical connections.

Additional information on broadband technologies and their relative advantages and disadvantages is presented in the Broadband Reference Guide, developed by the Wisconsin Public Service Commission (PSC) and University of Wisconsin (UW)-Extension, available at http://broadband.uwex.edu/wp-content/uploads/2014/07/007.010.2014-Broadband-Reference-Guide.pdf.

BROADBAND SERVICE AVAILABILITY IN RURAL AREAS

The availability of broadband service in a given location is typically evaluated based on the number of providers from whom service may be purchased, the speed of the service, its cost, and the technology used to provide the service. Although measuring broadband availability poses challenges, the federal government and the PSC have collected availability information from

[2] 47 U.S.C. s. 1302 (b)
[3] 47 U.S.C. s. 1302 (d) (1)
[4] FCC *1999 First Broadband Deployment Report.*
[5] FCC *Sixth Broadband Deployment Report.*
[6] FCC *2016 Broadband Progress Report.*

providers since 2009. Evaluating the information collected provides a comparison of availability at the state and national levels.

Measuring Broadband Availability

Measuring the availability of broadband service poses several challenges. Even within a municipality, the availability of service often varies based on the proximity of a given residence or business to telecommunications infrastructure. The proximity of a consumer to a provider's infrastructure may also cause the actual speed of service provided to differ from the speed advertised. In addition, the price and speed of service is subject to change, as providers construct new infrastructure and evaluate the profitability of different service offerings.

In 2009, as part of the American Recovery and Reinvestment Act, the federal government initiated an effort to develop a national map of broadband availability. The federal government provided grant funding to state agencies and their designees, which collected the information needed to develop the map.

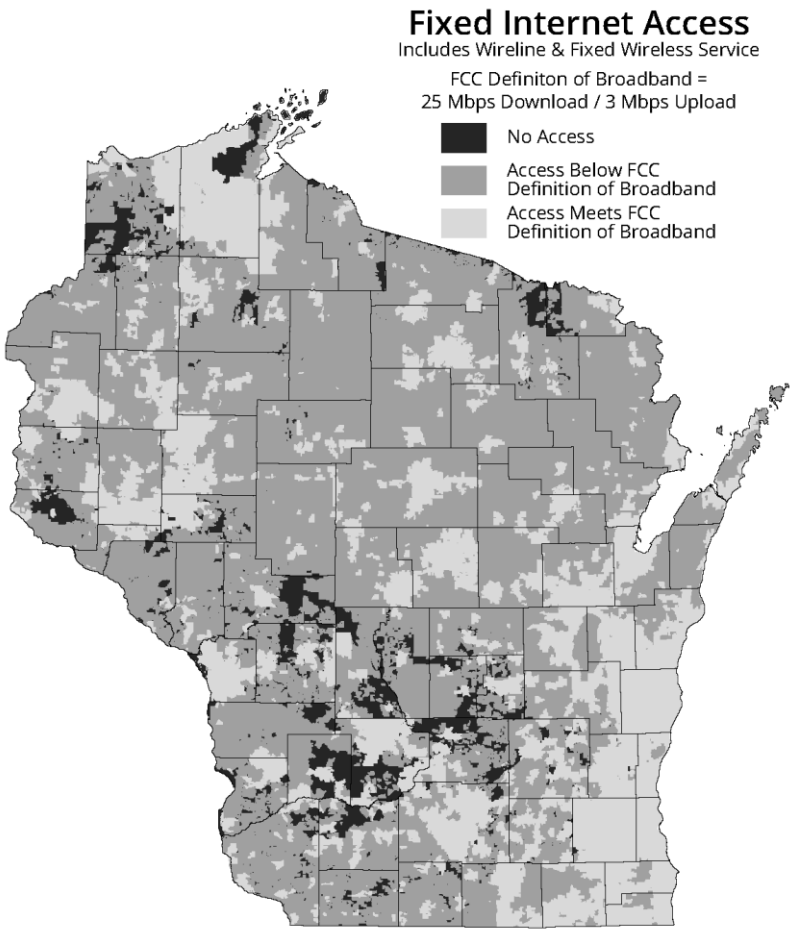
From 2009 through 2014, the PSC received a total of approximately $4.5 million in federal grant funding that was primarily used to collect broadband availability information, submit it to the federal government, and to construct and maintain a Wisconsin-specific broadband mapping system. In accordance with the grant terms, the PSC provided an additional $1.1 million in matching funds for the efforts.[7] Since the grant funding expired in October 2014, the PSC has continued to conduct mapping activities using state funds.

The PSC collects broadband availability information in accordance with federal requirements. Every six months, the PSC requests information from providers on the service they provide in each of Wisconsin's approximately 250,000 census blocks. The providers report the advertised speed and cost of the service, as well as whether the service is provided through wireless, wireline, or mobile technology.

