



## GOVERNOR'S TASK FORCE ON BROADBAND



A Report to Governor Mark Dayton and the Citizens of Minnesota  
December 2011

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## Table of Contents

Letter from Margaret Anderson Kelliher, Chair,Governor's Task Force on Broadband .....	1
Task Force Members.....	2
Executive Summary.....	3
Introduction .....	6
Section 1: Needs Barriers, Issues, and Goals for Broadband Access and Adoption .....	7
Goal 1.....	7
Goal 2.....	9
Adoption Issues and Barriers to Broadband Utilization .....	12
Section 2: Needs and Use of Broadband in Minnesota .....	13
Education.....	13
K-12 .....	13
Higher Education.....	15
Health Care .....	17
Energy .....	19
Industries and Business .....	20
Libraries .....	21
Governmental Operations.....	21
State Level .....	21
County Level.....	22
Municipal Level .....	23
Public Safety .....	24
Other Key Economic Sectors: The Arts and Tourism.....	25
Section 3: Internet Literacy.....	277
Section 4: Broadband Accessibility .....	29
Section 5: Progress of the Federal ARRA Broadband Projects and Mapping in Minnesota .....	35
Section 6: Opportunities to Coordinate with Federal, State and Local Agencies.....	47
Federal Level.....	47
State and Local Level .....	49
Conclusion.....	52
Acknowledgements.....	53

## **Letter from Margaret Anderson Kelliher, Chair, Governor's Task Force on Broadband**

Broadband has quickly become one of the essential tools of daily life across Minnesota and around the world. Communities rely on it, businesses search for it as they scout locations and most citizens consider it an indispensable part of their daily lives.

Minnesota, along with every other state, is in a race to keep pace in a world that is rapidly changing. Governor Mark Dayton, on August 25, 2011, issued an Executive Order (11-27) providing for the establishment of a Governor's Task Force on Broadband. The 15-member Task Force is charged with development of broadband policy initiatives that will allow Minnesota to achieve our state broadband needs and goals. The Task Force includes citizens who represent communities big and small, urban and rural, as well as public and private institutions.

As Task Force members begin work, we are committed to developing and maintaining data that clearly establishes the status of Minnesota's broadband development and access. The quality of the data will be a key to understanding the challenge. The Task Force will inventory, assess and report on not only the needs, barriers, issues and goals for broadband access and adoption in the state, but also the status of broadband across key social and business sectors. We are enthusiastic and committed to doing our best for the citizens of Minnesota.

The report we present today is a high-level analysis utilizing existing data and information that will allow the Task Force to move forward into 2012 with a foundation upon which we can develop a more comprehensive approach to broadband policy development. This process will begin in January 2012 when the Task Force will release a Minnesota Broadband Plan Outline.

Sincerely,

Margaret Anderson Kelliher  
Chair, Governor's Task Force on Broadband

## **Task Force Members**

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## **Executive Summary**

On August 25, 2011, Governor Mark Dayton signed Executive Order 11-27 which provided for the establishment of the Governor's Task Force on Broadband. Notice of vacancies for this task force was published by the Minnesota Secretary of State's Office on September 6, 2011. On November 7, 2011, the fifteen members of this task force were named. Following meetings on November 29 and December 19, 2011, the Governor's Task Force on Broadband prepared this report to meet the Executive Order requirements that by December 30, 2011, it inventory, assess and report on:

- a. The needs, barriers, issues, and goals for broadband access;
- b. The needs and use of broadband in Minnesota's education systems, health care system, energy sector, industries and businesses, libraries, governmental operations, public safety and other key economic sectors;
- c. Internet literacy;
- d. Broadband accessibility for unserved and underserved populations;
- e. Progress of the federal ARRA broadband projects and mapping in Minnesota; and
- f. Opportunities to coordinate with federal, state, and local agencies.

Given the short amount of time available to compile this report, the Task Force has focused on a high level overview of the areas required to be addressed.

In regard to the state's progress to meet the broadband goals provided for in Minn. Stat. 237.012, the report provides the following information:

- Based on October 2011 data, 57.40 percent of Minnesota households have available to them broadband at speeds of at least 10 Mbps download and 6 Mbps upload. A map showing where those speeds are available within the state is included with this report.
- In terms of Minnesota's ranking for universally accessible broadband speed, while the average connection speed increased in Minnesota from 4.5 Mbps in 2010 to 5.7 Mbps in 2011, data from Akamai shows Minnesota maintaining its rank of 24<sup>th</sup> among the 50 states for this category.
- For broadband availability (measured at 3 Mbps download and .7 Mbps upload) information available from the National Broadband Map available at <http://broadbandmap.gov> shows Minnesota ranked 28<sup>th</sup>.
- For the last goal, a comparison to countries globally for broadband penetration, a common or even comparable dataset to enable such a comparison could not be found.

In addition to evaluating Minnesota's progress towards achieving the goals provided for in statute, the Task Force also noted that 99.13 percent of Minnesotans do have access to some level of broadband but that 28 percent of Minnesotans do not subscribe. Significant broadband adoption gaps were noted for certain households: minority, low-income, rural and seniors. The Task Force concluded that its work in the future will also include a focus on adoption issues.

For this report, the Task Force also includes the information it was able to obtain or compile with regard to the needs and uses of broadband in the various sectors identified in the Executive Order: education (K-12 and Higher Ed); health care; energy; industries and businesses; libraries; governmental operations (state, county and municipal); public safety; and, other key economic sectors (the arts and tourism). For all sectors included in this report, the Task Force understands the need for, and will commit to, more comprehensive and in-depth evaluations as it continues its work over the next few years.

The Executive Order also required the Task Force to report on Internet literacy in Minnesota. There are many organizations, both in the metro area and in greater Minnesota, that have taken on the challenge of developing the digital literacy skills of Minnesota's residents and businesses. A few of those organizations and projects are highlighted in this report. The Task Force notes that further investigation into Internet literacy will be a part of its ongoing work.

Broadband accessibility data for Minnesota is also provided for various download and upload speed levels, using information Connect MN compiled as part of its federal stimulus grant for mapping broadband in Minnesota. The data included in this report is based on information submitted to the U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA) by the October 1, 2011 submission deadline and incorporates the results of the 2010 Census household data. As noted previously, 57.40 percent of Minnesota's households have access to broadband speeds that meet the goals of at least 10 Mbps download and 6 Mbps upload.

A section of this report addresses the progress of the federal ARRA stimulus funded broadband projects and mapping affecting Minnesota. Most of the projects are still in progress and the impact they will have on increased broadband availability, reaching the state's broadband speed goals, and increasing broadband adoption are thus not yet reflected in the data contained in this report. As the Task Force continues its work, these projects will be tracked to completion.

The final section of this report notes that for broadband to be efficiently and effectively deployed and adopted throughout Minnesota, coordination between various levels of government, as well as public-private partnerships, is critical. Federal level government agencies working on broadband issues, such as

the FCC, NTIA, and the Rural Utilities Service (RUS) of the U.S. Department of Agriculture, are specifically noted. Public-private partnerships involving state level or local partners are also cited, as are recent offerings by cable and telecommunications companies and non-profits for discounted monthly Internet access rates, opportunities for training, and/or programs for receiving a discount on computers. The Task Force notes further work needs to be done to catalog, track and evaluate these activities and that the scope should not be limited to what is happening in Minnesota.

The report concludes with a reminder that it is a high level overview. Much work remains to be done to ensure that facts are well understood prior to targeted and appropriate policies being implemented that will ensure the broadband speed goals are met and that broadband adoption, digital literacy and economic opportunity are addressed.

## **Introduction**

This initial report of the Governor's Task Force on Broadband is focused on presenting a high-level overview of the state of broadband in Minnesota by addressing four main issue areas:

The state of knowledge related to the needs, barriers, and progress toward meeting the state's legislatively directed broadband goals.

The current status of broadband access, adoption and use by key social and economic groups across Minnesota.

Accessibility and adoption issues, including digital and Internet literacy, for unserved and underserved populations.

Progress of federal ARRA broadband projects in the state and opportunities to maximize federal/state/local agency broadband initiatives.

The Task Force focused on a review of existing data, including those compiled in reports submitted by the two previous broadband-focused task forces. In addition, Task Force members leveraged their expertise in targeted social and economic sectors to provide research and analysis for this report.

This report is designed to serve as a foundational document. The Task Force will continue to build the body of knowledge that will allow for more detailed analysis and policy recommendations throughout its three year term.

## **Section 1: Needs Barriers, Issues, and Goals for Broadband Access and Adoption**

State broadband goals were established during the 2010 legislative session and are found in Chapter 237.012 of MN Statute. The goals include:

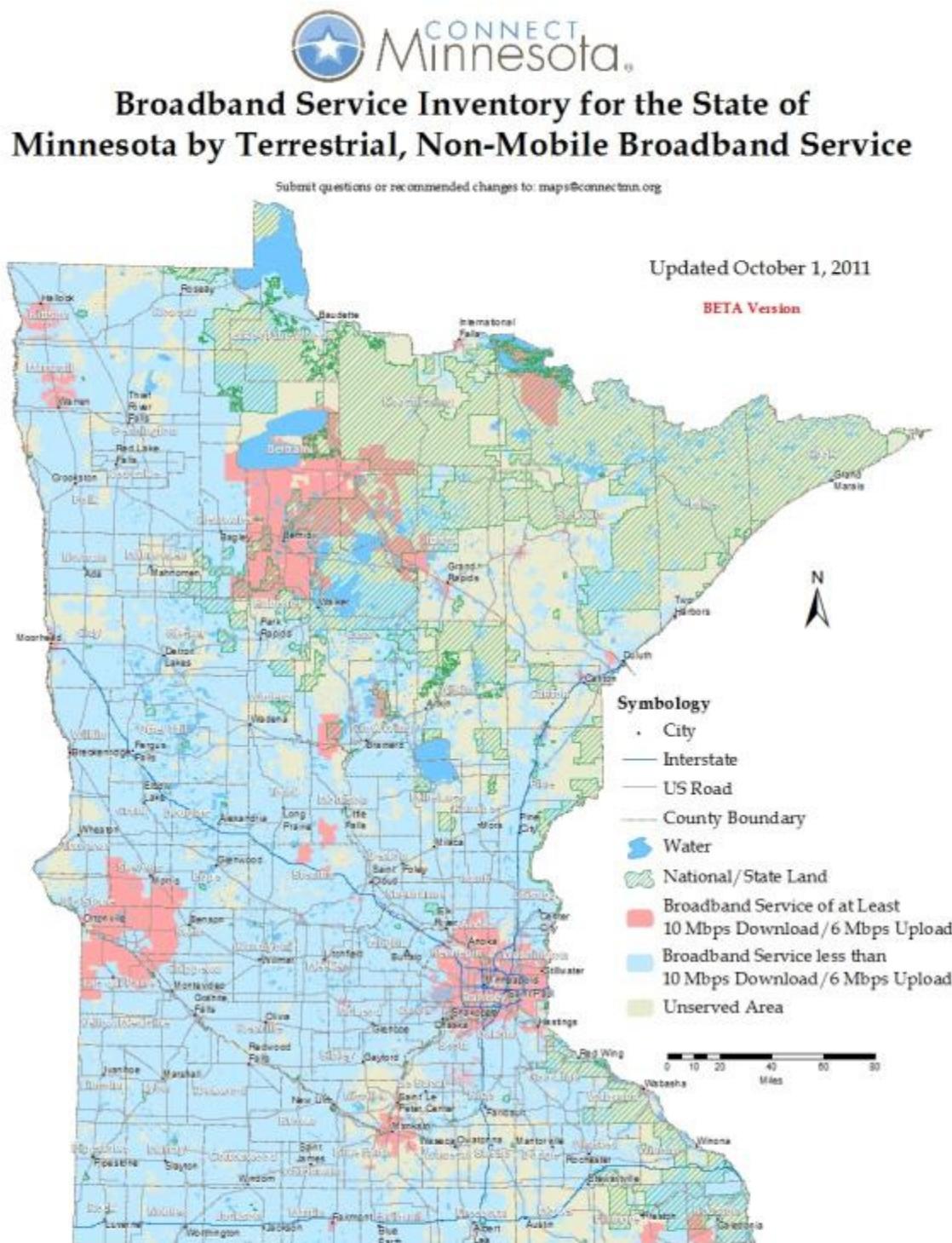
### **Goal 1**

*Universal access and high speed deployment as soon as possible, but no later than 2015 all state residents and businesses have access to broadband service that provides a minimum download speed of ten to twenty megabits per second and minimum upload speed of five to ten megabits per second.*

The latest data provided by Connect MN as measured with 2010 Household Census Data shows the following:

<b>Statute 237.012 Broadband Goal (10 Mbps Download/5 Mbps Upload)</b>		
<b>Availability of Broadband Service of at Least 10 Mbps Download/6 Mbps Upload</b>		
<b>All Platforms</b>		
# Served HH	# Unserved HH	% HH Availability
1,198,124	889,103	57.40

Figure 1 below illustrates non-mobile speed availability in the State of Minnesota utilizing October 2011 NTIA submission data and 2010 US Census Household data.



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](http://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.

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## **Goal 2**

*It is the goal of the state that by 2015 and thereafter, the state of Minnesota will:*

- a. *Be in the top five states of the United States for broadband speed universally accessible to residents and businesses; and,*
- b. *Be in the top five states for broadband access (availability); and,*
- c. *Be in the top 15 when compared to countries globally for broadband penetration (adoption).*

According to the latest data available Minnesota is making strides toward achieving the statutory goals, but still has work to do.

