15 - 0977

MINNESOTA OFFICE OF BROADBAND DEVELOPMENT 2014 ANNUAL REPORT

Report to the Legislature as required by Minnesota Statute § 116J.39, Subd. 5

September 10, 2015

Minnesota Department of Employment and Economic Development

Total cost of salaries, printing, and supplies in developing/preparing this report is $5,915.50 (reported as required by Minn. Stat. 3.197).

Executive Summary

The Minnesota Office of Broadband Development (OBD), housed within the Department of Employment and Economic Development (DEED), was created in 2013 to improve access to modern broadband services and expand the skills and knowledge needed to use them.

In order to achieve the goals set in Minn. Stat. §237.012, the Office of Broadband Development concentrated its first-year efforts on relationship building. These efforts paid off, with public-private partnerships more than doubling the state's investment in the Border-to Border-Broadband Development Grant Program. Continuing partnerships are essential for building a shared long-term vision for using broadband to advance Minnesota's economic and social prosperity.

In 2014, Office of Broadband Development staff achieved the following:

- Conducted outreach across Minnesota to gather stakeholder input and outline the Office of Broadband Development resources available to communities and broadband providers.
- Saw the Border-to-Border Broadband Development Grant Program signed into law by Gov. Mark Dayton.
- Launched the Border-to-Border Broadband Development Grant Program application process and reviewed 40 grant requests.
- Awarded $19.4 million in state grants to 17 recipient organizations.
- Spoke at or presented to over 50 groups and events about Minnesota's broadband goals and the state's current efforts to meet them.
- Began discussions with anchor institution networks (consisting of K-12 schools, libraries, and local government entities) to accurately measure their broadband connectivity levels and needs.
- Laid groundwork for transition from federally funded Connect Minnesota broadband mapping and data gathering to a targeted Minnesota-based measurement solution.
- Tracked progress of federal initiatives that will impact Minnesota's providers and communities.
- Consulted on DEED's efforts to recruit data centers into Minnesota to increase economic competitiveness.
- Staffed and supported the Governor's Task Force on Broadband.

2014 OVERVIEW

The Office of Broadband Development began its work within DEED in early 2014. In partnership with the agency's economic development programs, staff spent their first year building both the internal and external relationships necessary for successful coordination of strategies to achieve Minnesota's broadband goals. Milestones and focus areas included:

Building relationships

- Executive Director hired in January 2014.
- Conducted outreach across the state to gather stakeholder input from communities and broadband providers.
- Spoke at or presented to over 50 groups and events about Minnesota's broadband goals and the state's current efforts to meet them.
- Began discussions with anchor institution networks (consisting of K-12 schools, libraries, and local government entities) to accurately measure their broadband connectivity levels and needs.
- Participated in FirstNet (public safety broadband) network planning process.
- Laid groundwork for transition from federally funded Connect Minnesota broadband mapping and data gathering to a targeted Minnesota-based measurement solution.

Consulting, researching, and advising

- Tracked progress of federal initiatives that will impact Minnesota's providers and communities and potentially state policy, including: Connect America Fund II (CAF), Rural Broadband Experiments, E-Rate modifications, and implementation of Farm Bill broadband provisions (including the status of the USDA broadband loan program).
- Conducted outreach to national and state stakeholders, including the National Telecommunications and Information Administration (NTIA), U.S. Department of Agriculture Rural Development/Rural Utilities, the Veterans Administration, Department of Human Services, Association of Minnesota Counties, League of Minnesota Cities, and the Minnesota Association of Community Telecommunications Administrators, among others.
- Participated in and/or helped host three national broadband events in the fall of 2014, including a Fiber to The Home Council annual conference, NTIA regional broadband workshop, and the National Association of Telecommunications Officers and Advisors annual conference.
- Consulted on DEED's efforts to recruit data centers into Minnesota, enhancing understanding of how connectivity can increase economic competitiveness.
- Coordinated public, private, and philanthropic efforts in state broadband development.
- Conducted planning and policy analysis to help shape legislative recommendations related to achieving Minnesota's statutory goals for broadband availability, speed, and use.
- Researched and collected data on broadband-related issues at local, state, national and international levels to ensure Minnesota's competitiveness in broadband availability and use.
- Provided assistance to local broadband initiatives, including development of partnerships across sectors to ensure the collaboration, cost-sharing and cost effectiveness of broadband development in Minnesota, especially as it pertains to

widening community and economic development opportunities for state residents, businesses, and other organizations (such as health care and education).
- Staffed and supported nine Governor's Broadband Task Force meetings and assisted with the preparation of the Task Force annual report.

Implementing the Border-to-Border Broadband Development Grant Program

- Following the establishment of the Border-to-Border Broadband Development Grant Program, toured the state to seek feedback on how the funds should be awarded.
- Developed the necessary protocols and application processes to allocate $19.4 million in Border-to-Border Broadband Development Grant Program funds by early 2015.
- Launched the grant application process and reviewed 40 grant requests.
- Awarded grants to 17 recipient organizations.
- Hired a grants specialist coordinator and half-time program administrator in October, 2014.

EXISTING BROADBAND INFRASTRUCTURE

While Minnesota is fortunate to have a strong group of experienced broadband providers, cost continues to be a limiting factor in reaching statewide coverage. In many locations, private sector broadband will pay for itself because of high use and high population density. In other areas, publicly subsidized broadband may be required to ensure an equitable level of access and affordability across geographic and economic strata. Recently, new programs (including the Border-to-Border Broadband Development Grant Program) have marked the state's entry as an additional funding partner in completing the construction of the border-to-border network.

Empirical evidence to date predicts that Minnesota will need to continue to rely on public-private partnerships to invest in advanced broadband well into the future.[1,2] No single sector can meet these needs alone, given the increased broadband speeds and data capacity that will be required to remain competitive.[3] The following are the public and private players in Minnesota's current broadband infrastructure system.

Local Broadband Providers

Minnesota has a healthy ecosystem of national and local broadband providers serving our state. There are over 126 known established providers, including 66 incumbent telephone operators (CenturyLink, Frontier, Windstream, Albany Mutual Telephone Association, Woodstock Telephone Company, etc.) nine traditional cable operators (Charter, Mediacom, Midcontinent, Sjoberg's, etc.), seven municipal networks, 35 fixed wireless providers (WISPs), five cellular mobile providers, and four satellite operators. For a full list of these providers, please visit: http://mn.gov/deed/images/ProvidersByCounty.pdf.