[7] PSC s. 16.515/16.505 (2) Request to the Joint Committee on Finance, April 8, 2014, accessed at: https://docs.legis.wisconsin.gov/misc/lfb/jfc/100_section_16_505_16_515_passive_review_requests/2014_04_25_public_service_commission.pdf.

The map shown below presents information on the status of broadband availability as of June 2015, which is the most recent period for which information is available. The map identifies areas of the state that have: (a) no fixed wireless or wireline service available at any speed; (b) fixed wireless or wireline service, or both, at speeds that are slower than the FCC benchmark of 25 Mbps download and 3 Mbps upload; or (c) fixed wireless or wireline service, or both, at speeds that meet or exceed the FCC benchmark. Not all consumers within an area may have access to service at the speed listed because areas are identified based on whether service is available at any location within each census block.

Figure 1 Broadband Service Availability[8]



[8] Provided by the PSC. The PSC notes that "No guarantee of said coverage can be fully made. The methodology of collecting coverage data, local anomalies, and coverage changes may result in the understatement or overstatement of internet coverage. No independent verification of access has been made by the State Broadband Office."

To measure consumers' views on broadband availability in Wisconsin, the PSC conducted a statewide survey in 2013 of 10,999 residential and 1,572 business consumers. As shown in the table below, the majority of business consumers who responded to the survey reported having an adequate connection; however, the majority of residential consumers reported having either an inadequate connection or no connection.

Table 2: 2013 PSC Survey of Broadband Consumers in Wisconsin[9]

Internet Connection	Residential	Business	Total
Adequate Connection	45.2 %	53.4 %	46.2 %
Inadequate Connection	41.3	41.3	41.3
No Connection	13.3	2.2	11.9
Other	0.2	3.1	0.6

Evaluating Broadband Availability

Using the information collected by states as part of the national broadband mapping initiative, the federal government evaluates how certain measurements of broadband availability compare among the states. For example, the federal government compares the percentage of a state's population that has access to service at certain download and upload speeds, and it reviews differences that exist between rural and urban areas. It also compares the number of providers from which the majority of consumers in a state can obtain service.

Evaluating the results of these comparisons requires interpreting the measurements in light of the needs of different consumers. For example, residential consumers with less sophisticated telecommunications needs may be better served when a large percentage of the population has access to service at any speed. Whereas, business consumers' needs may only be met when service is available at very high speeds.

[9] Provided by the PSC.

The most recent comparative information available from the federal government relates to availability as of June 2014. As shown in the table below, 98.9% of Wisconsin's urban residents and 56.4% of Wisconsin's rural residents have access to broadband service at the FCC benchmark download speed of 25 Mbps.

Table 3: State Population With Access to Download Speed of 25 Mbps or Greater[10]

	Rural	Urban
Minnesota	66.1 %	99.2 %
Michigan	66.0	97.0
Illinois	64.1	99.0
Ohio	61.2	95.4
Indiana	57.6	97.4
Wisconsin	**56.4**	**98.9**
Nationwide	54.6	94.0
Iowa	48.3 %	99.1 %

According to the federal government's most recent information, nearly all urban and rural residents of Wisconsin and the other Midwestern states had access to at least one form of wireless service, such as broadband provided via mobile telephone, from two or more providers. However, as shown in the table below, while 94.5% of Wisconsin's urban residents had access to wireline service from two or more providers, only 44.5% of Wisconsin's rural residents did.

Table 4: State Population With Access to Wireline Service From Two or More Providers[11]

	Rural	Urban
Indiana	65.1 %	98.3 %
Michigan	62.9	98.6
Ohio	60.3	98.1
Nationwide	54.4	95.9
Illinois	45.7	98.1
Minnesota	45.3	98.6
Iowa	44.6	97.5
Wisconsin	**44.5 %**	**94.5 %**

[10] National Telecommunications and Information Administration Broadband Statistics Report: Availability in Urban vs. Rural Areas (http://www.broadbandmap.gov/analyze). An area is designated as "rural" if its population density was less than 50,000 people or was outside a cluster of developed areas with between 2,500 and 50,000 people. U.S. Census Bur., Selected Appendixes: 2010, Population and Housing Unit Counts, App. A (June 2012).

[11] National Telecommunications and Information Administration Broadband Statistics Report: Broadband Availability in Urban vs. Rural Areas (http://www.broadbandmap.gov/analyze), last accessed on July 12, 2016. An area is designated as "rural" if its population density was less than 50,000 people or was outside a cluster of developed areas with between 2,500 and 50,000 people. U.S. Census Bur., Selected Appendixes: 2010, Population and Housing Unit Counts, App. A (June 2012).