### **Goal 2a Progress**

According to the Akamai Q2 2011 State of the Internet Report, Minnesota is ranked 24<sup>th</sup> for universally accessible broadband speeds. This is the same ranking held by Minnesota in 2010 according to Akamai. While the average connection speed in Minnesota was 4.5Mbps in 2010 and 5.7Mbps in 2011, the speeds available in other states also increased, leaving Minnesota still ranked 24<sup>th</sup>.

State	Q2 '11 Avg. Mbps	QoQ Change	YoY Change
1 Rhode Island	8.2	21%	34%
2 Delaware	8.1	7.7%	12%
3 District Of Columbia	7.5	6.9%	33%
4 Utah	7.0	4.9%	34%
5 Vermont	6.7	30%	28%
6 California	6.7	6.5%	28%
7 New Hampshire	6.6	11%	12%
8 Virginia	6.6	14%	41%
9 Washington	6.5	15%	27%
10 New York	6.4	9.2%	27%

## **Goal 2b Progress**

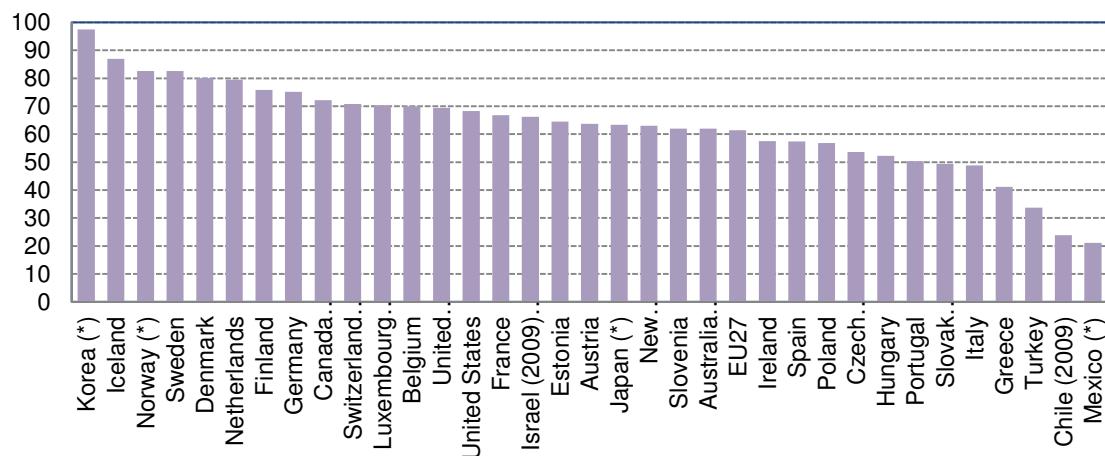
According to statistics available via the National Broadband Map (data as of 12/31/10, measuring access to speeds of 3Mbps download and 0.7 Mbps upload)), Minnesota is ranked 28<sup>th</sup>. This represents an improvement over our 30<sup>th</sup> place ranking as presented in the previous State Broadband Task Force Report (December 2010). ( [http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/mn\\_broadband\\_advisory\\_task\\_force\\_report\\_2010\\_final.pdf](http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/mn_broadband_advisory_task_force_report_2010_final.pdf) )

## Goal 2c Progress

At the time of this report's drafting, a source that would allow for measurement of Minnesota compared to other nations could not be found. However, we can look at more broad data that allows us to understand how the United States ranks internationally and how adoption has progressed within the United States. The chart below shows the United States ranking in comparison to other countries in regards to households with broadband access

**Households with broadband access, 2010 or latest available year**

**Percentage of all households**

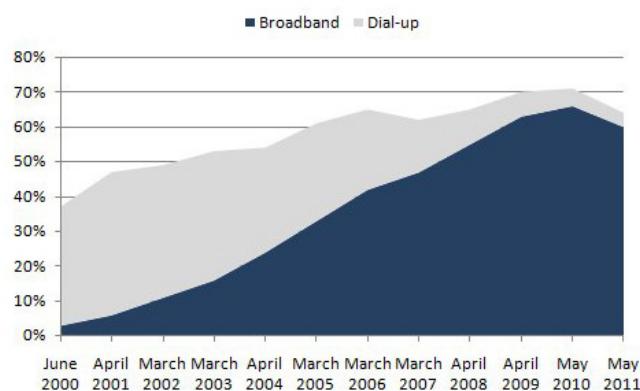


Source: OECD, ICT database and Eurostat, Community Survey on ICT usage in households and by individuals, November 2011.

In addition, according to [Pew Internet & American Life Project Surveys](#) as of May 2011, six in ten (60%) American adults have a high-speed broadband connection at home.

## Broadband and Dial-up Adoption, 2000-2011

% of American adults (age 18+) who access the internet at home via dial-up or broadband, over time.



Source: Pew Internet & American Life Project Surveys, March 2000-May 2011.

[pewinternet.org](http://pewinternet.org)

The Task Force will continue to research this question to find a statistically valid resource for measuring where Minnesota ranks internationally.

### **Adoption Issues and Barriers to Broadband Utilization**

The most recently available Connect MN data shows that broadband (of at least 3 Mbps download speed) is accessible by 99.13% or 2,068,975 of Minnesota households. However, according to the 2011 Connect MN Residential Survey, the data shows that 28% of Minnesota households do not subscribe to broadband. Significant broadband adoption “gaps” exist among minority, low-income, rural and senior households. The most recent data on these groups shows that:

53% of low-income households do not subscribe

51% of Hispanic households do not subscribe

39% of rural households do not subscribe

68% of seniors do not subscribe

79% of low-income seniors do not subscribe

54% of low-income households with children do not subscribe

The largest barrier to adoption cited by respondents is relevance – 29% of non-adopters say they do not believe the content they can find on the Internet is relevant to their lives. Cost is cited as the second largest barrier to adoption. Full survey data is available at: <http://www.connectmn.org/survey-results/residential>

As the Task Force continues its work on creating a Broadband Policy Outline, and in its upcoming meetings and future reports, we will focus on adoption issues. While there are still targeted access issues that the state must address, as well as speed availability per the state broadband goals, the data makes clear that adoption of broadband is an area where focus is demanded. Ultimately, ubiquitous access without adoption is an unacceptable outcome and the Task Force will continue to examine broadband adoption as a unique issue.

## **Section 2: Needs and Use of Broadband in Minnesota**

The Executive Order directs the Task Force to report on the needs and use of broadband in various public, private and not-for-profit sectors of Minnesota. As reflected below, all sectors use broadband, but the identified needs and uses vary in their development. In some cases, these sectors mirror what are defined as “Community Anchor Institutions” (CAIs) by the Federal Communications Commission, the National Telecommunications and Information Administration and the National Broadband Plan. In Minnesota, Connect MN works in coordination with the Minnesota Department of Commerce and other stakeholders, to develop an ongoing mechanism for gathering data on and mapping the location and broadband connectivity of CAIs. A map of CAIs is available: <http://www.connectmn.org/interactive-map> and a survey form for CAIs to complete is available: <http://www.connectmn.org/cai-data> Password: CAI\_MN\_7611

## **Education**

### **K-12**

Several reports at the national level address the needs of K-12 education in terms of broadband. These reports are relevant to the work of the Task Force and will be reviewed in greater detail in the months ahead:

FCC Recommendations in the National Broadband Plan for education: [www.broadband.gov/plan/11-education/](http://www.broadband.gov/plan/11-education/)

The National Education Technology Plan 2010 issued by the U.S. Department of Education: [www.ed.gov/technology/netp-2010](http://www.ed.gov/technology/netp-2010)

The 2011 Horizon Report: <http://wp.nmc.org/horizon2011> addresses emerging technologies and relationship to teaching and learning.

The State Educational Technologies Directors Association (SETDA) serves, supports and represents U.S. state and territorial educational technology leadership. In June 2008, SETDA issued a report to address the importance of high speed broadband access to our nation’s schools. That report is available at

[http://www.setda.org/c/document\\_library/get\\_file?folderId=270&name=DLFE-211.pdf](http://www.setda.org/c/document_library/get_file?folderId=270&name=DLFE-211.pdf)

In June 2010, the Minnesota Center for Rural Policy and Development issued a report (available at <http://www.ruralmn.org/wp-content/uploads/2010/04/schoolbroadband2010.pdf>) for a first look at the bandwidth schools in Minnesota have to access online services. The services being used online include student testing, reports to the state, portals for parents to access their child’s information, and accessing online classes and educational content. The survey found that for the 243 school districts where they were able to determine a bandwidth number, the speed in use by the school districts ranged from 1Gbps to 1.5Mbps. The average speed was 28Mbps but the median speed was only 10Mbps. The cost for broadband purchased by districts was also surveyed, with amounts ranging from \$10,000 to

\$100 per month. In rural districts a higher portion of the cost was covered by state and federal subsidies but the costs as calculated per pupil were also higher in those smaller districts. Many of the school districts in Minnesota have also elected to combine into telecommunications access clusters with a primary function being to purchase broadband for all of the school districts and libraries in the cluster. Despite forming these purchasing cooperatives, cost was still identified as the primary barrier to getting higher speeds, with lack of fiber and the inability to use e-rate funding if part of a cooperative with local government as additional identified barriers. Obtaining greater bandwidth in the next year and again in the next two years was identified as a need for a majority of the districts.

In regard to individual school broadband connectivity and speed data, the Minnesota Department of Education has provided Connect MN with results of their broadband connectivity survey which was distributed in summer 2011 to 1,593 K-12 schools throughout the state. This survey indicated the following results for the 534 schools that responded regarding the type of technology they were using to access the Internet:

	Satellite	DSL	Fixed Wireless	Cable Modem	T-1 Line	Fiber
# of Schools	3	25	26	41	85	354

Additionally 464 schools reported the following download speeds within the predetermined ranges:

2 schools- Less than or equal to 200 Kbps

12 schools- Greater than 200 Kbps and less than 768 Kbps

12 schools- Greater than or equal to 768 Kbps and less than 1.5 Mbps

55 schools- Greater than or equal to 3 Mbps and less than 6 Mbps

62 schools- Greater than or equal to 1.5 Mbps and less than 3 Mbps

81 schools- Greater than or equal to 6 Mbps and less than 10 Mbps

240 schools- Greater than or equal to 10 Mbps and less than 25 Mbps

Connect MN will conduct follow-up within the upcoming year to schools that did not respond to the survey and continue to coordinate with the Department of Education on future surveys and projects to continue gathering data.

While the broadband speeds available for schools are critical to effectively educate students in the 21<sup>st</sup> century, our youth also need the tools to effectively learn from home. For those students that don't attend a brick and mortar school, availability of broadband where they live is especially important. While availability data is presented later in this report, to illustrate the use of broadband for educational purposes, the Task Force thought it would be interesting to include the number of students taking courses online.

As of June 2011, the Minnesota Department of Education (MDE) had certified 24 online learning providers. These providers are either consortia or intermediate districts, charter school programs or multi-district programs. Together, these 24 providers reported 9,559 full-time and 4,631 part-time students, for a total of 14,190 students and a total course enrollment of 83,329. (Data from [http://kpk12.com/cms/wp-content/uploads/EEG\\_KP2011-stateprof-MN.pdf](http://kpk12.com/cms/wp-content/uploads/EEG_KP2011-stateprof-MN.pdf)). The 24 online learning providers certified by the MDE can enroll students from other school districts or charter schools in online courses part time (supplemental providers), or certified comprehensive online providers can enroll students on a full-time basis. The MDE does not have oversight authority for school districts or charter schools that offer online courses on a part time basis to their own resident students, so courses or student counts for those programs are not included in the above numbers.

As part of its audit of K-12 online learning, the Office of the Legislative Auditor conducted a survey of Minnesota school district superintendents and charter school directors and reported that 82 school districts and 5 charter schools offered online courses to approximately 8000 of their students in 2010-2011. Based on results from the same survey, the Office of the Legislative Auditor reported that the number of school districts and charter schools providing online courses to their own students could double over the next three years. (A full copy of the Office of the Legislative Auditor's report can be found at: <http://www.auditor.leg.state.mn.us/ped/pedrep/k12oll.pdf>.) Because this survey was based on district self-report, numbers may not be exact. Additionally, many districts offer "blended" or "hybrid" courses to their enrolled students, providing classes that combine both online and face-to-face instruction.

#### *Higher Education*

The availability of higher education via online and interactive technology enables the delivery of job training and career related education to citizens regardless of the location of the college or the student. Cost effective access to high speed networking by the educational institutions and citizens of Minnesota ensures that the systems are able to deliver education to locations and persons that could not be economically served by traditional classroom delivery. Ideally, network access would be high bandwidth, ubiquitous and of reasonable cost.

The higher education systems in Minnesota have pioneered the delivery of live interactive remote teaching by delivering thousands of higher education courses state wide via classroom-based interactive video. Using this technology, a traditional classroom is geographically extended across the State of Minnesota, with students and faculty interacting using live two-way video conferencing. The use of and investment in high quality, high bandwidth interactive video enables the cost effective delivery of courses to citizens in sparsely populated regions of Minnesota who might otherwise be unable to participate in higher education. Further, the 2011 appropriations bill requires higher education to achieve three of five goals, with one of those goals being to "increase by at least fifteen percent, compared to fiscal year 2010, the full year equivalent enrollment of students taking online or blended courses or the number of online and blended sections"<sup>1</sup> for attainment of one percent of its fiscal year 2013 appropriation.