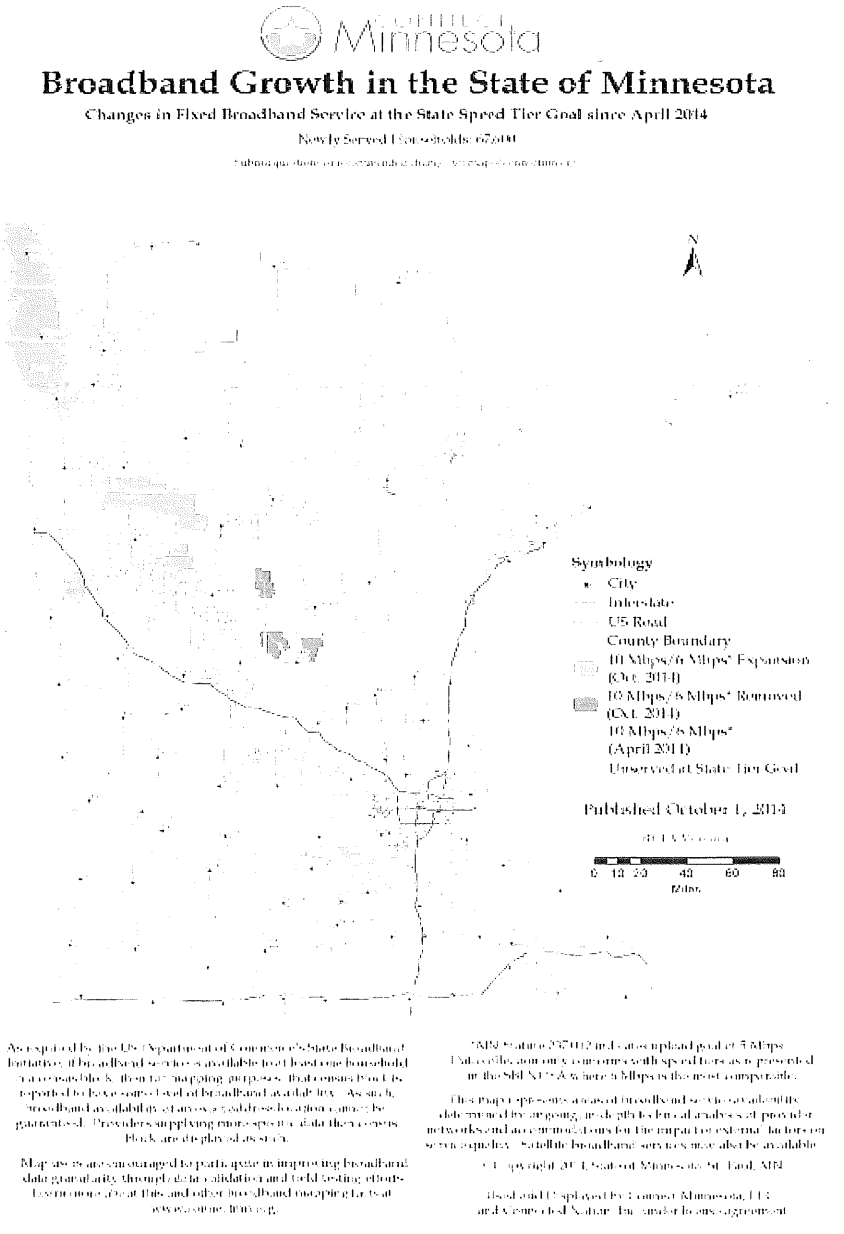
---

[1] STARS. Statewide Access Routing System, MN Department of Administration

[2] Access Minnesota: a cross-sector public-private collaboration to bring basic Internet to every county in Minnesota, led by the Minnesota Extension Service and the MN Department of Administration, federal grant from the U.S. Dept of Commerce.

[3] STARS & Access Minnesota archives, Minnesota Historical Society http://www2.mnhs.org/library/findaids/gr00825.xml

While significant private investments have been made in the past, Minnesota is reaching the point at which traditional financial models do not cover the costs associated with remaining unmet needs. In some instances, public interests have stepped up to assist with closing these gaps. In others, Minnesota households and businesses simply remain unserved with a reliable, affordable broadband connection. The following map shows progress that has been made in broadband deployment in 2014.



Federal Programs

The federal government has traditionally supported telecommunications services for high cost (rural) areas of the country, low-income users, educational institutions, and rural healthcare providers. Such support comes through the FCC's Universal Service Fund (USF), which is funded by a surcharge on interstate and international telecommunications services. Across the nation, this fund distributes $8 billion annually through four programs focusing on different areas of service needs.

In recent years, the FCC has been working to transition the four programs (high cost support, E-rate, rural healthcare and Lifeline) from support for telephone service to also include support for broadband services. Each of these projects is a work in progress; more detail is available in Appendix A of this report.

In addition, Minnesota has seen a number of federal investments in broadband infrastructure over the past several years:

- $228.5 million for infrastructure – ARRA Broadband Stimulus Projects
- $340 million – USDA broadband loans since 2009
- $14.2 million – Connect America Fund Phase I

While the ARRA broadband stimulus and CAF Phase I were one-time investments, the USDA broadband loans and other related USDA programs (Community Connect, Distance Learning and Telemedicine) will continue under the 2014 Farm Bill.

The OBD is also closely monitoring another federal network, FirstNet, which is the broadband network being developed for first responders. Future network partnering or sharing under this program would produce a larger community benefit.

Municipal Broadband Networks

There are two long-time municipal telephone companies in Minnesota: Barnesville Municipal Telephone Company and Crosslake Telephone Company. Both now deliver Internet service. Barnesville upgraded to a fiber-to-the-home offering in 2014, while Crosslake's service currently delivers up to 20Mbps download/5 Mbps upload.

The cities of Windom and Bagley now also offer broadband service in addition to being the cable providers for their communities.

New municipal broadband entities include the city of Monticello and Lake County. Chaska and Moose Lake offer fixed wireless broadband services. Other public entities are actively considering a range of options for improving the broadband services available in their communities.

I-Nets

Many communities also rely on institutional networks, or "I-nets". These are networks that connect city and county facilities, schools, and libraries.

Many I-nets were originally provided as part of cable franchise agreements with municipal facilities. In some communities, that relationship is maintained as cable franchise agreements are renewed. In other areas, municipalities have decided to self-provision its voice, video and/or data networks or purchase them outright from a private provider.

CURRENT STATUS OF CONNECTIVITY, USE, AND NEEDS

Minnesota named Connect Minnesota as the state's designated entity under the American Recovery and Reinvestment Act's (ARRA) State Broadband Initiative (SBI). One of Connect Minnesota's responsibilities under this act was the collection of data on community anchor institution (CAI) connectivity. The parameters for the collection of this data were set by the federal government and looked at the connectivity of Minnesota's K-12 schools, public and private higher education institutions, libraries, hospitals, police and fire departments, local governments, and other public institutions.