PART II – THE WISCONSIN BROADBAND EXPANSION GRANT PROGRAM

The Broadband Expansion Grant Program was created by 2013 Act 20 (the 2013-15 Biennial Budget Act) to provide funding for the construction of broadband infrastructure in underserved areas of the state. The PSC administers the program through the State Broadband Office, which consists of three full-time staff who also work on other broadband initiatives, such as the mapping initiative. The statutes require the PSC to: (a) designate areas of Wisconsin as underserved; (b) prescribe the information that must be included in a grant application; (c) evaluate the eligibility and priority of applications; and (d) award grants. [s. 196.504 (2), Stats.]

DESIGNATING AREAS OF WISCONSIN AS UNDERSERVED

The statutes require the PSC to award grants only for the construction of broadband infrastructure in areas that the PSC has designated as underserved. [s. 196.504 (2) (a), Stats.] "Underserved" is defined to mean an area that is served by fewer than two broadband service providers. [s. 196.504 (1) (b), Stats.] However, the statutes do not prescribe the transmission speed or the technology that is required for a service to qualify as broadband service.

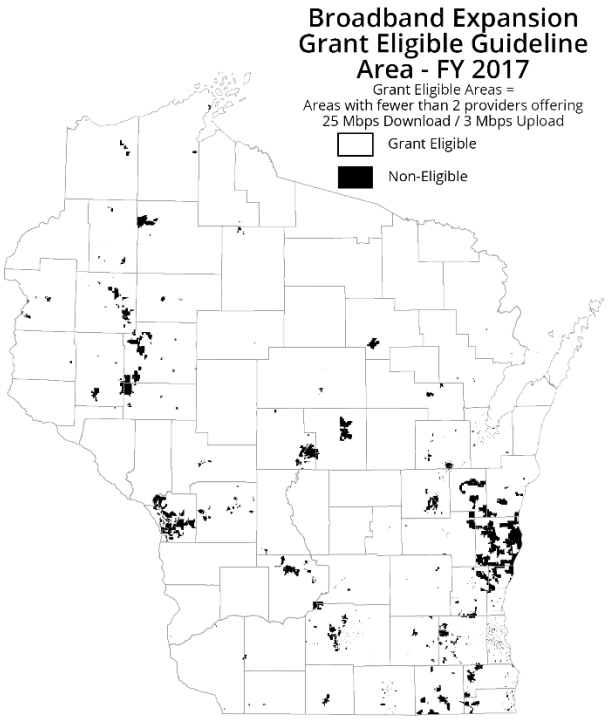
By specifying the transmission speed and technology required to qualify as broadband service, the PSC sets the criteria for determining whether an area is underserved, and thus eligible for grant funding. Since the program began, the PSC has used different definitions of broadband service. PSC policy currently requires a minimum transmission speed of 25 Mbps for download and 3 Mbps for upload, which corresponds with FCC's benchmark speeds. PSC policy currently excludes Internet service provided via satellite or mobile telephone from the definition of "broadband."[12]

The PSC designates areas as underserved by determining whether an area delimited by a census block boundary is served by fewer than two broadband service providers. The PSC also permits an area to be designated as underserved if an application demonstrates that a proposed service area is served by fewer than two broadband service providers, notwithstanding the fact that the proposed service area lies within a census block that is served by two or more broadband service providers.[13] As shown in the map below, the PSC has designated most of the state as underserved for fiscal year (FY) 2016-17.

[12] PSC Broadband Expansion Grant Application for FY 2017, accessed at: http://psc.wi.gov/utilityInfo/tele/broadband/grants/documents/bbApplicationInstructions.pdf.

[13] PSC Broadband Expansion Grant Application for FY 2017.

Figure 2: Areas Designated as Underserved for FY 2016-17[14]



ESTABLISHING APPLICATION REQUIREMENTS

The statutes require that an application identify the area of the state that will be affected by the proposed project and explain how the proposed project will increase broadband access. [s. 196.504 (2) (b), Stats.] To implement this statutory requirement, the PSC's policies require an applicant to describe: (a) the potential and expected number of households to be served; (b) the potential and expected number of businesses to be served; (c) the expected number of tourists or other transient population to be served; and (d) estimates of the download and upload speed to be provided.[15] The PSC's policies also require an application to include a schedule for the project's completion, a description of the technology to be used, and an itemized statement of construction and other project costs with a description of the funding sources to be used.[16]

[14] Provided by the PSC.
[15] PSC Broadband Expansion Grant Application for FY 2017.
[16] PSC Broadband Expansion Grant Application for FY 2017.

EVALUATING ELIGIBILITY AND PRIORITIZING APPLICATIONS

The statutes prescribe certain eligibility requirements and authorize the PSC to establish additional requirements. In addition, the statutes prescribe criteria for prioritizing eligible applications and authorize the PSC to establish additional criteria.