To support online learning and classroom-based interactive learning, officials from the Minnesota State Colleges and Universities (MNSCU) system indicate that Minnesota public higher education has a goal of providing no less than gigabit Ethernet service to all campuses in Minnesota and strongly supports efforts to enable ubiquitous, competitively priced broadband access to all households in Minnesota. The Minnesota public higher education systems believe that competitively priced broadband access at greater than 10Mbps, either uncapped or with generous bandwidth caps and with local or regional peering, is essential to maintaining an educated, competitive workforce.

As part of their mission or vision statements, both the University of Minnesota and the MNSCU system recognize the importance of broadband to make knowledge, resources and education accessible and available. The University of Minnesota has as one piece of its three part mission statement:

Extend, apply, and exchange knowledge between the University and society by applying scholarly expertise to community problems, by helping organizations and individuals respond to their changing environments, *and by making the knowledge and resources created and preserved at the University accessible to the citizens of the state, the nation, and the world.*

The Minnesota State Colleges and Universities have as a vision statement:

The Minnesota State Colleges and Universities will enable the people of Minnesota to succeed by providing the most *accessible*, highest value education in the nation.

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<sup>1</sup> Laws of Minnesota 2011, 1<sup>st</sup> Special Session, Chapter 5, Article 1, Sec. 4, Subd. 3.

The Task Force recognizes that both private and for-profit colleges and universities occupy an important role in the higher education landscape in Minnesota. The Task Force will review broadband access, adoption and utilization by all higher education institutions in the state as part of its future work.

## Health Care

The two prior broadband task forces have reported on how broadband can be used in the healthcare sector (pp.40-41 of the 2010 report available at

[http://www.connectmn.org/sites/default/files/connected-](http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/mn_broadband_advisory_task_force_report_2010_final.pdf)

[nation/Minnesota/files/broadband\\_report\\_final\\_6nov09.pdf](http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/broadband_report_final_6nov09.pdf) and p. 93 of the

2009 report available at [http://www.connectmn.org/sites/default/files/connected-](http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/broadband_report_final_6nov09.pdf)

[nation/Minnesota/files/broadband\\_report\\_final\\_6nov09.pdf](http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/broadband_report_final_6nov09.pdf)). Rather than repeat what has been covered in those earlier reports, the Task Force would like to provide recently obtained information on health information technology in use by various types of healthcare providers/institutions and then examples of activities in Minnesota where broadband is being used to meet healthcare needs.

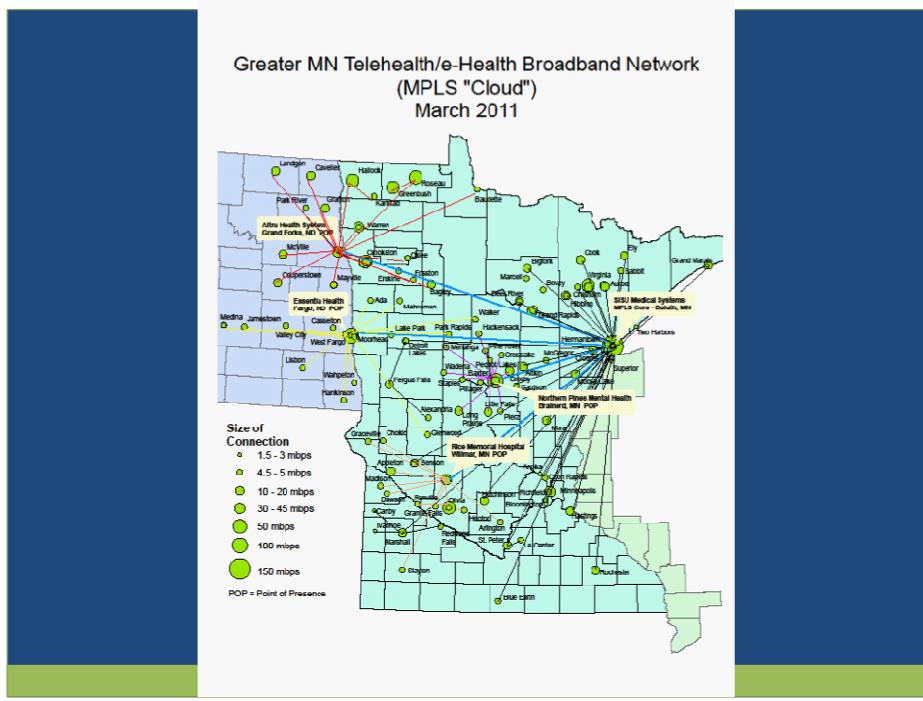
One area in which broadband plays a role for hospitals and clinics is in Electronic Health Records (EHR) and other health information technology. Electronic health records and health information technology have been determined to improve the affordability, accessibility and quality of health care. The Minnesota Department of Health, in partnership with the Minnesota e-Health Initiative, has assessed e-health in a variety of settings. Results released in May 2011 assess the use of electronic health records and the exchange of health information for two categories of health care providers: acute care hospitals (there are 131 in Minnesota) and physician clinics<sup>2</sup> (1285 clinics in Minnesota). Eighty-six percent of hospitals reported a deployed electronic health records system but the functionality varies greatly. When compared to national statistics, Minnesota has a higher percentage of comprehensive (11 percent v. 2 percent) and basic (12 percent to 8 percent) electronic health records systems. For clinics, 67 percent have electronic health records installed in all or some areas of the clinic, 9 percent have purchased or begun installation and the remaining 24 percent have no electronic health records system. Of the 270 clinics without an electronic health record system, 82 percent plan to implement in the next one to three years. Other areas that are measured in the e-Health Initiative are the use of Computerized Provider Order Entry (CPOE), Clinical Decision Support (CDS) and whether health information is being exchanged. Areas planned for measurement include local health department, clinical lab, nursing home and dental clinic health information technology adoption rates; and the number of students enrolled and graduated with health informatics degrees. Complete information on electronic health records and

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<sup>2</sup> Minn. Rules, Ch. 4654.200, Subp. 13. **Physician clinic.** "Physician clinic" means any location where primary or specialty care ambulatory services are provided for a fee by one or more physicians in the state of Minnesota. Physician clinic includes ambulatory surgical centers and hospital-based outpatient locations that provide primary or specialty care ambulatory services for a fee. With the exception of ambulatory surgical centers, multiple clinic locations may be considered a single physician clinic when the multiple locations have common ownership and a majority of common clinical staff working across the multiple locations, and the total clinical staff across all locations is no greater than 20 full-time equivalent employees.

other health information technology measurement is available at [www.health.state.mn.us/e-health/assessment.html](http://www.health.state.mn.us/e-health/assessment.html).

Minnesota is also participating in an FCC Rural Health Care Pilot Project, the Greater Minnesota Telehealth/e-Health Broadband Initiative (GMTBI) for which it received \$5.4 million for construction of a broadband network to support health information exchange and telehealth for rural providers and to connect rural providers to urban providers both regionally and nationally. The participating health care providers paid 15 percent of the cost and the telecommunications vendors were paid the remaining 85 percent of the costs directly by the Universal Service Administrative Corporation (USAC). The network is owned by the telecommunications company vendors and leased by the health care providers. The five health care providers participating are: the North Region Health Alliance (Minnesota and North Dakota), Essentia Health, Medi-Sota (southwest Minnesota), Minnesota Association Community Mental Health Programs and SISU Medical Systems. The application was made in 2007 and the program was recently extended through June 2012. This dedicated rural health care broadband network has improved access to care for rural patients, supports telehealth videoconferencing technology, benefits rural provider recruitment and retention, facilitates health information exchange, keeps patients and revenues in rural communities, supports new business relationships, provides expert assistance in communicating and negotiating with telecommunications carriers, and provides expert assistance in using the USAC program. The network of approximately 131 sites is shown on the map below:



The hope is that the pilot project evolves into a “Minnesota Health Network” with a formally incorporated membership organization with representative governance and a broad statewide advisory

board. There would be tiered membership pricing for managed network services based upon size of facilities and businesses and growth of the network to include additional health care providers (public health agencies, home health, community clinics, long term care, prisons) and all health care providers connected.

Several more localized projects are also being carried out in Minnesota. Two examples are the Southeast Minnesota Beacon Community and Benton County's Living Connected program.

For the Southeast Minnesota Beacon Community, with principal collaborators of Olmsted Medical Clinic, Winona Health, Mayo Clinic and Mayo Health System, the mission is to build a modern health information network. This includes the expanded meaningful use of Electronic Medical Records (EMRs) and the further development of Health Information Exchange (HIE) between participating healthcare organizations. The group was awarded a \$12 million federal Beacon grant last May and is focusing its work on adult type II diabetes and juvenile asthma and developing informatics tools to track these illnesses in the population to ensure optimal treatment. Others that are or will be involved with the project include the public health departments in 11 southeast Minnesota counties and public school districts in the region. Winona Health and its community partners have taken on the additional objectives of extending EMR connections and applications into a community-based telemedicine network that is HIPAA compliant and staged for reimbursable care that can enhance access, improve outcomes, and lower cost.

In Benton County, using a portion of the grant funding it was awarded as a Minnesota Intelligent Rural Communities (MIRC) Initiative of the Blandin Foundation's federal BTOP award, Living Connected in Benton County issued \$16,000 in funding to LA Home Care. With these funds, LA Home Care, using the Grand Care System (a combination of smart home technologies, activities of daily living monitoring, Internet communications and tele-wellness), has installed in five homes the technology to assist seniors to remain in their homes longer. This is achieved by setting up favorite websites for the senior and a scrolling alert/message system and brain bending exercises; enabling caregivers to assess a senior's abilities, monitor activities and employ wellness devices such as a blood pressure device, a weight scale and a pill dispenser all using a wireless device to record results and transmit to a nurse or other health care provider; and providing the ability of family members to upload pictures, send messages, post daily reminders and create calendar appointments for the senior.

## **Energy**

The focus in the energy sector for broadband has been in the deployment of a smart grid. Smart grid can be characterized as the modernization of the electric transmission and distribution system to increase use of digital information and controls technology to improve reliability, security and efficiency of the electric grid; to optimize grid operations and resources; to deploy and integrate distributed resources and generation; to incorporate demand response, demand-side resources and energy-efficient resources; to deploy smart technologies for metering and communications concerning grid operations and status; to integrate "smart" appliances and consumer devices; to deploy and integrate advanced

electricity storage and peak-shaving technologies; to provide consumers timely information and control options; to develop standards for communication and interoperability of appliances and equipment connected to the grid; and to identify and lower barriers to adoption of smart grid technologies, practices and services. Smart grid technology, in short, will allow for smarter and more efficient use of energy by making its supply, transmission and demand more transparent, measured and controlled.

In Minnesota, the Public Utilities Commission has an open proceeding under Docket No. P-999/CI-08-948 requiring an annual filing by April 1<sup>st</sup> of each year to track utilities past, current and planned smart grid projects. These reports are to include a description of the projects, total costs, cost effectiveness, improved reliability, security, system performances and societal benefit.

For purposes of this Task Force's work, the focus on a going forward basis would be to understand the impact and/or inter-relatedness of the broadband facilities in the state and smart grid capabilities being deployed by utilities. Arrowhead Electric Cooperative's fiber to the home network that is under construction will include smart grid energy solutions in Cook County and is one example the Task Force can analyze.

## **Industries and Business**

According to a survey released in May 2011 by Connect MN, 73% of businesses in Minnesota subscribe to broadband ([http://www.connectmn.org/sites/default/files/learn-sidebar-docs/mn\\_bizwhitepaper\\_final.pdf](http://www.connectmn.org/sites/default/files/learn-sidebar-docs/mn_bizwhitepaper_final.pdf)). How these businesses utilize broadband varies from sales and marketing to videoconferencing and telework options for employees. The data presented in the survey yielded interesting results:

- Across Minnesota, 27% of businesses (approximately 41,000) allow employees to telework (or approximately 23% or 14,000 of rural businesses and 30% or 27,000 of non-rural businesses).
- Nearly three out of five businesses in Minnesota (58%, or approximately 88,000 businesses) have a website (51% of rural businesses and 62% of non-rural businesses).
- Approximately 41,000 businesses in Minnesota, including 32% of rural businesses and 24% of non-rural businesses, still do not use broadband technology. Adoption in crucial sectors trails even further – one-third of Minnesota business establishments in the agriculture, mining, construction, and utilities sector do not subscribe to broadband.
- Minnesota businesses that subscribe to broadband and maintain a website reported median annual revenues that are \$500,000 higher than businesses that do not use broadband at all.

The full survey results, available at the link above, shows broadband adoption rates across multiple business/industrial sectors and compares Minnesota to other states across the country.

Expanding high-speed Internet service to rural areas of Minnesota is making an impact on how people live and work. An article for Minnesota Public Radio highlights examples (<http://minnesota.publicradio.org/display/web/2011/03/24/ground-level-broadband-telecommuting-rural-community/>) of broadband impacting rural communities: allowing residents to access jobs not close to their residences, and allowing businesses in those communities to reach a broad customer base that they otherwise would not be able to access.

The Task Force will continue to examine the impact of broadband across multiple sectors of the Minnesota economy – in Greater Minnesota and the Metro Counties – especially looking at the impact on telework, economic competitiveness, and new business opportunities.