Unfortunately, many times the data required by the federal government did not always align with the connectivity metrics that are most useful to the state. Therefore, the National Telecommunications and Information Administration data is referred to in this report, but the focus going forward will be on data gathered specifically related to Minnesota's state goals. This data collection program ended on January 31, 2015.

Going forward, the Office of Broadband Development will work with K-12 schools and public libraries to develop better connectivity measurements. The Office will then gather data using those measurements with a goal of having a clear connectivity picture for these two sectors by the end of 2015.

OVERVIEW OF 2014 BORDER-TO-BORDER BROADBAND GRANT PROGRAM

In May of 2014, Governor Dayton signed the Border-to-Border Broadband Development Grant Program into law. The law allocated $20 million for broadband infrastructure grants and established certain parameters for eligibility, including:

- A maximum award per project of $5 million and up to 50 percent of eligible infrastructure costs;
- Eligible areas included unserved communities (without a wireline service of at least 4Mbps down and 1Mbps upload) and underserved communities (without a wireline service meeting the state's broadband speed goals). Projects targeting unserved areas were given priority;
- Awards were to be made to geographically dispersed projects; and
- Factors such as community support, benefits to community anchor institutions, service to economically distressed areas of the state, and leverage funding may also be considered.

In the summer and early fall of 2014, the Office of Broadband Development met with stakeholders in Montevideo, Baxter, Eveleth, Wyoming, Crookston, Owatonna and Perham to share information and plans for the grant program and to accept and incorporate feedback.

On September 24, 2014, the Office announced and published the Request for Proposals for the Border-to Border-Broadband Grant Program. Applications were received through October 28, 2014. To avoid project duplication in communities where wireline broadband service was already available, a process was created by which existing providers could challenge applications.

Grant Application and Selection

DEED received $44.2 million in funding requests, representing a total of 40 projects around the state. Total eligible applicant project costs were $99,917,339, reflecting the requested state funds (up to 50% of broadband deployment costs) and the local match combined.

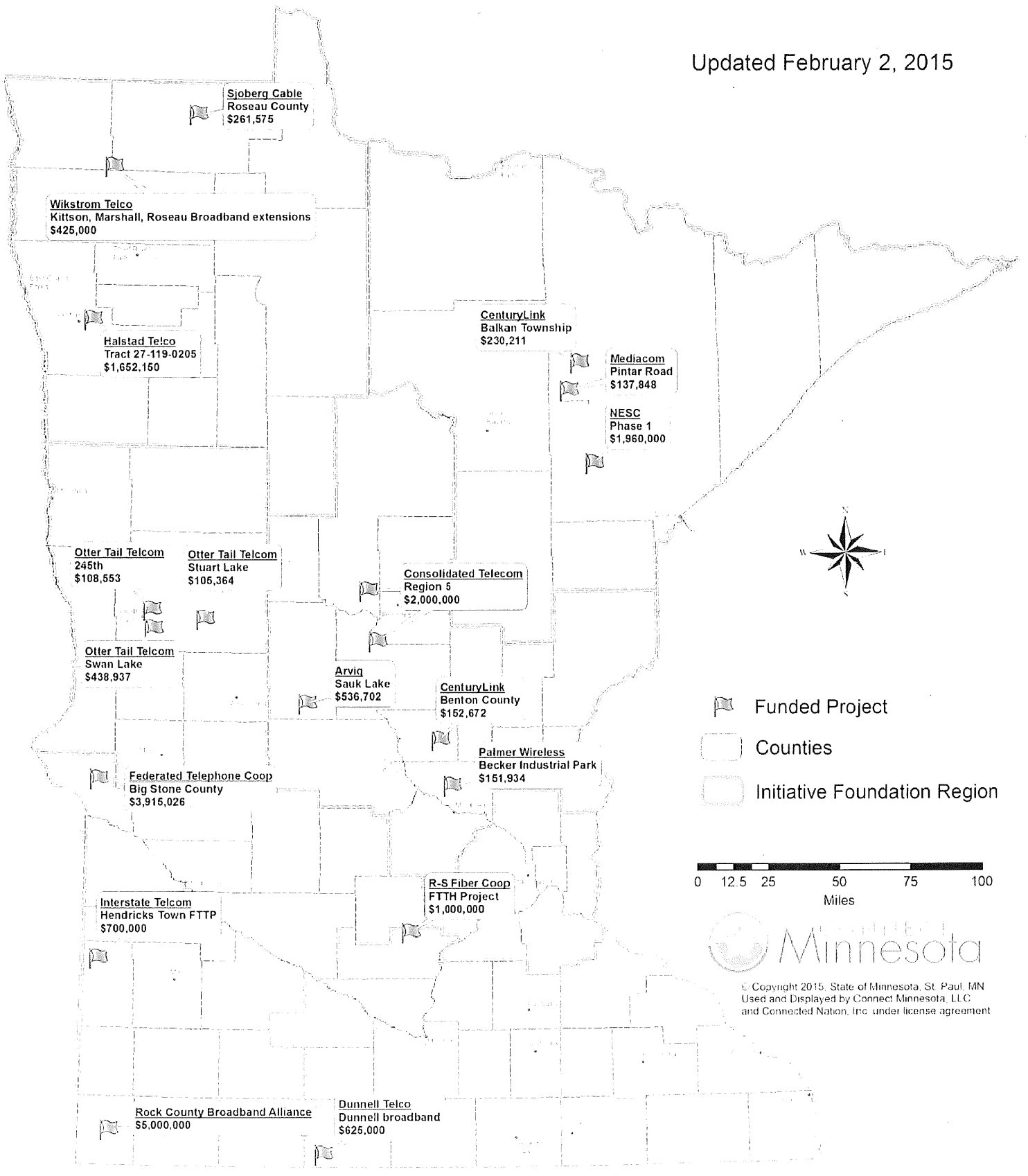
$19.4 million was available for awards after administrative costs. A DEED selection committee reviewed the applications according to criteria established by the legislation, and based on these reviews, the Commissioner of DEED made award decisions; these awards were announced on February 2, 2015.

The funds awarded by DEED had a significant impact on communities across the state:

- Number of entities receiving grants: 17
- Total local match = $25,798,388
- Total investment value of projects = $45,199,360
- Households served: 5860
- Community institutions served: 83
- Businesses served: 150

A full list of 2014 grant recipients is located in Appendix B of this report.