Eligibility Requirements

To be eligible for the program, the statutes require that an applicant must be either an organization operated for profit or not-for-profit, including a cooperative; a telecommunications utility; or a city, village, town, or county that submits an application in partnership with a telecommunications utility or a for profit or not-for-profit organization. [s. 196.504 (1) (a), Stats.]

The PSC is statutorily prohibited from awarding a grant that would have the effect of subsidizing the expenses of a telecommunications service provider or the monthly bills of customers. [s. 196.504 (2) (c), Stats.]

Priority Criteria

In selecting among eligible projects, the statutes require the PSC to give priority to projects that:

- Include matching funds.
- Involve public-private partnerships.
- Affect areas with no broadband service providers.
- Are "scalable," which means that the broadband network has the ability to maintain the quality of its services while increasing the number of users, the geographic area covered by the network, or the number of services provided.
- Promote economic development.
- Affect a large geographic area.
- Affect a large number of underserved individuals or communities.

[s. 196.504 (2) (c), Stats.]

Because the statutes do not prescribe the relative weight to be given to each of the priorities listed above, the PSC has discretion in implementing them. To prioritize projects that promote economic development, the PSC gives priority to applications that are accompanied by one or more letters of support from businesses indicating imminent plans to build or expand the size of their operations due to broadband connectivity. The PSC gives lesser priority to applications that only

assert that improved broadband connectivity in the area *could* lead to additional business development.[17]

In addition to the statutory priorities listed above, PSC policy provides that priority will be given to applications involving fast download and upload speeds and applications proposing to serve a large number of consumers. The PSC also considers the availability of additional sources of funding when prioritizing applications and awarding grants.

AWARDING GRANTS

The PSC evaluates applications using a three-step process. First, the PSC makes all applications publicly available and provides a public comment period during which interested parties may submit to the PSC written comments regarding the applications. Next, each application is reviewed by a screening panel that submits non-binding recommendations to the commissioners regarding which applications meet the eligibility criteria and which applications should be given the highest priority. Third, the PSC commissioners review the panel's recommendations, application materials, and public comments and make final award determinations.

From FY 2013-14 through FY 2015-16, the PSC was authorized to award a total of $2.5 million in grants. During this period, the PSC awarded a total of approximately $2.4 million to 25 applicants for projects affecting consumers in 19 counties.[18] The projects involved a variety of technologies, including DSL, cable internet, fixed wireless, and fiber optic technology.

First Grant Period: FY 2013-14

In FY 2013-14, the PSC was authorized to award a total of $500,000 in grants. The PSC received 24 grant applications that requested a total of approximately $2.6 million. The applications were reviewed by a screening panel consisting of three PSC staff with experience in telecommunications services. The panel determined that 22 of the grant applications were eligible but was unable to determine whether two applications submitted by public entities met the requirement to have a private partner.

The PSC awarded grants to seven applicants, four of which were public-private partnerships and three of which were private entities. The PSC awarded the recipients approximately $500,000 for projects affecting consumers in Eau Claire, Grant, Iowa, Vilas and Wood Counties. All of the grant recipients proposed projects that included matching funds. Three of the projects involved fixed wireless, three involved fiber optic technology and one involved DSL.

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[17] PSC Broadband Expansion Grant Application Frequently Asked Questions, accessed at: http://psc.wi.gov/utilityInfo/tele/broadband/grants/documents/FinalFAQ.pdf.

[18] Applications for FY 2016-17 were due by June 16, 2016. The PSC has not yet made award determinations for this fiscal year.

Second Grant Period: FY 2014-15

In FY 2014-15, the PSC was authorized to award a total of $500,000 in grants. The PSC received 13 grant applications requesting a total of approximately $1.9 million. The applications were reviewed by a screening panel consisting of two PSC staff and an employee of the UW-Extension Broadband and E-Commerce Education Center. The panel determined that 12 applications were eligible but was unable to determine whether one application submitted by a public entity met the requirement to have a private partner.

The PSC awarded grants to seven applicants, six of which were public-private partnerships and one of which was a private entity. The PSC awarded the recipients approximately $450,000 for projects affecting consumers in Bayfield, Crawford, Forest, Marathon, Oneida, St. Croix, and Waupaca Counties. All of the grant recipients proposed projects that included matching funds. Two of the projects involved fixed wireless, two involved fiber optic technology, two involved DSL, and one involved cable.