## **Libraries**

The 2010 State of Broadband report submitted by the Minnesota Broadband Advisory Task Force included detailed background on the importance of libraries for providing broadband access and support for Minnesota residents and the number of public computers and Internet users served by library region. This Task Force will not repeat that information here but acknowledges that updated information on the public's use of libraries for Internet access and the needs that libraries have to better serve those users is an aspect that needs to be addressed in the Task Force's ongoing work. The following links to the 2010 State of Broadband Report and the information on libraries is found beginning on page 36: [http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/mn\\_broadband\\_advisory\\_task\\_force\\_report\\_2010\\_final.pdf](http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/mn_broadband_advisory_task_force_report_2010_final.pdf)

In 2012, Connect MN will be working closely with the Minnesota's State Librarian, State Library Services and the Minnesota Department of Education to distribute its online survey, incorporate any existing data and reflect this data on the interactive map.

## **Governmental Operations**

### *State Level*

When addressing the use of broadband in Minnesota for government operations, one system that is used at the state and local level is Minnesota's Network for Enterprise Telecommunications or MNET. MNET connects over 1,000 locations and 300 Minnesota cities to provide a "meeting ground" for conducting inter-governmental business among cities, counties, state agencies and education on a secure, reliable and shared routed network. State network connections are provided for all public higher education (MNSCU campuses in 57 cities and the University of Minnesota in 18 cities); all branches of Minnesota government, all state agencies, all state courts systems locations, the Minnesota Legislature and all constitutional offices; all 87 Minnesota counties; over 100 public school districts; many public libraries, the Minnesota Zoo and Historical Society, several private colleges, Minnesota Public Television Stations, many cities and other governmental units. MNET also delivers applications for public safety

and homeland security, public health and human services, learning, and other governmental operations functions.

In order to provide such service across the state, the Office of Enterprise Technology (OET—which runs MNET) partners with a large number of private sector telephone, cable, managed service and equipment providers as well as public sector owners of optical fiber pathways. The resulting infrastructure enables OET to offer a wide variety of fully managed IP network solutions that support customer requirements for bandwidth capacity, reliability and network security. The MNET backbone architecture is comprised of a core network or over 30 hubs interconnected by high capacity circuits. The backbone interconnections range from a minimum of 622 Mbps OC12 circuits to 10 Gbps optical fiber links. While the majority of MNET links are leased from various carriers, MNET also uses state-owned fiber assets along the Interstate 94 corridor from Moorhead to St. Paul and within the Capitol complex in St. Paul.

#### *County Level*

As part of Minnesota's MNET, the State/County Collaboration Program (SCCP), administered by the Office of Enterprise Technology (OET), aggregates the bandwidth needs of local governments, along with the application requirements from the Departments of Public Safety, Corrections, Judicial Branch, Human Services, Secretary of State, DEED, and MNDOT, to support a state-wide data network that reaches into all 87 counties. By the end of FY2012, the hub locations in each county are scheduled to be upgraded to 100Mbps -1Gbps connections. As designed, this program is projected to solve a large number of the bandwidth access problems for local governments in greater Minnesota.

In addition to the applications that are being run by the SCCP state partner agencies, local government driven bandwidth use continues to expand. As with other sectors, governments throughout Minnesota are adopting bandwidth-intensive technologies such as VoIP, cloud computing services, and video conferencing at increasingly rapid rates. Examples of specific applications in the local government pipelines that will impact bandwidth growth include open government efforts to video stream public meetings, the rapidly expanding use of Geographic Information Systems to make property and other location-based information more available to the public, and the use of video conferencing in all its forms to reduce travel costs associated with meetings and educational events.

The taskforce has identified several government-to-citizen application trends that will be monitored as one proxy measure for broadband adoption/application rates at the county government level.

24 counties (28%) have full meeting materials available on-line prior to county board meetings

46 counties (53%) have searchable minutes of public board meetings

13 counties (15%) have video and/or audio of public meetings available online

22 counties (25%) use one or more social media tools to communicate with citizens (Facebook, Twitter, Youtube)

54 counties (62%) have interactive mapping (Geographical Information Systems or GIS) available online

41 counties (47%) provide methods to pay property taxes online

Significant system trends that are emerging now and predicted to have transformational impacts on how Minnesota governments do business and use bandwidth in the future include: service consolidation, county and city collaborations, shared back-office IT systems, remote disaster recovery data replication systems, mobile applications, and teleworking. It is recommended that these trends continue to be monitored for their impact on bandwidth requirements at all levels of government.

While it is predicted that the current round of improvements to the MNET backbone network will make significant progress in addressing government bandwidth access issues throughout the state, there are still several areas that have been highlighted by local governments (December 2011 County Survey) that continue to present real and direct challenges.

*Network Laterals* – Once the 100Mbps or 1Gbps connection is made to each county hub, it needs to be distributed to locations throughout the community to various public sites, not just the terminating facility. When queried about their needs for the preparation of this report, several counties cited the lack of available options or high costs as significant barriers to distributing the connection beyond the initial termination point within their county. These hurdles also apply to the growing trend towards telecommuting as a strategy for conserving resources and emergency preparedness. Many localities throughout the state report that the broadband options available to their employees' homes will not support the use of telecommuting tools.

*Resiliency* – As many of the tools needed to make government run smoothly continue to migrate to remotely-hosted models, whether that be cloud-based, SaaS, or simply a shared system between several entities within a region, the need for resilient, redundant, fail-over paths grows in its importance to maintaining reliable government connectivity throughout Minnesota.

*Mobility* – The lack of wireless mobile data access in many parts of the state has prevented the adoption of applications ranging from public safety in-squad information systems, to Human Services in-home assessment tools, to field-based applications that save time and money for local property assessment workers.

*Cost* – While the State's unified MNET network infrastructure addresses many of the connectivity problems for government operations, it is not a panacea. When asked as part of the preparation of this report, some government entities throughout the state cited cost as a continuing barrier to organization-wide adoption. Some also cited the lack of options made available to them for connecting to state applications as an unnecessary barrier that keeps their local costs too high.

*Security* – The benefits of having Minnesota governments all connected using a single broadband network are many; however, a network's security is only as strong as its weakest link. Minnesota governments at all levels report inadequate resources to properly maintain the necessary systems to keep this network secure (MNCITLA Annual Conference, July, 2011).

#### *Municipal Level*

At the municipal level, there are approximately 45 governmental units (more information is available at [www.logis.org](http://www.logis.org)) that have formed "LOGIS" (Local Government Information Systems) for the purpose of

sharing applications and server farms. As an example, the City of Eagan through LOGIS uses approximately 10-15MB of bandwidth on average. There are spikes during times of the day when usage for Eagan can be as high as 100MB. The bandwidth capability from the City of Eagan to LOGIS is currently 1GB on the primary connection and 30MB on a backup connection (from Comcast). Once the City of Eagan's traffic gets to LOGIS, all traffic from all LOGIS participating members goes through the same pipe out to the state of Minnesota for Internet access, police data, fire data, etc. The City of Eagan's IT Department expects that bandwidth needs may grow by 30-50 percent in the future as more and more data, voice and video transmissions (VoIP, video conferencing, etc.), connecting remote local area networks, and cloud applications become the norm in business environments.

### *Public Safety*

Public Safety's use of broadband encompasses needs for both wireline and wireless based broadband. On the wireline side, the state's MNET system is moving to deliver a minimum 100Mbps connection to each county within the next six months. While the additional speed is important for today's needs, in response to a Minnesota Department of Public Safety (DPS) query, counties did note immediate concerns with system redundancy and the need for additional fiber infrastructure to support a wireless broadband network. The need for every citizen to have access to broadband was also noted for the development of a robust public safety network that can enable public notifications for large scale events such as a pandemic outbreak or a significant weather occurrence.

The State of Minnesota, recognizing the increasing uses of and need for wireless broadband, has convened a "Public Safety Wireless Data Network Requirement Project" that is currently looking at the public safety sector's needs for a wireless data network. While the report has not been finalized, the core operational need among those surveyed is the availability of service, including network reliability, availability of throughput and the data coverage area. There were concerns expressed as to whether 95 percent coverage county by county was needed or 95 percent overall statewide coverage. Other network coverage issues included whether public safety had priority access to the wireless service and whether coverage was available inside buildings. The report also discusses that the capacity of the network must be adequate for user needs at a major incident. It was recognized that public safety applications will also develop over time as technology becomes reliable and funding is available. The devices used by public safety personnel was also addressed in the report and include smart phones, USB and PC Card modems that plug into laptop computers, and modems embedded into laptops. New public safety devices requiring embedded modems were also identified, including ePCR (Electronic Patient Care Reporting for biometric life signs) and offender tracking bracelets. For agencies that already use wireless services, the projection is for an increase of 25 percent in the overall number of devices. Security was also determined to be a requirement by all stakeholders. Finally, the network has to be able to accommodate a variety of applications, which are similar across regions but do vary by quantity of users (more in urban areas, fewer in rural areas).

Wireless data services will play an ever important role in the work done by public safety personnel. The public safety community desires a comprehensive wireless data solution. While commercial providers would be a natural partner to provide public safety broadband services, the DPS draft report concludes that their service does not meet all of the requirements of public safety, including the extent of statewide coverage required, frequent congestion when the networks are needed the most (and the commercial carriers are already challenged to meet their own growth needs given the tremendous increase by the public in the use of wireless data services), and network availability (carriers claim 99.5 percent availability and public safety desires a minimum of 99.999 percent availability).

In addition to the joint state and local project, there is also legislation ("Jumpstarting Opportunity with Broadband Spectrum Act of 2011" and "Wireless Innovation and Public Safety Act of 2011" in the U.S. House and S.28, the "Public Safety Spectrum and Wireless Innovation Act" in the U.S. Senate) being discussed at the federal level that would provide direction for spectrum use and funding to build out a nationwide public safety network.

The Task Force plans to continue to track the work of broadband in the public safety sector as the final report of the Public Safety Wireless Data Network Requirements Project is issued and decisions are made on the results of the project, any passage of legislation at the federal level and to further develop the input of counties on public safety and other needs.

From this high level look at the use of broadband for government purposes, it is clear that the task force needs to obtain a better understanding of how broadband is provided and used at all levels of government and what the needs are and how those needs can be most efficiently and effectively addressed.

## **Other Key Economic Sectors: The Arts and Tourism**

The arts communities and museums play a key role in the economic and social fabric of Minnesota and the use of broadband technology has enabled museums across the state to reach residents, classrooms and potential visitors. Whether it is the Walker Art Gallery providing online access to their collections and recent exhibits, the Minnesota History Museum's History Live<sup>3</sup> program that lets museum educators

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<sup>3</sup> The awardwinning History Live program, formerly called Interactive Video Conferencing or IVC, is creating new history lessons to deliver via video conferencing technology. History Live staff will also continue building a state and nationwide audience for these unique, high-energy history programs. New History Live programs will focus on the fur trade, Dred and Harriet Scott, Dakota history, the Civilian Conservation Corps in Minnesota and the year 1968. History Live staff will also begin developing a way to deliver History Day training and support to students and teachers. History Live educators at the Minnesota History Center beam in-depth, interactive history programs into classrooms across the state and country.

interact with classrooms across the state via video conferencing, or the Minnesota Digital Library that is partially funded with Legacy dollars and enabling county and local historical societies to make their unique collections accessible to users everywhere, broadband technology can make arts and history more accessible to all and thus a strong broadband network is required. Although there is no apparent ready resource for measuring the full scope of the impact of broadband on museums across the state, evidence makes clear that these institutions are making varying use of the technology. Examples include:

- The Walker Museum's online collection: <http://www.walkerart.org/>
- The Minnesota History Museum: <http://www.minnesotahistorycenter.org/>
- The Minnesota Children's Museum: <http://www.mcm.org/>

There are many more examples, including the public-private partnership of the City of Minneapolis and Minnesota Public Radio in providing a wireless "audio tour" of public art in the city. In addition, the ability of smaller galleries to utilize the Internet to announce upcoming shows, preview works for sale and do business online fosters economic opportunity for the artists and business owners, as well as contributing to the reputation the state has built as a hub of the arts. In addition, the ability of Minnesotans across the state to access these facilities and citizens around the world to have access to Minnesota arts, museums and cultural attractions is a social and economic benefit for the state. The Task Force will do more research related to the utilization and impact of broadband technology on the arts community in Minnesota.

Tourism in Minnesota is a key segment of the economy. According to Explore Minnesota, in 2009 (latest data set available: [http://industry.exploremn.com/wp-content/uploads/2011/01/Tourism\\_and\\_Economy\\_2011\\_edition\\_2-7-11.pdf](http://industry.exploremn.com/wp-content/uploads/2011/01/Tourism_and_Economy_2011_edition_2-7-11.pdf)), tourism accounted for 238,000 full- and part-time jobs, about 11% of the state's total private sector employment. Minnesota tourism destinations from rural lake resorts to urban sites such as the Mall of America utilize broadband in a variety of manners, including: advertising and marketing, providing guests' access to the Internet and email, and reservation and sales. As a greater segment of the population expects to be connected at all times in all locations, ensuring broadband is available to visitors (especially in Greater Minnesota tourism destinations) is a key component to ensuring Minnesota remains competitive for tourism and leisure dollars. The Task Force will work with representatives from Minnesota tourism and leisure industries to gain a more complete knowledge of how broadband is impacting these important economic sectors of Minnesota's economy.