Updated February 2, 2015



Grant Monitoring and Reporting

Grant recipients will be required to document their progress in achieving the construction and broadband speed objectives outlined in their applications. This includes the number of fiber miles installed and the number of jobs created in the course of the installations.

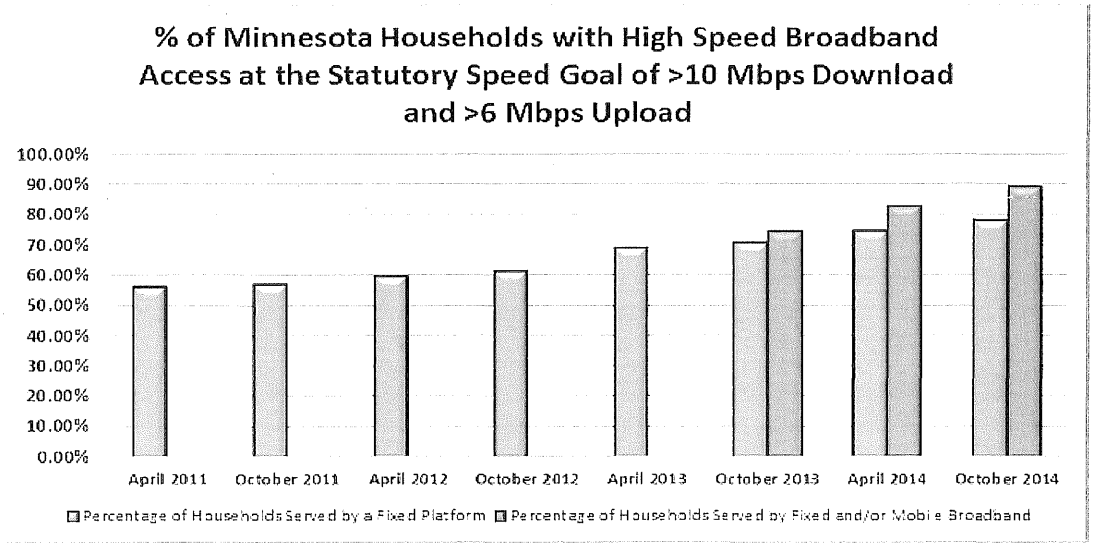
In addition, the OBD is working to create data systems to capture the broader societal and economic impact of these projects. These metrics may include the growth rate of connectivity-dependent businesses and jobs, use of online learning tools outside the classroom, and how fast the state can shift to online-only delivery options for public services.

PROGRESS ON BORDER-TO-BORDER GOALS

Minn. Stat. §237.012 establishes two types of state broadband goals – an Access Goal and several Comparative Goals. The Access Goal measures how many of Minnesota's households and businesses meet current minimum service standards. The Comparative Goals measure how Minnesota compares to other states and to other countries. The legislature included these Comparative Goals recognizing that the Access Goal might not keep pace with an increasingly globalized economy and fast-paced technology development.

Access Goal - All households and businesses have access to service of at least 10 to 20Mbs download and 5 to 10Mbps upload by 2015

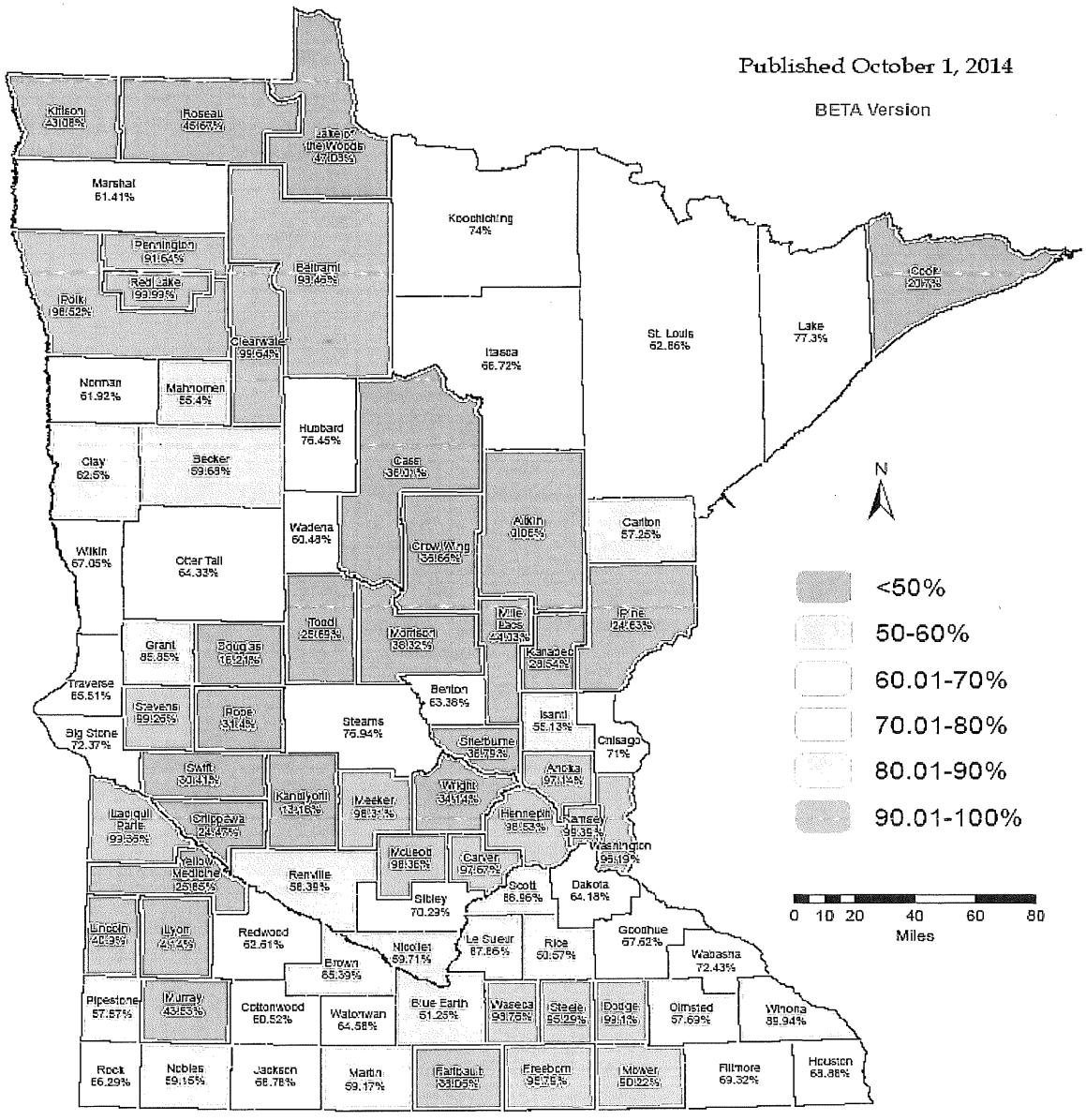
Statewide: As the chart below shows, progress is being made toward this goal. Only 56% of Minnesota households had access to a fixed, terrestrial broadband service in 2011, while 78% had access in 2014. Also, as noted by the red bars on the chart below, mobile broadband has made rapid advancements in speed and availability (though, significantly, mobile broadband does not yet meet the federal affordability test for a primary household internet connection).