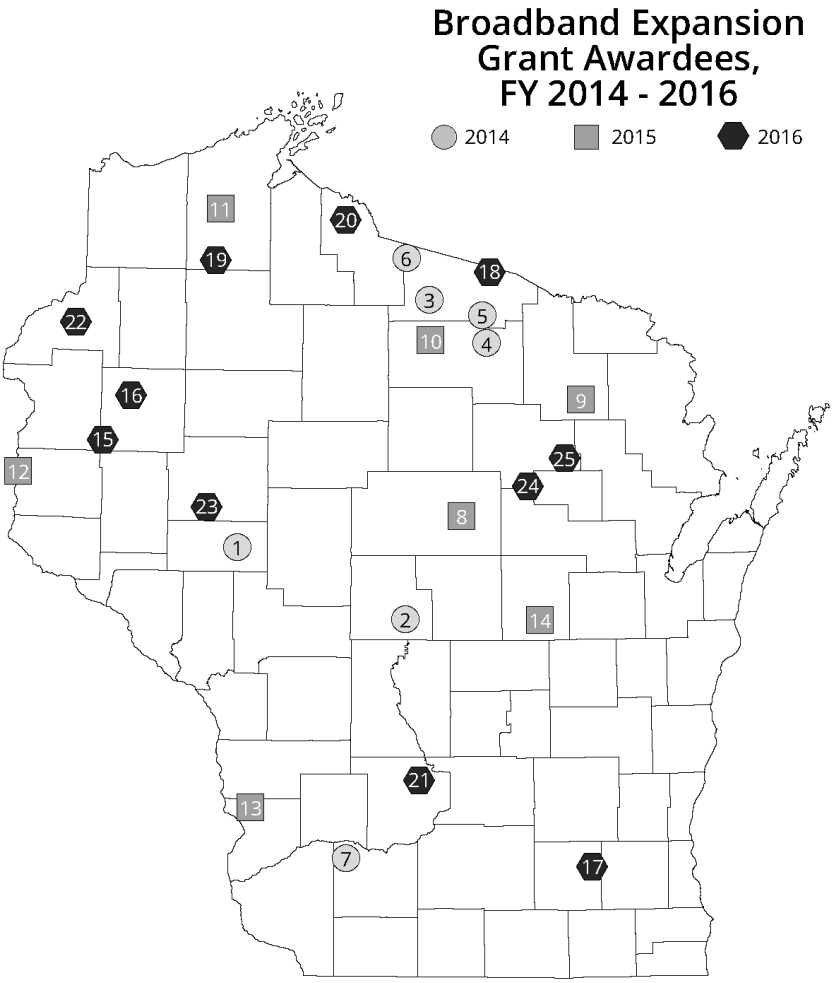
Third Grant Period: FY 2015-16

In FY 2015-16, the PSC was authorized to award a total of $1.5 million in grants. The PSC received 28 applications requesting a total of approximately $4.4 million. The applications were reviewed by a screening panel consisting of three PSC staff and a representative of the Wisconsin Farmers Union. The panel determined that 27 of the applications were eligible but was unable to determine whether one application submitted by a public entity met the requirement to have a private partner.

The PSC awarded grants to 11 applicants, eight of which were public-private partnerships and three of which were private entities. The PSC awarded the recipients approximately $1.5 million for projects affecting consumers in Bayfield, Barron, Burnett, Chippewa, Iron, Jefferson, Langlade, Sauk, Shawano, and Vilas Counties. All of the grant recipients proposed projects that included matching funds. Ten of the projects involved fiber optic technology and one involved fixed wireless.

The location of the primary applicant associated with each grant award is shown in the map below and identified with a number that corresponds with the list of information about each award provided in **Appendix 1**.

Figure 3: Broadband Expansion Grant Awardees[19]



Fourth Grant Period: FY 2016-17

For FY 2016-17, the PSC is authorized to award a total of $1.5 million in grants. The application deadline was June 16, 2016, and the awards will be reviewed by a screening panel consisting of three PSC staff and a representative of Wisconsin Manufacturers and Commerce.

[19] Provided by the PSC.

BROADBAND FORWARD! COMMUNITY CERTIFICATION

Legislation providing a process for certification of a city, village, town, or county as a Broadband Forward! Community was enacted in the most recent legislative session. As introduced, this legislation would have prioritized Broadband Expansion Grant applications submitted by a Broadband Forward! Community. As enacted, a grant application submitted by a certified community is not given priority related to the certification.

To become certified, a community must adopt an ordinance that establishes an efficient process, as described in statute, for reviewing applications and issuing permits that may be required by the community for broadband network construction projects. [s. 196.504 (5), Stats.]

To facilitate the certification process, the PSC has prepared a Broadband Forward! Community model ordinance that is available online and meets the statutory requirements. If a community adopts the model ordinance, it is eligible for certification. Alternatively, a community may enact its own ordinance and submit a certification that its ordinance meets the statutory requirements.