### **Section 3: Internet Literacy**

The National Broadband Plan (Plan) identified three elements that all Americans must have in order to achieve universal broadband adoption. The first two elements are accessibility and affordability. The third element, and the topic for this section, is the opportunity to develop digital literacy skills. Digital literacy skills are necessary to effectively use information and communication technologies. The FCC Plan's recommended course of action relies on the creation of a National Digital Literacy Program that would have a Digital Literacy Corps to increase the capacity of digital literacy partners and create an Online Digital Literacy Portal. The Plan also supports identifying the barriers to adoption, increasing the relevance of content, national outreach and awareness, increased federal support for regional capacity building efforts to improve deployment and adoption, third party evaluation of broadband adoption programs, and a clearinghouse to promote best practices and information sharing.

The recently announced federal “Digital Connections” program, discussed below under opportunities to coordinate with federal, state and local agencies, is an FCC initiative to move forward on implementing one of the goals in the National Broadband Plan.

Within Minnesota, there are significant grass roots efforts aimed at increasing broadband adoption. The Task Force will touch upon those efforts here but will include further investigation as part of its ongoing work.

The Technology Literacy Collaborative (TLC) is a network of digital inclusion supporters that are committed to sharing best practices, providing or advocating for technology literacy skills and access, and promoting collaborative efforts. Information regarding TLC can be found at [www.tlc-mn.org](http://www.tlc-mn.org). The group meets regularly to discuss trends, events, resources and partnerships. Participants in the Collaborative include the former ADC Foundation, Casa de Esperanza, CommonBond, Community Technology Empowerment Project (CTEP), Dakota County Libraries, Digital Divide Initiative (University of Minnesota), Eco Education, Emerge, Hennepin County Libraries, Hope Communities, Intermedia Arts, MN Computers for Schools, MN State Library Services, MN Workforce Center, Neighborhood Development Center, Payne-Lake Community Partners, PCs for People, Pillsbury United Communities, Powderhorn Park/Minneapolis Parks and Recreation, Project for Pride in Living, Resource Inc./Employment Action Center, Science Museum of Minnesota, SPNN, St. Paul Public Libraries, Twin Cities Housing Development Corp., Twin Cities Open Circuit, University of St. Thomas, Wilder, YWCA of St. Paul and various community members and digital inclusion advocates.

A sampling of the various digital inclusion efforts includes:

The Minnesota Literacy Council serves as the fiscal agent and receives management assistance from the St. Paul Community Literacy Consortium for the Minnesota portion of the BTOP grant awarded to Portland State University. Other Minnesota partners include Minnesota Workforce Centers in Ramsey County, Minneapolis South, Mankato and New Ulm, Minneapolis ABE, McDonough Public Housing (St. Paul) and Project for Pride in Living. The project will increase broadband use by implementing "Learner Web". See

<http://www.mnliteracy.org/services/learner-web>.

The Blandin Foundation Minnesota Intelligent Rural Communities (MIRC) Project, also a BTOP funded project, has as a purpose to increase digital literacy and broadband adoption in greater Minnesota. Partners in this grant include Minnesota State Colleges and Universities (MNSCU); Minnesota Renewable Energy Marketplace; the University of Minnesota Extension Services for education, training and technical assistance to small businesses; and the Minnesota Department of Employment and Economic Development. See [www.blandinfoundation.org](http://www.blandinfoundation.org).

The Minneapolis Foundation/City of Minneapolis have a Digital Inclusion Fund to increase technology and skills among non-traditional users of technology in Minneapolis. The fund is part of the Community Benefits Agreement between the City of Minneapolis and wireless provider U.S. Internet. See <https://digitalinclusionfund.tmfportal.org>

The AmeriCorps Community Technology Empowerment Project (CTEP) members help youth and adults use technology to better access social, civic, educational and economic opportunities. The program has placed about 25 AmeriCorps members in libraries and nonprofits each year. See <http://wip.technologypower.org/>

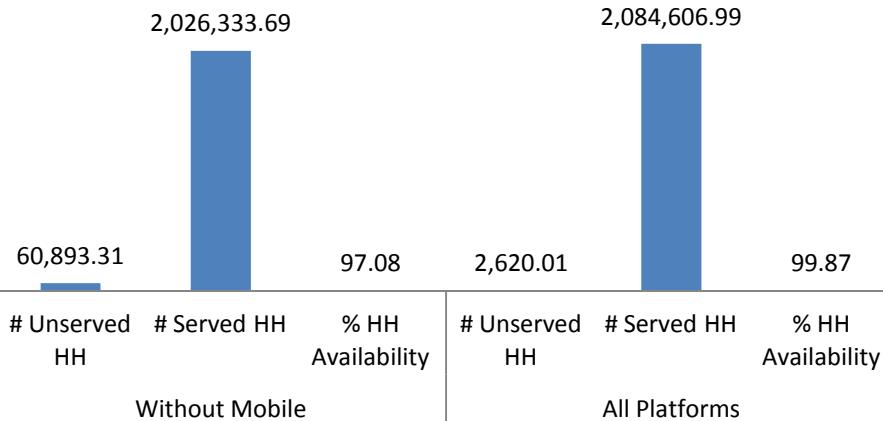
The Technology Literacy Collaborative maintains a listing of public computing centers on its website at <http://tlc-mn.org/ctc>

## Section 4: Broadband Accessibility

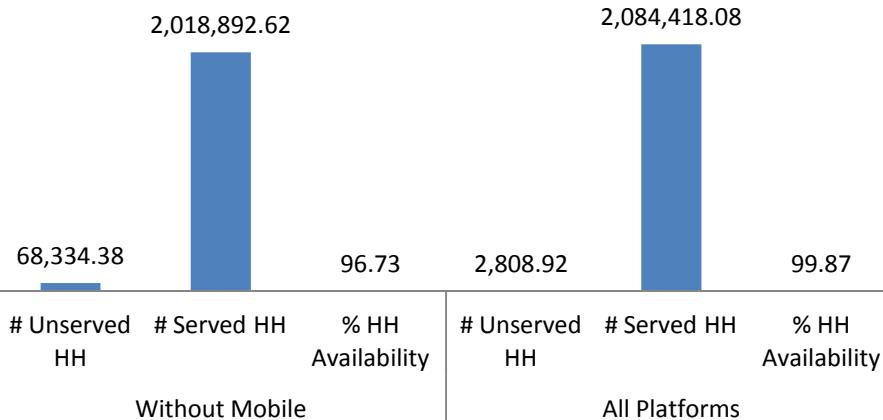
Recent analysis of 2010 Census Household data and Connect MN broadband availability data provide the following graphic information related to broadband availability in the state according to speed tier. More detailed data are available on the Connect MN website: <http://www.connectmn.org/planning>

It is important to note that the latest data released has two main differences with previously released availability data from Connect MN: 1) the estimates were created with the new 2010 Census data, which showed an increase of over 190,000 households in Minnesota; and, 2) Much of the availability data released today utilizes a minimum upload speed threshold of 1.5 Mbps, whereas prior releases utilized 200 Kbps upload speeds. The data is based on advertised speed availability as submitted by Minnesota broadband providers.

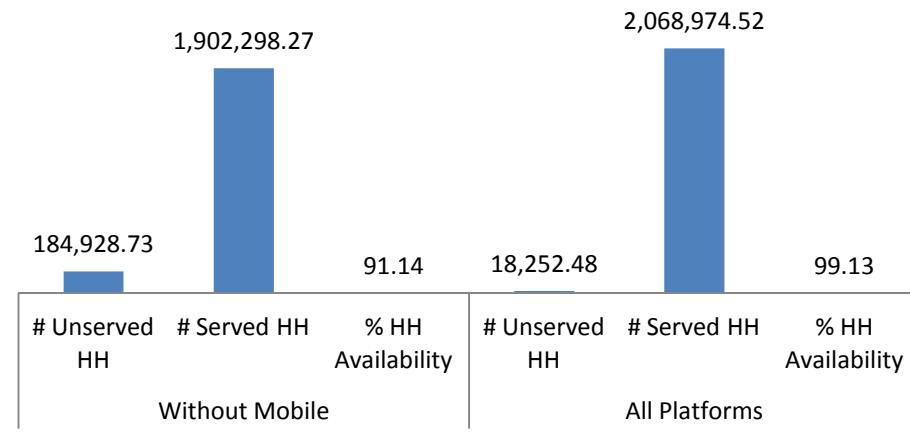
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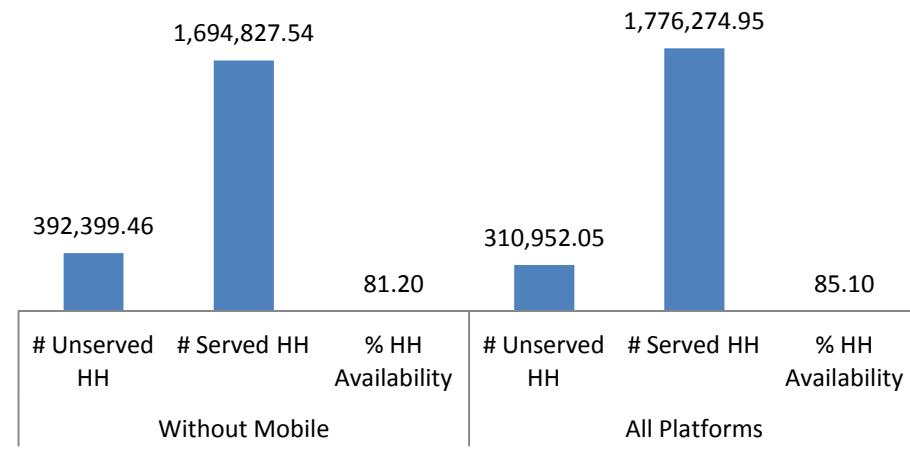
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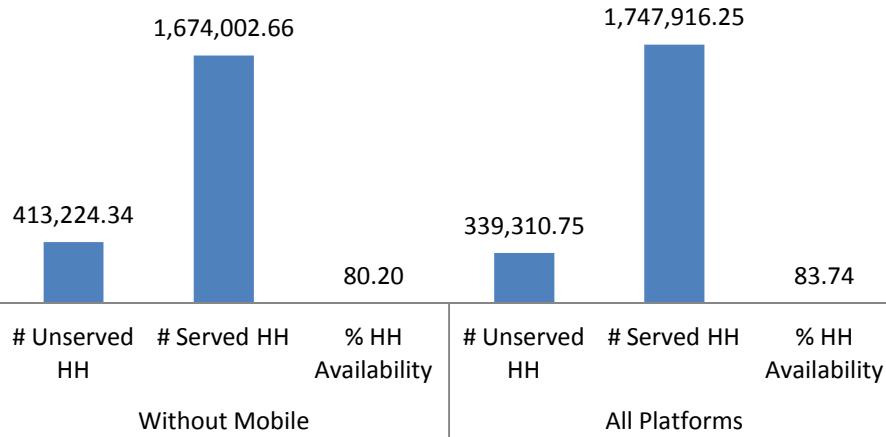
**Availability of Broadband Service of at Least 3 Mbps  
Download/768 Upload**



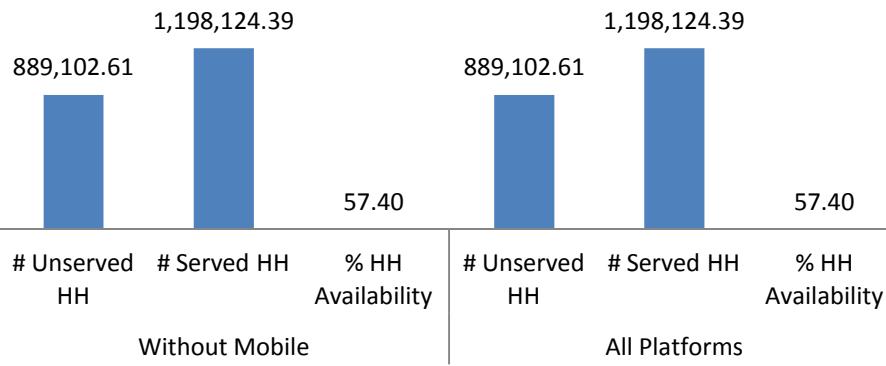
**Availability of Broadband Service of at Least 6 Mbps  
Download/1.5 Mbps Upload**



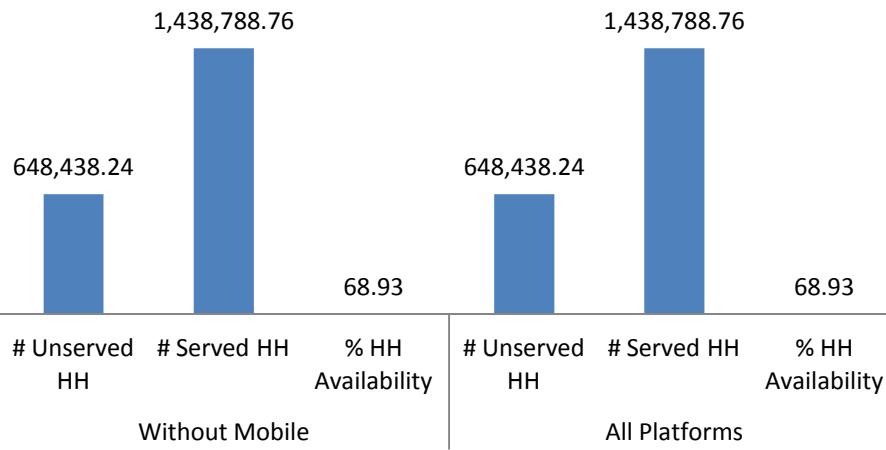
**Availability of Broadband Service of at Least 10 Mbps  
Download/1.5 Mbps Upload**