County Level: In Greater Minnesota, the percentage of homes without affordable access at the state goals is at 36%. As the map below indicates, that figure varies greatly depending on the county. Further detail (including individual county maps) are available on the DEED Broadband website at: http://mn.gov/deed/programs-services/broadband/maps-tests/index.jsp

Broadband Availability in the State of Minnesota
Percentage of Households Served by Terrestrial, Non-Mobile Broadband Service

At Least 10 Mbps Download/6 Mbps Upload Speeds
Statewide Availability: 78.16%



Map users are encouraged to participate in improving broadband data granularity through data validation and field testing efforts. Learn more about this and other broadband mapping facts at www.connectmn.org.

CONNECT Minnesota

Submit questions or recommended changes to:
maps@connectmn.org

New Federal Standard: In January 2015, the Federal Communications Commission (FCC) adopted a new definition for broadband service. The current standard establishes a minimum download speed of 25 Mbps and a minimum upload speed of 3 Mbps. In Minnesota, 87.26% of households have broadband service available from a non-cellular provider that meets the FCC's specifications.

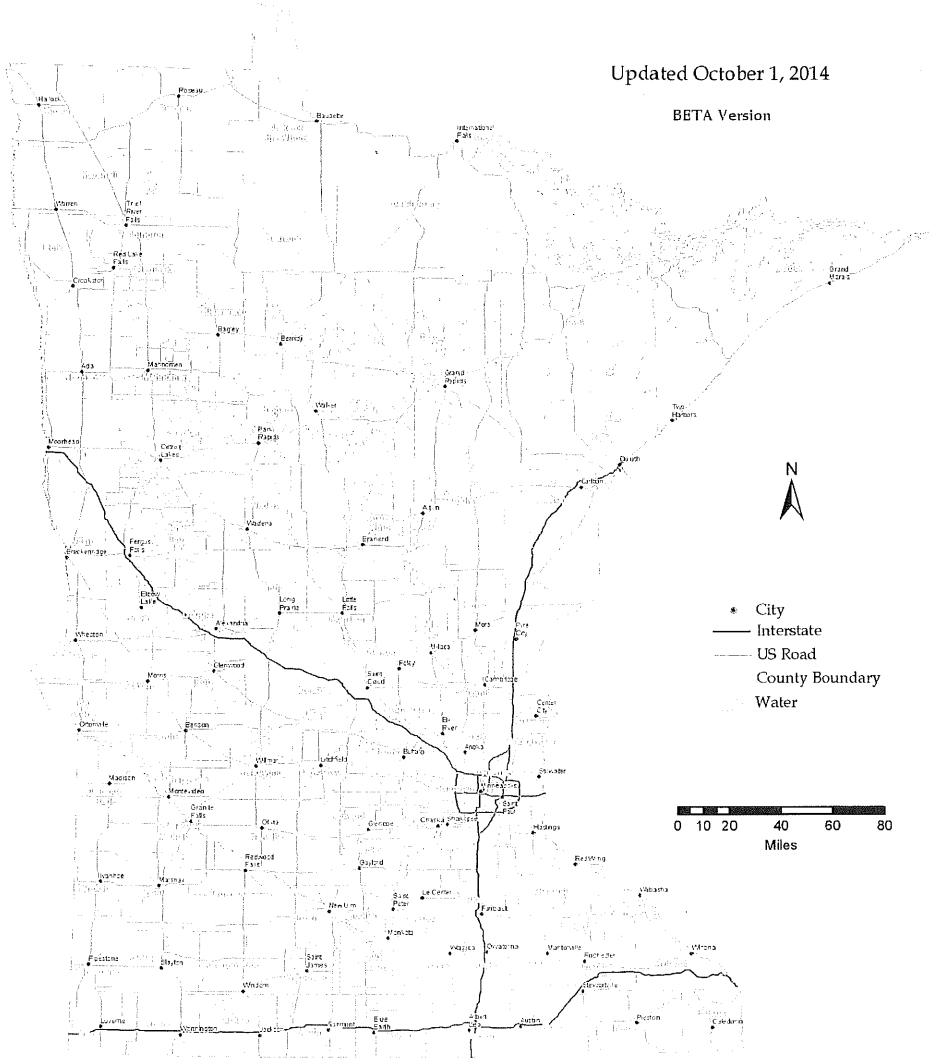
There are significant disparities, however, in those households that do not have access. While only 1% of Minnesotans in urban areas (approximately 20,000 households) lack access to broadband as defined by the FCC, 47% of households (approximately 246,000) in Greater Minnesota do not have access at these minimum speed levels. The map below shows coverage in Minnesota using this revised FCC definition.

CONNECT Minnesota

Broadband Service Inventory for the State of Minnesota

Advertised Speeds of at Least 25 Mbps Downstream and 3 Mbps Upstream

Submit questions or recommended changes to: maps@connectmn.org



As required by the US Department of Commerce's State Broadband Initiative, if broadband service is available to at least one household in a census block, then for mapping purposes, that census block is reported to have some level of broadband availability. As such, broadband availability at an exact address location cannot be guaranteed. Providers supplying more specific data than census block are displayed as such.

Map users are encouraged to participate in improving broadband data granularity through data validation and field testing efforts. Learn more about this and other broadband mapping facts at www.connectmn.org.

This map represents areas of broadband service availability determined by ongoing, in-depth technical analysis of provider networks and accommodations for the impact of external factors on service quality. Satellite broadband services may also be available.

Comparative Goals: Minnesota should achieve the following:

1. In the Top 5 states for broadband speed universally available:
   Minnesota consistently fails to break into the top five (or even the top ten) states, as measured quarterly by Akamai.[4] Minnesota's ranking in the third quarter of 2014 was 20th. Minnesota's average connection speed of 11.7Mbps was well below those of states in the top five, which had average connection speeds ranging from 17.4 to 14.6 Mbps.