PART III – FUNDING FOR THE WISCONSIN BROADBAND EXPANSION GRANT PROGRAM

Since the Broadband Expansion Grant Program was created in 2013, different sources have been used to fund the program. During the first two fiscal years of the program, funding was provided from a one-time transfer of Department of Administration (DOA) funds. Currently, the program is funded from a one-time transfer of funds from a balance that had accumulated in Wisconsin's Universal Service Fund (USF), described in more detail below. Under current law, the PSC is not authorized to raise additional funding for the Broadband Expansion Grant Program. If the current funding structure continues, the PSC will have sufficient funds to annually award up to $1.5 million in grants through FY 2018-19. The availability of additional funding for the program depends, in part, on the status of the USF.

FUNDING IN FY 2013-14 AND FY 2014-15

2013 Act 20 (the 2013-15 Biennial Budget Act) funded the Broadband Expansion Grant Program by transferring $4.3 million from DOA's Information Technology and Communications Services Account, which the statutes designate for DOA to use to provide information technology services to nonstate entities, such as local governments.

The Act authorized the PSC to annually award a total of $500,000 in broadband expansion grants in FY 2013-14 and FY 2014-15. At the end of FY 2014-15, the remaining unspent $3.3 million was transferred to the General Fund.

FUNDING IN FY 2015-16 AND FY 2016-17

2015 Act 55 (the 2015-17 Biennial Budget Act) authorized the PSC to annually award a total of $1.5 million in broadband expansion grants in FY 2015-16 and FY 2016-17. To fund the grants, the Act created an appropriation for the program using a one-time transfer of $6.0 million from a fund balance that had accumulated in the USF. [s. 20.155 (3) (r), Stats.]

The USF was created by 1993 Act 496 to provide Wisconsin residents access to telecommunications service. The USF is funded through an assessment on telecommunications providers, which the providers are statutorily permitted to recover directly from consumers. [s. 196.218 (3) (e), Stats.]

The USF assessment generates funding for 12 programs. The PSC administers six of these programs, which generally assist individuals with disabilities, low-income individuals, and certain consumers located in high-cost, rural areas of the state in obtaining and using telecommunications services. DOA administers one program that subsidizes the cost of providing libraries and certain educational institutions with access to BadgerNet, Wisconsin's wide area network. The Department of Public Instruction administers four programs that generally provide financial assistance to

libraries. The UW System administers one program that helps four-year UW campuses maintain access to BadgerNet. [s. 196.218 (3) (a) 3., Stats.]

The statutes provide that the assessment is to be collected from the gross revenue that providers receive from providing intrastate retail voice telecommunications service and certain other services. [s. 196.218 (3) (a) 3m., Stats.] The Biennial Budget Act sets the budget for each of the 12 programs supported by USF funding, and the PSC is responsible for setting assessment rates specific to each provider that the PSC estimates will generate the total amount needed to fund the programs in the subsequent year. [s. 196.218 (3) (a) 3., Stats.]

The PSC has not always considered unspent revenue remaining in the USF at the end of a year when determining assessment rates for a subsequent year, causing an unencumbered balance to accumulate in the USF.[20] The balance totaled $8.5 million at the end of FY 2014-15, before $6.0 million was transferred to the Broadband Expansion Grant Program.[21]

The Governor's 2015-17 budget proposal called for creating an ongoing funding source for the Broadband Expansion Grant Program by annually transferring the unencumbered balance in the USF at the end of each fiscal year to this program. The Legislature removed the ongoing funding mechanism and instead provided a one-time transfer of $6.0 million from the fund balance and required the PSC to submit a report to the Joint Committee on Finance on the causes of the balance and options for reducing it in the future. The Governor vetoed the reporting requirement, but the one-time transfer of $6.0 million was enacted. [s. 20.155 (3) (r), Stats.]

Under current law, funding for the Broadband Expansion Grant Program is limited to the unspent funds remaining from the $6.0 million transfer. [s. 196.504 (2) (a), Stats.] The PSC is not authorized to raise additional funding for the program through the assessments paid by telecommunications providers. [s. 196.218 (3) (a) 3., Stats.]

Although the Governor's budget proposal identified future unencumbered fund balances in the USF as a potential source of ongoing funding, the availability of a fund balance will depend on the assessment rates set by the PSC. In addition, the amounts that may be raised through assessments may be affected by decreases in the revenue that is subject to the assessment. The PSC reported to the Legislature in November 2015 that the total amount of intrastate retail voice telecommunications revenue received by providers has been declining for several years and is expected to continue to decline as consumers shift away from using devices that are limited to voice telephone service.[22]

[20] Legislative Audit Bureau Report 13-6: Universal Service Fund (April 2013).
[21] State of Wisconsin 2015 Annual Fiscal Report, Budgetary Basis.
[22] PSC Report to the Legislature on the Universal Service Fund for the 2013-15 Biennium.