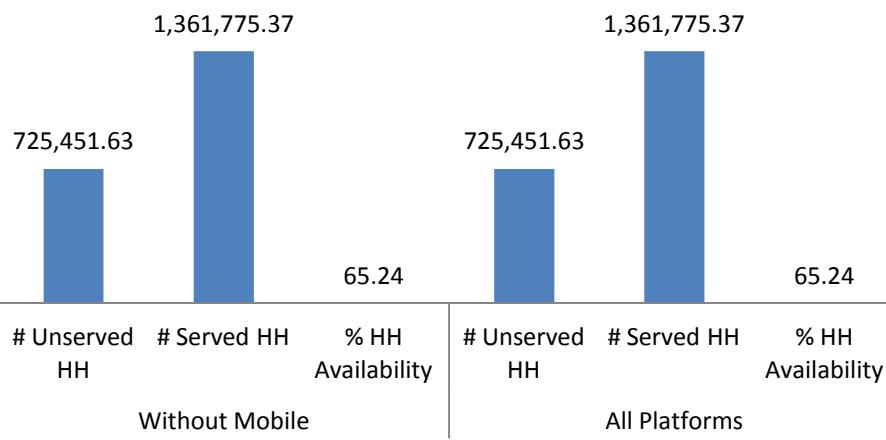
**(Statute 237.012 State Broadband Speed goal of 10 Mbps  
Download/5 Mbps Upload)**  
**Availability of Broadband Service of at Least 10 Mbps Download/6  
Mbps Upload**



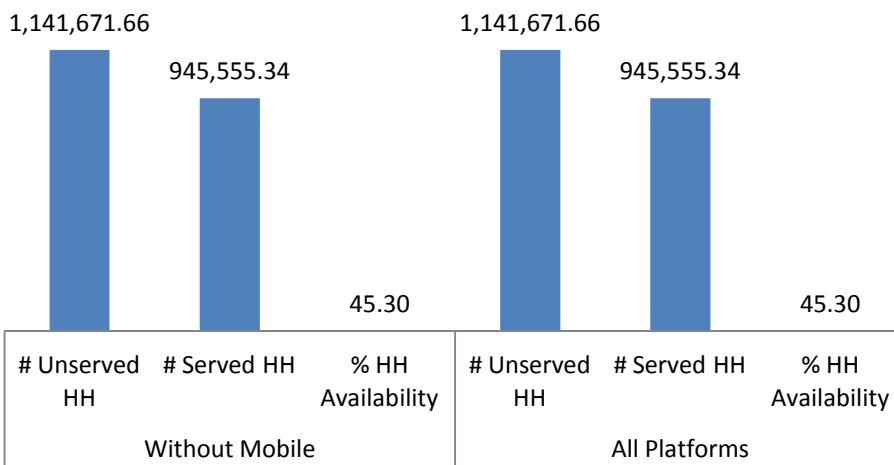
**Availability of Broadband Service of at Least 25 Mbps  
Download/1.5 Mbps Upload**



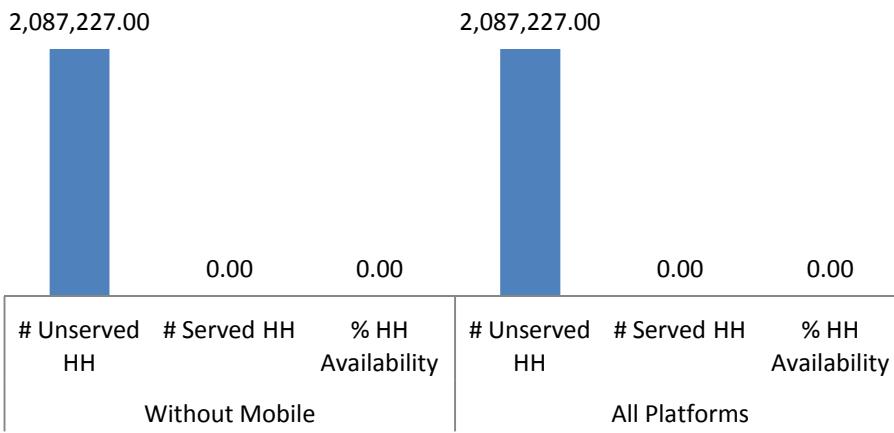
**Availability of Broadband Service of at Least 50 Mbps  
Download/1.5 Mbps Upload**



**Availability of Broadband Service of at Least 100 Mbps  
Download/1.5 Mbps Upload**



**Availability of Broadband Service of at Least 1 Gbps  
Download/1.5 Mbps Upload**



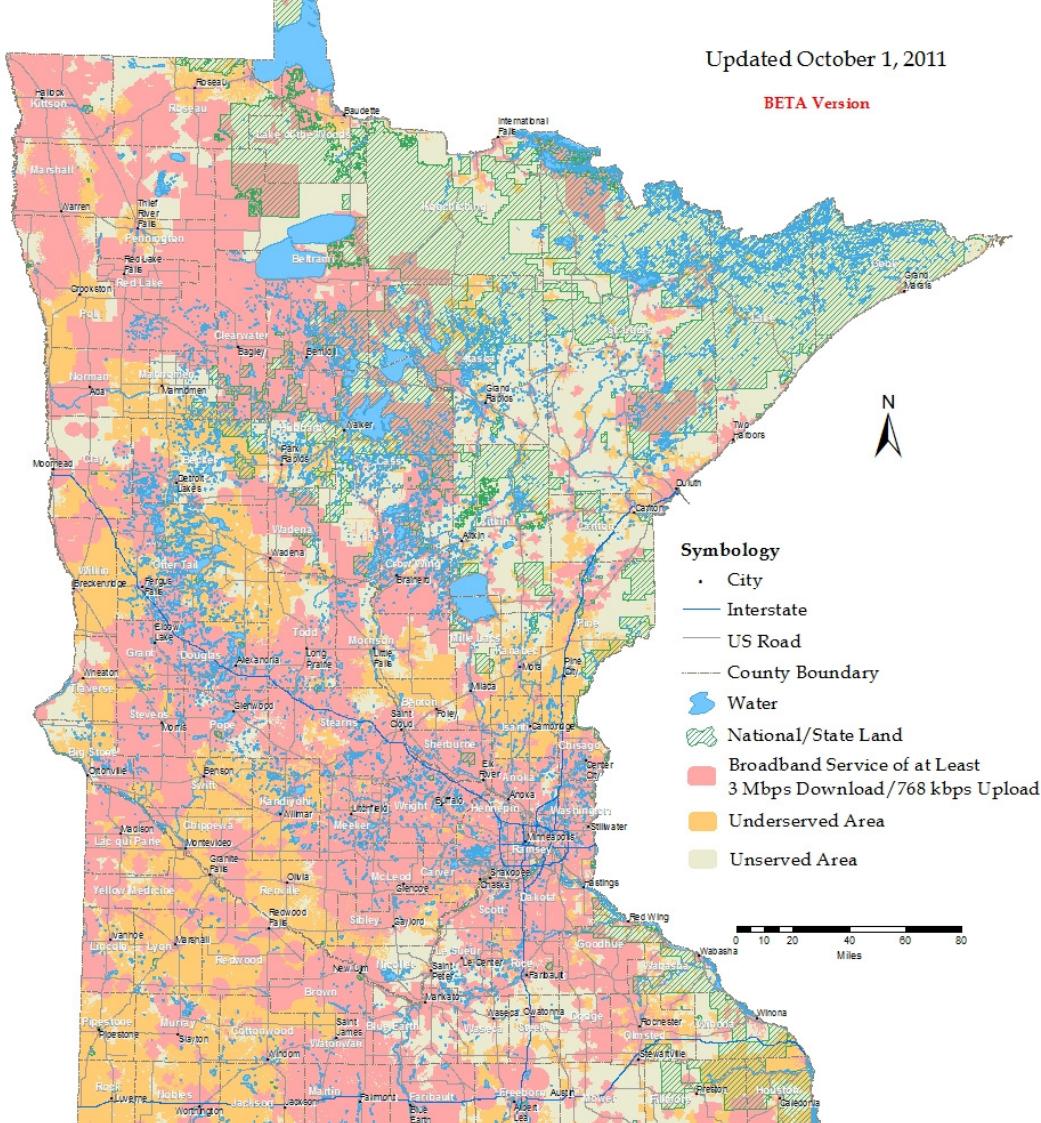
The following map details underserved areas of Minnesota (as defined by speeds under 3 Mbps download speed):

  
**Underserved Broadband Service Inventory for the State of Minnesota by Terrestrial, Non-Mobile Broadband Service**

Submit questions or recommended changes to: [maps@connectmn.org](mailto:maps@connectmn.org)

Updated October 1, 2011

BETA Version



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.

Underserved areas are those where broadband speeds of at least 768 kbps download/200 kbps upload are advertised, but do not exceed 3 Mbps download/768 kbps upload.

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.

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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](http://www.connectmn.org).

## Section 5: Progress of the Federal ARRA Broadband Projects and Mapping in Minnesota

American Recovery and Reinvestment Act (ARRA) funding for broadband awarded in 2009 and 2010 for projects impacting Minnesota totaled more than \$238 million. That figure does not include at least \$25 million of private or in-kind contributions to complete these projects. Several multi-state grants affecting Minnesota were also awarded. The table below provides a summary of the progress in implementing these projects.

<b>Grantee</b>	<b>Amount</b>	<b>Description</b>	<b>2011-2012 Update</b>
<b>Infrastructure Projects:</b>			
<b>Arvig Telephone Company</b>	\$5,048,168	Bring high speed DSL service to unserved establishments within its rural service territory in Crow Wing County, MN.	The staking is complete, and staff is working on the necessary environmental reports and permits, etc. The actual build will commence in 2012.
<b>Carver County</b>	\$6,000,000	Affordable middle mile broadband service in south central Minnesota to connect schools, libraries, and community colleges.	Project has started. Approximately 75 miles of conduit construction is done. This is a middle mile project and the plan is to complete the project and light up fiber by end of 2012.
<b>Southwest Minnesota Broadband Service (SMBS)</b>	\$12,800,000	SMBS will build FTTP (Fiber to the Premise) infrastructure to eight rural communities in Southwestern Minnesota.	SMBS is six months ahead of schedule with their fiber build in Heron Lake, Round Lake, Bingham Lake, Okabena and Lakefield and have gotten 1200 homes connected before the winter freeze. Testing is completed and the first customers turned up the week of December 19, 2011. Customers will continue to be added throughout the winter. The SMBS 125-mile fiber ring has had an economic impact on the area with up to 70 people doing installations at peak times; that number is expected to decrease to 30 once the ground freezes. The second half of the project will begin construction in 2012 as soon as weather allows and is scheduled to be completed before the end of the year.

<b>Enventis Telecom</b>	\$16,822,437	The Greater Minnesota Broadband Collaborative project is a Comprehensive Community Infrastructure (CCI) category, middle mile project to build a high-capacity Ethernet fiber network directly connecting anchor institutions throughout Minnesota, including health care facilities, educational institutions, libraries, public safety offices and state courts.	Construction began in July 2011 and as of December 1, 2011, Enventis has completed approximately 171 miles of duct placement and drawn down more than \$4.6M of Federal funds. Project plans for 2012 include continuation of the long haul construction and network extension to customer laterals. Enventis' anticipated completion date is June 2013.
<b>Farmers Mutual Telephone Company</b>	\$9,652,956	Bring FTTP technology to Lac qui Parle County.	After delays caused by the fiber shortage and unexpected red tape issues, construction began near the end of October 2011 and several blocks of duct were plowed, handholes set and drops plowed to subscribers. Nearly \$1.9M of Federal Funds have been requested. Construction will resume in the spring of 2012.
<b>Federated Telephone Cooperative</b>	\$1,300,000	Build a FTTP system to deploy voice, video, and data services to rural Appleton, Minnesota.	Due to unavailability of fiber, construction has not been started yet, but \$55,000 of Federal Funds have been requested for the engineering expense. Construction will be done in 2012.
<b>Federated Telephone Cooperative</b>	\$2,987,000	Bring a FTTP voice, video, and data network to the Rural Morris, Minnesota exchange.	Construction began August 29, 2011, and as of December 2011 a total of 163 miles of fiber and duct has been placed with 311 drops plowed. Drawdown of Federal Funds totaling \$628,000 to date. Construction will resume in the spring of 2012.
<b>Halstad Telephone Company</b>	\$6,555,000	Install FTTP to 1,069 underserved locations in 5 towns and surrounding rural/farm areas in Norman and Polk Counties in Minnesota	Halstad Telephone won 3 ARRA awards and has completed two projects in ND, giving Halstad 2 of the 6 completed projects in the entire United States. Work on the Minnesota portion was begun in July 2011, and will result in 350 miles of new fiber in their rural service

			area.
<b>Minnesota Valley Television Improvement Corporation (MVTv)</b>	\$1,125,552	Continue building out its broadband internet network to unserved and underserved areas of west central and south central Minnesota.	As of November 2011, MVTv has completed all designated tower and backhaul construction as defined in its ARRA project. Eleven backhaul upgrades were completed during June thru August of 2010. Its 34 <sup>th</sup> tower build was completed in October of this year. MVTv has also completed more than 20% of its committed customer site installations. Customer monthly installs continue to increase meeting MVTv's defined objectives and milestones. MVTv will complete its project within the stipulated timeframe and budget. MVTv has completed its 4 <sup>th</sup> request for reimbursement expending 70% of its designated ARRA award.
<b>Northeast Service Cooperative</b>	\$43,498,220	The Northeast Service Cooperative, in partnership with state and local agencies, schools and health care organizations, will implement a middle mile project to make dark fiber, wavelength services available to private sector providers in rural areas of northeast Minnesota.	<p>Project includes 915 miles of underground fiber to 8 counties, 38 communities, 85 townships, 3 reservations. Critical institution connectivity increased from a projected 212 to 640 sites due to requested demand. Critical institution connectivity in the project is a minimum of 1Gbps with support for up to 100Gbps and wavelength (future design support for up to 400Gbps) service availability.</p> <p>Current construction status is as follows;</p> <p>2011 - Initial Middle Mile construction of 415 miles of outer ring construction is nearing completion. This includes additional community rings located in Duluth, Cloquet, Ely, Hibbing and Virginia. 25 communities will be connected this year with the balance in 2012. Outside plant construction will cease by December</p>