2. In the Top 5 states for broadband access (adoption):
   Home broadband adoption statewide grew from 72% in 2010 to 77% in 2014, while statewide mobile adoption more than doubled from 26% to 59% during the same period. Home broadband adoption in rural areas of the state also grew significantly, rising from 58% in 2010 to 68% in 2014[5]. A recent NTIA study entitled "Exploring the Digital Nation: Embracing the Mobile Internet" shows Minnesota ranking 5th overall in broadband adoption.[6]

3. In the Top 15 countries when compared globally for broadband penetration:
   Generally, this goal has been difficult to measure due to a lack of a comparable metric for both the state and country levels. However, Akamai's quarterly reports do feature a measure that looks at the number of broadband connections at 4 Mbps or higher in a state compared to all connections in that state or country. Using that metric, Minnesota ranks 38th.

BROADBAND AND ECONOMIC DEVELOPMENT

Robust broadband availability is critical to continuing a strong economic climate in Minnesota. Several studies since the mid-2000s have examined the relationship between broadband and economic development nationwide and research has consistently demonstrated a strong association between the two. Continuing research seeks to demonstrate exactly how many units of economic development a community can expect from a specific dollar investment in a fiber network, and Minnesota is looking to contribute to these types of analyses.[7]

In one widely cited 2013 study on the impact of broadband on the economic health of rural areas, researchers from Oklahoma, Mississippi, and Texas found that "high levels of broadband adoption in rural areas do causally (and positively) impact income growth... Similarly, low levels of broadband adoption in rural areas lead to declines in the number of firms and total employment numbers."[8]

This infographic from Connect Minnesota's 2014 Business Survey shows the importance of broadband availability and adoption in Minnesota's business sector.

---

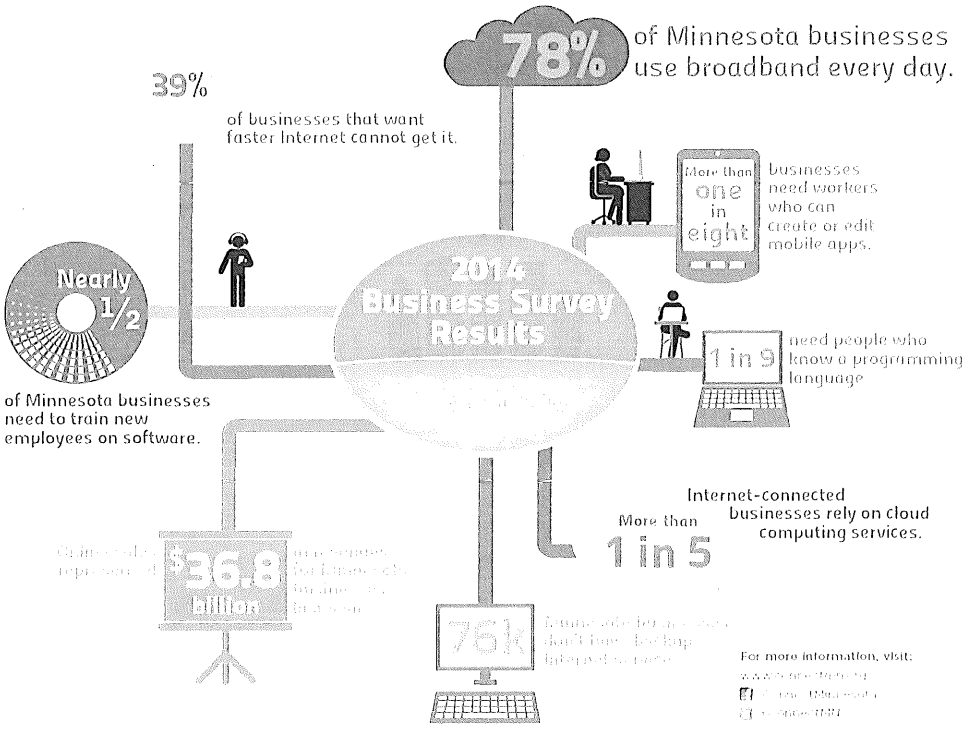
[4] The most recent Akamai state of the Internet report can be found at http://www.akamai.com/dl/content/q3-2014-state-of-the-internet-report.pdf

[5] http://www.connectednation.org/residential-survey-data?state=Minnesota

[6] http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_embracing_the_mobile_internet_10162014.pdf

[7] Ibid, page 98

[8] "Broadband's contribution to economic growth in rural areas: Moving towards a causal relationship." *Telecommunications Policy* 38 (2104) 1011-1023. Brian Whitacre, Roberto Gallardo, Sharon Strover.



Anecdotally, we also know that site selectors routinely eliminate locations for development because of inadequate telecommunications infrastructure. Many entities, such as education and healthcare providers, require advanced broadband for everyday operations. Others businesses, such as data centers, require broadband to accomplish their key business purpose. Thus far, Minnesota has been able to attract nearly 360 data processing, hosting, and related establishments that employ 7,000 workers. Among these are UnitedHealth Group, Thomson Reuters and Target. Remaining attractive to these types of businesses will help ensure that Minnesota stays ahead of the competition.

Making advanced broadband available and in use as an economic development tool has a positive effect on a range of economic indicators, including site selection favorability. In fact, broadband availability and use has been shown to increase GDP levels, lower unemployment, and improve business efficiency and interaction with customers. Homes increase in value if they have broadband connectivity. A 2013 Swedish study found that in developed countries, gaining 4 Mbps of broadband contributed significantly to economic growth and increased household income by $2,100 per year.[9]

As more definitive indicators are identified and more long-term data on the impact of advanced broadband becomes available, researchers will be able to more clearly identify specific cause and effect relationships between broadband development and economic development. Between 2011 and 2013, ASR Analytics conducted an extensive evaluation of the societal and economic impacts of the $4 billion in federal Broadband Technology Opportunities Program (BTOP) grants to 233 projects across the

[9] Ericsson, "Measuring the Impact of Broadband on Income. http://www.ericsson.com/res/thecompany/docs/corporate-responsibility/2013/impact-of-broadband-speed-on-household-income.pdf

country. Looking at five years of data (in some cases using IMPLAN, the industry-standard software package for measuring short-term economic impacts), ASR found that the introduction of broadband increases GDP per capita 2.7 to 3.9 percent.[10] Another long-term study of 120 nations by the World Bank found that a 10% increase in broadband penetration adds 1.3% to a country's gross domestic product. [11]

By itself, broadband technology requires development, planning, creation, manufacturing, implementation, infrastructure construction, wholesale and retail operations, and maintenance. Over 33,000 of these jobs currently exist in Minnesota, paying median wages ranging from $19 to $37 per hour (well over the median wage of $18 per hour).