PART IV – FEDERAL FUNDING FOR RURAL BROADBAND PROJECTS

Wisconsin telecommunications providers may also be eligible for financial support for broadband deployment through one of several federal programs. The FCC has awarded $46 million and allocated an additional $570 million to Wisconsin telecommunications providers through its Connect America Fund (CAF) programs which were created in 2011. Wisconsin telecommunications providers also have received loans from the U.S. Department of Agriculture (USDA), which administers programs that provide grants and loans for the construction of broadband infrastructure in rural areas.

FCC PROGRAMS

The FCC oversees the federal Universal Service Fund (USF), which provides financial support (subsidies) through different programs that target groups of telecommunications users. It is funded from mandatory contributions from telecommunications carriers that provide interstate telecommunications service. The federal USF has several programs, including the high-cost program, which subsidizes telecommunication services in high-cost areas, which are typically rural and remote areas of the nation.

In 2011, the FCC reformed the high-cost program of the federal USF. The FCC concluded that the existing high-cost program was inconsistent with current communications preferences since it was designed for an earlier era of traditional telephone service and had not adapted to new technologies such as wireless, texting, and email. To encourage investment in broadband infrastructure and emphasize the importance of broadband, the FCC directed funds from the high-cost program to new programs, including the Connect America Fund (CAF) and Alternative Connect America Cost Model (A-CAM), discussed below. The FCC funding available to a carrier depends on whether the carrier is a "price cap" carrier, which are generally large and mid-sized local carriers, such as AT&T, CenturyLink, and Frontier; or, a "rate-of-return" carrier, which are generally smaller carriers that often have a large proportion of customers in rural, high-cost areas.[23]

Price Cap Carriers

As noted above, CAF subsidizes the cost of building and operating broadband infrastructure to serve consumers and small businesses in rural, high-cost areas. CAF funding for price cap carriers has been disbursed in two phases, commonly referred to as CAF I and CAF II. CAF I funding was distributed as a one-time capital injection to carriers and occurred from 2012-14. Under CAF II,

[23] The distinction between price cap carriers and rate-of-return carriers is more nuanced than the size of the telecommunications company. Price cap carriers' rates for originating and terminating interstate long-distance service are set on an individual carrier basis. The FCC determines the ceiling for the rates based on factors such as investment in facilities and inflation. Rate-of-return carriers report their investment in facilities and operations to the National Exchange Carrier Association (NECA). NECA pools the data and the FCC authorizes a rate of return on investment for all of the carriers in the pool.

recipients receive annual subsidies that began in 2015. A carrier is eligible to receive both CAF I and CAF II funding.

CAF I

CAF I funding[24] provided approximately $438 million nationally to price cap carriers, including AT&T, CenturyLink, and Frontier. Wisconsin received approximately $46 million in CAF I funding.

CAF I targeted areas in the country that were most deficient in terms of existing broadband service. Price cap carriers had the option of applying for CAF I funding if a carrier served locations with existing broadband service at less than 768 Kbps download and 200 Kbps upload speed. The FCC then determined the amount of funding it would offer to a price cap carrier. A carrier could accept all, some, or none of the funding. A carrier accepting any amount of funding was required to fulfill certain obligations. For example, the FCC required a carrier to provide download speeds of at least 10 Mbps and upload speeds of at least 1 Mbps. Funds were allocated to carriers on a one-time basis for buildout in the three years following the award.

CAF II

The FCC allocated CAF II funding using U.S. census block data by determining how much money it would take to bring broadband to the households within a census block. The price cap carrier in each census block had the option of accepting the offer of support, or not. Similar to CAF I, CAF II recipients could accept all, some, or none of the funding made available by the FCC. CAF II funding is disbursed through annual subsidies as opposed to the one-time capital injection that occurred in CAF I. CAF II recipients must complete deployment to 40% of their supported location by the end of 2017 and 100% by the end of 2020.

For those states where a price cap carrier turned down support, the FCC is now engaged in a bidding or auction process specific to each individual census block to find a carrier and level of support sufficient to bring broadband service to those areas. It appears that the FCC intends to use this process to determine the level of support per census block nationwide upon completion of CAF II for subsequent rounds of funding.

As a result of CAF II, 10 price cap carriers nationally accepted a total of $1.5 billion in funding from the FCC. The carriers began accepting funding in 2015. Wisconsin, with an aggregate of $570 million, was second only to California in the dollar amount allocated in CAF II funding. The price cap carriers receiving funding in Wisconsin are AT&T, CenturyLink, and Frontier. The goal is to provide service to an estimated 230,000 Wisconsin locations.