		<p>15th. Construction of the Optical Transport Network transmission facilities will be slowing during the holidays after which it will continue with all facilities coming fully online by the end of February into early March. Up to 160 critical institution sites connected to the ring starting around March of 2012. Current year spending equals ~\$24M.</p> <p>2012 - Currently preparing for submission of environmental and Army Corp applications with plan to start new phases of construction in the spring of 2012. This will include connecting the north shore linear routes to Grand Portage, McGregor and International Falls. Additional ring development from Virginia to Duluth and Cloquet to Duluth. Large scale installations of the balance of the critical institutions will occur. Another ~400 miles of fiber installation is projected.</p> <p>Anticipate the ARRA Broadband project will be completed and closed at the end of the 2012 construction season or Q1 of 2013, in advance of the 2015 extended deadline.</p>	
<b>Sjoberg's, Inc.</b>	\$866,000	FTTP in Roseau, Thief River Falls, and the hamlet of Fox, approximately 656 people stand to benefit, as do roughly 15 businesses and 3 community institutions.	Sjoberg's has completed both the environmental requirements and all engineering work. They are now seeking construction bids.
<b>Wikstrom Telephone Company, Incorporated</b>	\$7,398,600	Deploy FTTP in 6 communities in Kittson, Marshall and Roseau Counties.	The project includes upgrading the backbone fiber network in 16 of the rural telephone exchanges that Wikstrom serves, extending coverage to an un-served area of 182 sq. miles with 723 customers and provisioning a Fiber to the Node ADSL2+ network for 2755 customers that will provide speeds up to 48mbps.

			Other key components of this broadband upgrade are the installation of 74 miles of fiber optic cables and an upgrade of the microwave service to the NW Angle/Angle Inlet community and the fiber optic network to serve the islands in the northernmost part of the contiguous USA, of which most of the land mass is Red Lake nation reservation. Also included is an extension of fiber optic cables to serve the Agassiz National Wildlife Refuge in cooperation with their ARRA funding for upgrades to their facilities. GPON 2.4gbs Fiber to the Home (FTTH) system, with the installation of 414 miles of fiber optic cables, to 1163 homes or businesses, in the rural areas of Greenbush and Karlstad, and the small cities of Lake Bronson, Lancaster, Kennedy and Stephen, MN. The work in 2011 included completion of the digital microwave to the NW Angle (\$210,000), installation of the 10gbs Gpon and IP router network (\$2.1 million) and 96 fiber miles constructed with 27 miles of fiber for drops to 450 homes (\$1.4 million). In 2012 the project will construct the FTTP network to 810 homes on 350 miles of fiber cable (\$3.5 million).
<b>Winnebago Cooperative Telecom Association</b>	\$3,100,000  *Winnebago received \$19.6 million but only 16% will go MN	Expand the existing portions of its fiber network by providing FTTP to rural portions of about 21 communities in Iowa and Minnesota.	Construction did not begin until August 2011 due to government regulatory and environmental permitting delays. Construction of the project is 80-90% complete and should be 100% complete in summer 2012. Customer conversions will follow.
<b>Woodstock Telephone Co Inc.</b>	\$15,184,424	Expand its fiber network into neighboring rural communities by providing FTTP in 15 communities located within 3 counties in Southwest Minnesota.	No update available.
<b>Zayo Bandwidth, LLC</b>	\$13,382,593	The Connect Anoka County Community Broadband Network will make high-speed broadband services available to governments, businesses, community anchor institutions, and local Internet service providers in Anoka County and parts of Isanti and Ramsey	The Connect Anoka County project will connect 145 anchor institutions with three core rings, creating a 286 mile fiber optic backbone. The backbone will connect police, fire, public works, libraries, K-12 schools, colleges, city and town halls and county

		Counties	<p>buildings. This network will provide a direct advantage to local businesses by passing directly through the county's key business districts and economic development zones. The groundbreaking event was held September 13, 2011, and as of the first week in December, 11,403 feet of conduit and 7600 feet of fiber have been installed.</p>
<b>Lake County</b>	\$66,369,064	Lake County plans to offer FTTP advanced voice, video and data services to every home and business in Lake and eastern Saint Louis Counties.	<p>The Lake County Project is a "Last Mile" project and covers Lake County and the eastern parts of St. Louis County. In total there are 7 cities, 12 townships, and unorganized territories in both counties that will be served. Over 2000 miles of fiber will be installed consisting of 65% aerial and 35% buried plant. Engineering has been working on network design and layout since June of 2011. Construction will most likely happen in three phases with phase one consisting of aerial construction in Two Harbors, Ely, Silver Bay, and Beaver Bay starting in first quarter of 2012. Second phase will consist of aerial and buried construction completing the ring and connecting the cities together in third quarter of 2012. Phase three will consist of constructing any spurs off of the ring and most likely occur late 2013. Construction is anticipated to be completed in the second half of 2014. Lake County has named the Project "Lake Connections" and any additional info can be found on the website <a href="http://www.lakeconnections.com">www.lakeconnections.com</a></p>
<b>Arrowhead Electric Cooperative, Inc.</b>	\$16,137,484	Arrowhead Electric Cooperative, Inc. will build a last-mile FTTH network to serve northeastern Cook County. Because of the topography of the land and	Engineering/Design completed. Construction began August 2011. Aerial will re-start in March and underground will begin in April 2012 (both weather

		dense forestation, fixed wireless is not an option.	permitting). Currently underground work is finished for 2011 and aerial work will continue until Christmas. Approximately 100 miles of transport and distribution were completed in 2011. No federal dollars have been spent – awaiting first RUS distribution which is expected prior to end of 2011. Plans for 2012 include completing the FTTH build and beginning to offer services in Spring/Summer 2012. The projected completion date is 12/31/2012.
<b>Red River Rural Telephone Association, Inc.</b>	\$360,000  *RRRT received \$9 million but only 4% will go to MN	Red River Rural Telephone Association will install 690 route miles of fiber-optic cable to serve six rural exchanges in Ransom, Richland, and Sargent Counties in North Dakota as well as Wilkin County in Minnesota, and Roberts and Marshall Counties in South Dakota.	There was no stimulus work done in MN in 2011. The vast majority of the project is in ND and construction began there in August. RRRT anticipates completion of the MN portion of the project in 2012.
<b>18 Projects</b>	<b>\$228,592,061</b>		
<b>Grantee</b>	<b>Amount</b>	<b>Description</b>	
<b>Public Computer Center Projects:</b>			
<b>Leech Lake Reservation Business Committee</b>	\$1,722,371	Create seven new public computer centers and upgrade 10 existing facilities on three Ojibwe and Chippewa Indian reservations in Minnesota. They will provide training and support to youth, parents and small businesses.	Money returned to NTIA due to change in tribal leadership and discontinuation of the project.

<b>Regents of the University of Minnesota</b>	\$2,862,333	Establish one new public computer center and improve 10 existing computer centers in Minneapolis and St Paul. They will offer computer and workforce training to vulnerable populations, including African-Americans and Hmong and Somali immigrants.	2 new and 9 upgraded public computer centers are operational, 142 workstations averaging 877 users per week. As of the end of the 3 <sup>rd</sup> quarter of 2011, there have been 11,408 visits, 2497 hours of training and the first cohort of apprentices has been run with the second to begin by the end of the year. Estimate the project is 53% complete to target with 2 years remaining in the grant period.
<b>Broadband Adoption Programs:</b>			
<b>C.K. Blandin Foundation</b>	\$4,858,219	Blandin Foundation and partners will bring a network of resources and support to rural Minnesota individuals and communities - especially those unemployed and seeking employment, small businesses, coalitions of government entities, and local leaders.	<p>\$3,127,992 of federal funds spent to date.</p> <p>Blandin Foundation and partners are at full speed implementing sustainable broadband adoption programs in greater Minnesota – through 5 statewide partners, ten regional entities and 11 demonstration communities (with uncounted local partners).</p> <p>Highlights include:</p> <ul style="list-style-type: none"> <li>*The University of Minnesota Extension Service is offering a growing menu of classes (8 courses now available) for small and medium size businesses around e-commerce topics, including mobile devices and web sites, with an emphasis on improving community technology vitality.</li> <li>*PC's for People has collected, refurbished and distributed almost 1,000 computers to low-income families in greater Minnesota; at least three communities have created or in process of creating local efforts – Brainerd, Willmar and Thief River Falls.</li> <li>*DEED Workforce Centers and Adult Basic Education have created a sustainable model for incorporating</li> </ul>

			<p>standardized digital literacy training across greater Minnesota.</p> <p>*MN Renewable Energy Marketplace is conducting business technology training within their niche, increasingly interconnected to the MES business training.</p> <p>*MNSCU has created and is offering a hybrid online-in class experience that incorporates existing online career tools.</p> <p>Eleven demonstration communities have each allocated \$100,000 (\$1,100,000 total) to more than 70 local projects around digital literacy, broadband adoption, and increased sophistication of use while using the Intelligent Community approach to determine priorities and guide project development.</p> <p>2012 will see continued implementation of training by all partners, completion of projects by demonstration communities and efforts to ensure sustainability of all activities. Several state partners are moving to provide enhanced offerings to more communities.</p>
<b>3 Projects</b>	<b>\$9,442,923</b>	.	
<b>Grantee</b>	<b>Amount</b>	<b>Description</b>	
<b>Multi-State Projects with a presence in Minnesota</b>			
<b>Communication Service for</b>	\$14,988,657	Discounted broadband services and specialized computers, online technology training, public access	The main goal of CSD's Project Endeavor is to promote broadband access to deaf, deafblind and

<b>the Deaf, Inc. (CSD)</b>		<p>to videophones at anchor institutions for the deaf and hearing impaired community. The project is based in South Dakota.</p>	<p>hard of hearing (d/hh) individuals by providing equipment and high speed Internet connections. CSD is providing training materials in American Sign Language (ASL) on a variety of technology topics to help individuals maximize their use of broadband to access, for example, education &amp; training, jobs, communication, banking, health information, etc. Additionally, CSD is installing Public Access Videophones (PAVs) in deaf services and public community anchor organizations to allow access to video relay services and the Internet.</p> <p>Deaf and hard of hearing (d/hh) residents of the State of Minnesota have already begun to participate in the program. CSD promotes the project through d/hh news, networks and state service organizations. CSD expects to install 11 Public Access Videophones (PAV) in various organizations and facilities.</p> <p>Approximately \$138,661 of CSD's Federal Award goes toward direct services for the residents of MN.</p>
<b>Connected Nation, Inc.</b>	\$1,700,000	<p>Expand existing broadband maps to reach more providers, give information at a more detailed level, and investigate broadband adoption in Minnesota.</p>	<p>Connect Minnesota is the state's "designated entity" for federal grant funding under NTIA's "State Broadband Initiative" (SBI) grant program. The grant work is focused on mapping, research on broadband adoption and utilization, and planning related to support of the state's broadband task force and associated work on broadband adoption and utilization development.</p>
<b>Connected Nation, Inc.</b>	\$2,761,171	<p>Expand existing and planned maps to continue coverage for three additional years.</p>	
<b>Merit Network</b>	\$69,639,291	<p>Develop 1172 miles of middle mile fiber to serve anchors, public safety, homes and businesses in the Upper Peninsula and Northern Lower Peninsula. Paths out of the region will reach the Duluth area.</p>	<p>Construction continues in Michigan on the Merit network and an agreement has been reached in the 4Q of 2011 between Enventis and Merit to have Enventis construct between Superior and Duluth for the MN connection across St. Louis Bay and also leverage the stimulus build Enventis is doing here, saving both projects from any duplication of effort.</p>
<b>Mission Economic Development Agency</b>	\$3,724,128	<p>The Latino Microenterprise Tech Net will create a public computer center in Minneapolis, where they will offer computer training and adult basic education in English and Spanish.</p>	<p>After some delays in procurement, the Latino Economic Development Center opened their part of this project with a 17 computer center, offering 5 courses the first quarter of 2011 and increasing to 14</p>