Broadband also builds further opportunities for jobs and economic growth. When people learn about and use the applications afforded by more accessible, more affordable, and more powerful broadband, they gain new opportunities -- in business, education, health care, government, and more. This added employment stimulates economic growth.

LOOKING AHEAD

Based on experiences over the past year and ongoing research and outreach to stakeholders via the Governor's Taskforce on Broadband, the Office of Broadband Development plans to expand its focus in the following areas:

- Continue to utilize state-funded broadband investments to establish or leverage partnerships.
- Continue to support the tracking and measurement of broadband access levels across the state.
- Promote broadband adoption by supporting education and training on the effective use of broadband for personal, community, and business growth.
- Work collaboratively with initiatives such as MNDOT's Dig Once Program to increase the efficiency of building broadband infrastructure. This type of collaboration could be successful at both the state and local levels, ensuring that broadband providers are able to take advantage of any road construction projects to install infrastructure.
- Actively explore expedited permitting processes that may reduce costs, in turn making a broadband project more feasible.
- Work with the Governor's Taskforce on Broadband to analyze and review the 2010 broadband goals, set to expire in 2015; determine whether new legislative priorities may be appropriate.

---

[10] NTIA *Broadband USA Final Report: Social and Economic Impacts of the Broadband Technology Opportunities Program* -- September, 2014. Pages 107-109. For the base case of a 2.00 percent increase in broadband availability, BTOP infrastructure spending could be expected to yield $5.7 to $21.0 billion in increased output using results from Czernich et al. (2011) and LECG Ltd. (2009) as the bases for extrapolation, respectively. By definition, these are changes in the level of GDP, so any economic benefit due to increased GDP would occur each year.

[11] *Christine Zhen-Wei Qiang, "Telecommunications and Economic Growth," Washington, D.C.: World Bank, 2009.*

- Establish an accurate inventory of public investments in broadband at an institutional and building-specific level.

- Administer a mobile coverage survey to better understand this type of service coverage throughout the state.

- Actively support providers that are working to implement next generation gigabit service to Minnesota communities.

Appendix A

FCC Universal Service Programs

The Federal Communications, through the Universal Service Administrative Company, administers four programs that provide support for the deployment of telecommunications services in high cost areas, to schools and libraries, to rural health care providers, and to low income telephone subscribers. Each of the four programs has or is transitioning to ensure that the traditional support for telephone services is extended to include support for broadband services. A description of each program and status of the transition is provided here.

High Cost Support: Support for building telecommunications services in high cost areas of the country began to include the deployment of broadband in November 2011. The FCC made funding available through Connect America Fund (CAF) Phase I. In Minnesota, those dollars enabled CenturyLink and Frontier to provide broadband service to almost 20,000 households; Windstream did not accept any CAF Phase I funding in Minnesota.

CAF Phase II is scheduled to roll out in 2015 for price cap carriers; if the price cap carrier declines the offer of support in a state, the FCC will use a competitive bidding process to award support to the lowest bidder. CAF Phase II will offer support based on a cost model. This offer of support must be accepted at the state level, carriers will have six years to complete the build out, and service be built out at speeds of at least 10 Mbps download and 1 Mbps upload.

To determine how best to conduct that competitive bidding process, the FCC initiated a one-time program called the Rural Broadband Experiments (RBE). The RBE program is in progress, with several Minnesota projects still in contention for RBE funding. The OBD is hopeful that final funding decisions will be made in the near term so that projects can begin before the end of the 2015 construction season.

The FCC has also made short-term modifications in how federal support is provided to the remaining carriers, known as rate-of-return carriers (while continuing to work on a long-term plan). The prolonged transition and related uncertainty has slowed the investments that these carriers are making in broadband deployment.

E-Rate: In July and December of 2014, the FCC issued decisions on reforms to the E-Rate system. Short term goals included enabling schools to have 100 Mbps available for every 1000 students and staff; in the long term, the FCC is targeting 1Gbps for every 1000 students and staff along with wireless connectivity in school buildings.

Other reforms include increasing the funding cap for E-Rate from $2.4 billion to $3.9 billion annually. In Fiscal Year 2012, Minnesota schools and libraries received $37,086,877.48 in E-rate discounts; in Fiscal Year 2013, that amount was $32,670,342.76.

Rural Healthcare: Following a federal pilot program, the Healthcare Connect Fund (HCF) was created within the Rural Health Care Program. This program provides a 65 percent discount on eligible expenses related to broadband connectivity to both individual rural health care providers (HCPs) and consortia, which can include non-rural HCPs if the consortium has a majority of rural sites. The Healthcare Connect Fund has an annual funding cap of $400 million.

Three pilot programs affecting Minnesota were funded under this program. They included:

Greater Minnesota Telehealth Broadband Initiative
Existing networks covering approximately 140 facilities will be upgraded to at least T1 connections and connected to a new statewide fiber network to support video conferencing. Maximum support: $5,396,992.

Heartland Unified Broadband Network (South Dakota, North Dakota, Iowa, Minnesota, Nebraska, and Wyoming)
Existing networks will interconnect to a fiber optic DS3 44.7 Mbps-capacity line forming an expanded network of about 180 facilities with connections to Internet2. The expanded and enhanced network will address health problems of the area's aging population, increase the use and quality of teleradiology, and increase distance education activities. Maximum support: $4,781,931.

Sanford Health Collaboration and Communication Channel (South Dakota, Iowa, and Minnesota)
This project will connect seven existing networks at speeds of up to 100 Mbps to access administrative services and connect with educational institutions. Maximum support: $812,152.

Lifeline: The Lifeline program currently provides for a discount on landline and wireless telephone service. In 2012, the FCC solicited proposals for pilot projects to extend the discount to broadband service. Of the 14 projects selected nationally, none were in Minnesota. Advocates have encouraged the FCC to permanently expand the Lifeline discount in 2015 to cover broadband service for low-income subscribers.

Appendix B

List of 2014 Border-to-Border Broadband development Grant Recipients

Arvig (Mainstreet Communications LLC), Sauk Lake area. Awarded $536,702 to build broadband infrastructure to serve 217 unserved premises in the Sauk Lake area, which is located primarily in Todd County (with some project area in rural Stearns County) just north of Sauk Centre. This is an unserved area where no wired broadband infrastructure is available. The full project cost is $1.07 million; the remaining $536,703 (50 percent) will be supplied by a private investment made by Arvig.