Rate-of-Return Carriers

The FCC has also recently made changes to the federal high-cost program to promote broadband deployment by rate-of-return carriers. These carriers may elect to either: (a) participate in a new program called A-CAM; or (b) continue to operate in the federal high-cost program. The A-CAM program requires carriers to complete prescribed broadband deployment by 2026 and meet other obligations such as minimum service requirements. Carriers that opt to

[24] CAF I funding was disbursed in two rounds: one in 2012 and one in 2013-14.

continue under the existing high-cost program must accept reductions in the funding they may receive through the program.

Implications of Federal Funding for Broadband Expansion Grant Applicants

As mentioned above, the PSC considers the availability of additional sources of funding when awarding grants under the State Broadband Expansion Grant Program. In December 2015, the PSC reported that in awarding grants for FY 2015-16, it considered comments from Wisconsin telecommunications providers expressing concern that grants should not be awarded for projects in areas that also include projects eligible for funding through the CAF programs. The comments stated that awarding grants for those projects would be inefficient and could result in overbuilding in certain areas. The PSC does not give conclusive weight to the availability of CAF funding, in part, because the PSC does not have sufficient information to determine which areas will be served by CAF funding and when that service will be provided.

USDA PROGRAMS

The Rural Utilities Service Telecommunications Program (Telecom) offers one grant program and two distinct loan programs for broadband infrastructure. Eligible applicants include most state and local governments, federally recognized tribes, non-profits, and for-profit corporations. Wisconsin entities have benefited from at least one of the loan programs, but have not yet been awarded a grant.

Grant Program

The Community Connect Grant Program is Telecom's only grant program for broadband infrastructure. It is a nationally competitive grant program for providing broadband service to rural and economically challenged communities. To be eligible for this program, areas must have a population of less than 20,000 and broadband service speeds that do not meet certain standards. Awards have been made annually since 2002. In fiscal year 2015, the program included $10.4 million in appropriations. No awards have been made to applicants in Wisconsin.

Loan Programs

The Telecommunications Infrastructure Loan Program is designed to provide financing for new and improved telecommunications infrastructure in rural communities of 5,000 or less. Certain Wisconsin telecommunications providers have participated in this program.

The Farm Bill Broadband Loan Program is designed to provide loans for funding, on a technology neutral basis, for the costs of construction, improvement, and acquisition of facilities and equipment to provide broadband service to eligible rural communities. Information was not available to determine whether Wisconsin telecommunications providers have participated in this program.

Appendix 1

Broadband Expansion Grant Awardees, FY 2014 – 2016

MAP ID	Primary Applicant Name	Grant Amount	Matching Funds	Grant Year
1	CCI Systems, Eau Claire County, et al.	$139,467	$118,533	2014
2	Central State Telephone Co. (Cranmoor)	$100,000	$85,663	2014
3	CenturyLink (Boulder Junction project)	$95,700	$19,245	2014
4	ChoiceTel (Hwy 17)	$47,177	$43,200	2014
5	ChoiceTel (Hwy G)	$68,313	$69,693	2014
6	SonicNet	$13,874	$11,283	2014
7	WIConnect Wireless	$35,469	$1,000	2014
8	Bayfield County, Norvado f/k/a Chequamegon Telephone Coop.	$19,282	$5,000	2015
9	Forest County Potawatomi Community and EDC	$95,500	$95,500	2015
10	Oneida County EDC, et al.	$46,450	$39,010	2015
11	Somerset Telephone Co.	$80,000	$167,000	2015
12	Telephone USA of WI d/b/a CenturyLink	$125,000	$183,000	2015
13	Village of Weston	$73,978	$73,978	2015
14	Waupaca OnLine	$12,369	$12,369	2015
15	Amery Telephone Co.	$99,000	$393,000	2016
16	CenturyTel of the Midwest - Wisconsin, LLC (Cumberland project)	$140,970	$303,030	2016
17	CenturyTel of the Midwest - Wisconsin, LLC (Sullivan project)	$145,558	$235,442	2016
18	Chequamegon Communications Cooperative, Inc.	$98,000	$123,095	2016
19	Chippewa County, Wisconsin Independent Network, LLC	$286,165	$260,000	2016
20	ChoiceTel LLC, Town of Land O'Lakes	$249,093	$249,092	2016
21	GogebicRange.net, Iron County Resource Development Association	$41,914	$36,785	2016
22	Reedsburg Utility Commission (Town of Delton project)	$69,300	$254,000	2016
23	Siren Telephone Co. (Village of Webster project)	$150,000	$778,854	2016
24	Wittenberg Wireless LLC (Silver Birch Ranch project)	$150,000	$266,125	2016
25	Wittenberg Wireless LLC (Village of Mattoon)	$70,000	$73,608	2016
Total		$2.4 million	$3.9 million	