CenturyLink Foley, Benton County–Balkan Township. Awarded $382,883 to build broadband infrastructure to serve 162 unserved households in Foley, Benton County and Balkan Township (near Chisholm in St. Louis County). The full project cost is $995,977. The remaining 62 percent match is to be provided by the Iron Range Resources and Rehabilitation Board (IRRRB) ($230,211 for the Balkan project) and CenturyLink ($382,883).

Consolidated Telecommunications Company (CTC), Region 5 Virtual Highway Project. Awarded $2 million to bring high-speed Internet to 247 unserved and 90 underserved premises in Cass, Crow Wing and Morrison counties. This is a shovel-ready first phase in a regional broadband development effort. The full project cost is $4.22 million. The remaining $2.22 million (53 percent) in matching funds will be supplied by a private investment made by CTC.

Dunnell Telephone Co., City of Dunnell, Martin County. Awarded $625,000 as a 42 percent match for a $1.49 million project to build connections at state speed goals for 174 unserved households in Dunnell in Martin County. The remaining $867,650 (58 percent match) will be provided by Dunnell Telephone Co.

Federated Telephone Cooperative, Big Stone County. Awarded $3.92 million to construct broadband infrastructure that will make service available to 1,072 unserved premises. The full project cost is $7.92 million; the remaining $4 million (51 percent) in matching funds will be raised through tax abatement bonds, with the county loaning the bond proceeds to Federated. This project will cover the north half of Big Stone County, as well as the western tract that runs from south to north surrounding the city of Ortonville. The area will include the communities of Barry, Beardsley and Johnson along with the rural parts of western and northern Big Stone County.

Halstad Telephone Co., Halstad Tract MN 11902500 FTTH. Awarded $1.65 million to provide broadband service to 249 unserved locations in Polk County. The full project cost is $3.3 million; the remaining $1.65 million (50 percent) match will be provided by a private investment made by Halstad Telephone. This project surrounds the outskirts of Crookston on all sides except the west side. Halstad's existing service area will help provide middle mile redundancy to the proposed project area.

Interstate Telecommunications Cooperative (ITC), Hendricks Town FTTP. Awarded $700,000 to bring the town of Hendricks in Lincoln County service that surpasses state speed goals. Underserved customers that would benefit include 377 households and farms, 57 businesses, three home-based businesses and eight community anchor institutions. The full project cost is $1.87 million; the remaining $1.17 million (63 percent) match will be provided by a private investment made by ITC.

Mediacom, Pintar Road. Awarded $137,848 to provide broadband services to 122 unserved homes and businesses on the southwest edge of the city limits of Hibbing. The full cost of this project is $275,697; the remaining $137,849 in matching funds (50 percent) will be provided by a private investment made by Mediacom.

Northeast Service Cooperative (NESC) – Frontier Communications Corp., Border to Border Phase I. Awarded $1.96 million for their Phase I project that extends fiber from NESC's middle mile network to 877 unserved end users and to serving nodes. The total project costs are $4.35 million; the remaining $2.39 million (55 percent local match) will be provided by IRRRB ($1.5 million), Frontier ($750,000) and NESC ($135,000). The proposed project is in scattered locations in St. Louis County, including areas in and around Crane Lake, Alborn, Meadowlands, Brookston, Forbes, Kelsey, Soudan, Kabetogama, Ely and Tower.

Otter Tail Telcom, Swan Lake West. Awarded $438,937 to expand existing infrastructure and bring fiber-to-the-home services to 110 unserved locations, including permanent residences with work-from-home employees near Swan Lake, on the outskirts of Fergus Falls, along the I-94 corridor. The total project costs are $877,874; the remaining $438,937 (50 percent local match) will be provided by Otter Tail Telcom.

Otter Tail Telcom, Stuart Lake. Awarded $105,364 to expand existing infrastructure to bring fiber-to-the-home service to 47 unserved locations, including 46 homes and one business near Stuart Lake, just north of State Highway 210 and east of Fergus Falls (between Clitherall and Vining). Total project costs are $210,729; the remaining $105,365 (50 percent local match) will be provided by Otter Tail Telcom.

Otter Tail Telcom, 245th. Awarded $108,553 to serve the northeastern outskirts of Fergus Falls near 245th Street. The project will expand existing infrastructure to bring fiber-to-the-home service to 39 unserved locations, including permanent residences and work-from-home employees. The total project costs are $217,105; the remaining $108,553 (50 percent local match) will be provided by Otter Tail Telcom.

Palmer Wireless, Becker Industrial Park. Awarded $151,934 to deploy 3.4 miles of fiber passing 21 underserved businesses in the Becker Industrial Park (city of Becker) as well as to 12 vacant city-owned lots covering 70 acres. In addition, one of the vacant lots is the future site of the Northstar station. The total project costs are $303,870; the remaining $151,936 (50 percent local match) will be provided by Palmer Wireless via a line of credit.

Rock County Broadband Alliance (RCBA), FTTP project. Awarded $5 million to deploy fiber-to-the-premises (FTTP) service for approximately 1,085 underserved and 265 unserved locations in Rock County. The total project costs are $12.85 million; the remaining $7.85 million (61 percent local match) will be provided by Alliance Communications Cooperative as an equity infusion to RCBA, which is a wholly owned subsidiary of Alliance. Locations include 1,261 households and farms, approximately 68 businesses and 21 anchor institutions in the Jasper, Beaver Creek and Hardwick town and rural areas surrounding Luverne.

R-S Fiber Cooperative, FTTH Project. Awarded $1 million to bring fiber-to-the –home (FTTH) service to 62 unserved and 536 underserved locations in Sibley and Renville counties. Total project costs are $3.32 million; the remaining $2.32 million (70 percent local match) will be provided by a line of credit that R-S Fiber Telcom has committed and partner equity. This project is part of a larger cooperative project

estimated at $38.46 million that will upgrade broadband services to several thousand locations in the region. Hiawatha Broadband Communications will provide operational capacity.

Sjoberg Cable, Broadband Grant Proposal. Awarded $261,575 to provide broadband services to 107 unserved and 49 underserved locations using fiber-to- the-premise technology, predominantly in extremely rural and agricultural areas. The project would build-out in five areas in Roseau County near Roseau, Warroad and Salol. The total project costs are $523,150; the remaining $261,575 (50 percent local match) will be provided by Sjoberg's Inc.

Wikstrom Telephone, Kittson, Marshall, Roseau Broadband Extension. Awarded $425,000 to bring fiber-to-the-home service to 73 unserved and 43 underserved locations in Kittson (15 premises), Marshall (50 premises) and Roseau (51 premises) counties. The total project costs are $943,827; the remaining $518,827 (55 percent local match) will be provided by Wikstrom.