			courses by the third quarter. Entrepreneurial and business courses are included.
<b>One Economy Corporation</b>	\$28,519,482	Publishes a portal of Twin Cities and national resources focusing on jobs, school, housing, money and health. Their Digital Connectors program will bring a mentor/community service project to the Twin Cities where youth will learn about broadband and pass on their knowledge to the community.	The Hmong American Partnership in conjunction with One Economy and Comcast, run the Digital Connectors program to promote the natural affinity for technology among young people, also enhancing their potential for spreading technology knowledge, and creating a culture of use in their neighborhoods. The program identifies talented young people, immerses them in technology training, and helps them build their leadership and workplace skills to enter the 21st century economy. Participants, ages 14-21, learn how to network computer labs, connect wireless access points, design computer training modules and create social media projects prompting them to put broadband and Internet technology to the greatest use in their communities. Additionally, participants learn about financial management, entrepreneurship and civic engagement. Digital Connectors are also motivated by community service. A major program requirement is to give back to their families, friends and communities what they have learned for a minimal of 56 hours of community service. The group has completed more than 200 hours of community service, technical support, and digital literacy trainings.
<b>Portland State University</b>	\$3,318,031	A broad coalition of anchor institutions in Minnesota, New York, Central and South Texas, New Orleans, LA and Richmond, CA will implement an innovative online system of self-paced Learning Plans focused on digital literacy for adults.	The first six months of the grant involves development of consumer Learning Plans (led by Minnesota) that will be used in over 60 community locations around the country during the following 24 months of the grant, to serve economically vulnerable populations move across the digital divide. The Basic Computer Digital Literacy Standards recently developed through SPCLC will be integrated into the plans. In addition, the project will recruit and train numerous volunteer

			tutors to work with populations using the learning plans, using a learning plan developed by <a href="#">ProLiteracy</a> .  The <a href="#">Minnesota Literacy Council</a> will serve as fiscal agent for the Minnesota portion of the grant, with management assistance from the <a href="#">St. Paul Community Literacy Consortium</a> . Minnesota partners include Minnesota Workforce Centers in <a href="#">Ramsey County</a> , <a href="#">Minneapolis South</a> , <a href="#">Mankato</a> , and <a href="#">New Ulm</a> ; Minneapolis ABE, McDonough Public Housing (St. Paul), and <a href="#">Project for Pride in Living</a> .  The program is expected to accelerate in 2012.
<b>University Corporation for Advanced Internet Development*</b>	\$62,540,162	Create an ultra-fast national network to colleges, universities, libraries, health care facilities and public safety entities, including some based in Minnesota.	MN is part of the Northern Tier Network, due to get upgraded as part of this project with work beginning July of 2012 and concluding June of 2013 that will connect the research universities and other anchors to a nationwide 100Gbps network.
<b>8 Projects</b>	\$187,190,922		
<b>28 Total Projects</b>	\$425,225,906		

## **Section 6: Opportunities to Coordinate with Federal, State and Local Agencies**

In order for broadband to be effectively and efficiently deployed and adopted throughout Minnesota, coordination among federal, state and local agencies as well as public-private partnerships are critical. In the limited time available to prepare this report, the Task Force compiled the below list of government activities (that are not addressed elsewhere in this report) and partnership examples with both being areas that can be built upon in the future work of the Task Force.

### **Federal Level**

As Minnesotans, state and local governments and the Governor's Task Force on Broadband continue to work collaboratively to expand access to, adoption, and use of broadband by Minnesota residents and businesses, there are and will continue to be opportunities for the state to coordinate with the federal government and its many broadband-related initiatives.

For several years, the federal government has shown an increasing interest in the benefits (particularly economic) from expanded broadband availability and adoption, and has expanded or reformed its activities to enable or direct the growth of broadband in the United States.

The Federal Communications Commission (FCC): The FCC, as the primary government agency focused on telecommunications in the U.S., is directing much attention to the primary platform for the delivery of telecommunications services: high-speed Internet. To that end, in 2011, the FCC began the long-debated reform of the federal Universal Service Fund (USF) away from ensuring voice telephone service in the U.S. and towards ensuring ubiquitous broadband availability.

Telecommunications carriers in 2010 received over \$137 million per year from this fund for services provided in Minnesota. The vast majority of that amount (\$105.7 million) was provided to support the provision of voice service in the rural areas of the state, where costs of building and operating networks are more expensive than urban areas. In contrast, \$6.35 million from the fund went to support the cost of telephone service to low-income Minnesota consumers.

In late October of 2011, the FCC adopted an order that transitions the rural, high-cost program to directly subsidize broadband deployment in unserved areas across the country. The FCC transition will affect the \$105.7 million that Minnesota providers currently receive under that program, and the FCC action also will address another significant source of revenue for local telephone companies, the complex system used by telecommunications companies to reimburse each other for long-distance calls known as "Intercarrier Compensation" or access charges.

This FCC transition will take several years, as will the process necessary for the FCC to adopt future orders that will reform remaining elements of the USF. But as early as 2012, the FCC will take steps that will provide opportunities for eligible telecommunications carriers to receive immediate funds to deploy broadband to Minnesota's unserved areas. In particular, the FCC will make available nationally \$300 million in additional incremental funding for larger providers like CenturyLink, Frontier and Windstream to build out fixed networks to a standard of 4 Mbps down/1 Mbps up. In addition, in 2012 the FCC will have an auction of an additional \$300 million (\$50 million reserved for Tribal areas) that will support the deployment of mobile broadband in areas across the country that do not have access to that service today. The Task Force will want to track the impact of the FCC's decisions on Minnesota providers as the specific outcomes are not able to be predicted today.

The National Telecommunications and Information Administration (NTIA): While the projects enabled by the Broadband Technology Opportunities Program (BTOP) have been awarded and are in process (see separate section in this report on federal ARRA funded projects), it is certain that NTIA will remain a key player in the federal government's strategy for broadband expansion. NTIA's now developed expertise in administering large programs make it a prime candidate for continuing this role if the U.S. Congress provides new funds for broadband grants. Additionally, NTIA plays a key role in spectrum management, and the need for spectrum is growing as mobile broadband providers seek to expand the scope and capabilities of their networks.

The Rural Utilities Service (RUS): While dependent upon annual discretionary appropriations, the RUS (a sub-agency of the U.S. Department of Agriculture) has played an historic role in providing grants, loans, and loan/grant combinations to broadband providers.<sup>4</sup> It is almost certain that this annual funding structure will remain in place for at least the near future, and thus will be a source of potential continuing federal assistance to enable broadband deployment in Minnesota. Loans available through RUS have been very important to the deployment of broadband in rural Minnesota. There are currently about 28 independent telephone companies with outstanding loans from RUS totaling \$292 million. Additionally, there are other Minnesota broadband companies that have outstanding loans totaling about \$152 million under the Farm Bill programs administered by RUS. The RUS also administers annual grant programs such as Community Connect and Distance Learning and Telemedicine (DLT). While no Minnesota

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<sup>4</sup> Like the BTOP loans administered by the NTIA, the Broadband Initiatives Program (BIP) loans and grants administered by RUS have all been awarded and the projects are in process (also summarized in separate section of this report). The BIP loans and grants are separate from other annual appropriations RUS makes for broadband.

applicant received a Community Connect grant this year, on December 8, 2011, in the RUS announcement of DLT grant recipients, four grants totaling \$1.5 million were awarded in Minnesota for distance learning projects.

Other federal agencies: In addition to the agencies above, several other entities within the federal government have programs or departments that focus on broadband or technology, and thus are entities with which the state of Minnesota should seek engagement and coordination. Among them, White House Office of Science and Technology Policy, the National Science Foundation (with its US Ignite initiative), the U.S. Department of Education (with several education technology programs), and the U.S. Department of Health & Human Services' Office of the National Coordinator for Health Information Technology will be prime points of interest for Minnesota in 2012.

Also at the federal level, the “Connect to Compete” program ([www.connect2compete.org](http://www.connect2compete.org)) was announced by the FCC in October 2011. That program, in recognition of the need to address the broadband adoption, digital literacy and employment skills gap, will bring together the resources of several private companies and nonprofits, including Best Buy, Boys and Girls Clubs, Goodwill, 4-H, Microsoft, Arise Virtual Solutions, CareerBuilder.com, Monster.com, Metrix Learning, BrainFuse, Sesame, Discovery Education and OneEconomy. RedemTech will provide refurbished computers for \$150 and Microsoft will provide new computers for \$250. Best Buy’s Geek Squad will offer digital literacy training in 20 cities around the nation and offer “train the trainer” sessions for community organizations. Microsoft will develop online digital literacy training content for residents in communities that do not have in-person digital literacy training. Discovery Education will provide free access to its premier educational content. CareerBuilder.com will offer \$1 per course online prep or certification classes.

## **State and Local Level**

The MIRC partners in the Blandin Foundation BTOP grant also have several programs underway to help increase broadband adoption through public-private partnerships. A few to note include: the University of Minnesota Extension offering workshops to businesses for assistance in using broadband to improve their marketing, sales, customer service and operational efficiencies; the Minnesota Department of Employment and Economic Development in partnership with Adult Basic Education offering basic digital literacy courses at 30 workforce center locations; and Minnesota Renewable Energy Marketplace’s offering of bi-monthly webinars to assist companies interested in doing business with or in the renewable and alternative energy market sector.

The Task Force is aware of other community initiatives, many involving partnerships between local units of government, business and involved citizens that are underway to address the need for broadband

locally. Such efforts are active in Kanabec County, Todd County, Sibley County, Aitkin County and the Cloquet Valley Internet Group north of Duluth. The Task Force is considering mechanisms for better tracking of these community initiatives and their outcomes.

Several partnership efforts are also underway to address the affordability issue, including discounted rates for monthly broadband subscription offered by providers and opportunities for low income residents to purchase computers at reduced prices.

In August 2011 in Minnesota, Comcast launched its Internet Essentials program as part of its promise to the FCC for approval of its merger with NBC/Universal. Comcast's program assists low-income families with children obtain broadband service, addressing cost as a barrier to adoption. The program consists of the following elements (See link at <http://www.internetessentials.com/> ):

Residential internet service for \$9.95 per month.

No price increases, no activation fees, or equipment rental fees.

A voucher to purchase a low-cost computer for \$149.99 plus tax.

Access to free digital literacy training in print, online or in person.

Families with children who qualify for free lunches under the National School Lunch Program (NSLP) are eligible for the program. Eligible families will remain so for at least three years. Comcast will enroll families in the program through the end of the 2013-2014 school year and is working with the school districts in its cable franchise area (Minneapolis/St. Paul metropolitan area) on implementation. Any household that qualifies will remain qualified until the family's children graduate from high school.

Comcast's Digital Connectors program engages groups of young people, ages 14 to 21 from diverse, low-income backgrounds to learn digital literacy skills over one year by participating in after school and summer training courses. Eligible youth in the Twin Cities can take classes at the Hmong American Partnership or Neighborhood House. They will also volunteer their time at community-based organizations, senior centers, churches, local schools and homes to help improve digital literacy in their community. The Digital Connectors curriculum introduces core leadership values and life management skills, teaches basic and advanced digital literacy skills, and exposes youth to post-secondary and career choices. Students will learn how to network computer labs, connect wireless access points, design computer training modules and create social media projects.

The National Cable and Telecommunications Association (NCTA) has launched a national program similar to Comcast's Internet Essentials in which cable service providers reaching 86% of U.S. homes will participate. Similar to the Comcast Internet Essentials program, NCTA's contribution to the federal "Connect to Compete" or C2C program is comprised of the following elements

(<http://www.ncta.com/PublicationType/MiscellaneousPublication/Connect-to-Compete.aspx>):

Broadband of at least 1Mbps at \$9.95 per month to families with children who are eligible to participate in the NSLP.

No standard installation fees. Cable modems will either be leased for free or sold for a nominal charge.

Eligible families can participate for up to two years.

CenturyLink has also committed to a discount program called Internet Basics as part of its agreement with the FCC for approval of its acquisition of Qwest. While not yet formally introduced in Minnesota, the discounted service is available in areas where CenturyLink has deployed broadband and to customers that qualify for the Telephone Assistance Plan or TAP/Lifeline), are not current broadband customers of CenturyLink and have not been customers within the past 90 days, and do not have overdue bills or unreturned equipment. The service provides 1.5 Mbps to customers for \$9.95 per month plus taxes and fees and for up to 12 months. (More information is available at [www.centurylink.com/internetbasics](http://www.centurylink.com/internetbasics).)

For low income residents that are unable to afford a computer, PCs for People provides an option for obtaining equipment with either a \$50 or \$25 donation. (The \$50 donation level provides newer equipment.) PCs for People obtains equipment through donations and refurbishes before making the equipment available. PCs for People also will repair equipment for a flat, nominal charge for low income residents. More information on this program is available at [www.pcsforpeople.com](http://www.pcsforpeople.com). The PCs for People program also offers an opportunity for partnership with corporations, small business and individuals to donate their used computer equipment—helping someone that needs a computer and helping the environment.

What this brief survey indicates to the Task Force is that there is much activity in the broadband arena involving partnerships and more work needs to be done to catalog, track and evaluate these activities. Further, the scope should not be limited to what is happening in Minnesota.

## **Conclusion**

The charge given to the Task Force for our initial report was to inventory, assess and report on broadband access, adoption and use in Minnesota. The preceding pages offer Minnesotans a high-level view of how broadband impacts, and is utilized by, targeted sectors of Minnesota's economic and social sectors. In addition, we are able to examine key data points that give us at least an initial understanding of where we stand related to the state's statutory goals for broadband speeds and access. The Task Force is proud to present this initial Report to Governor Mark Dayton.

However, we recognize we have much work ahead of us during our term of service. Most immediately, we will be submitting, by January 31, 2012, a Minnesota Broadband Plan Outline that will include options for strategies, specific action items and policies designed to meet the state broadband goals. In addition, the Task Force will be meeting monthly throughout 2012 with the goal of looking more closely at how broadband impacts key segments of Minnesota economic and social future. We believe policy makers, stakeholders, and all Minnesotans must first understand the facts about broadband before we can move forward with targeted and appropriate policy that will ensure that Minnesota not only meets the broadband speed goals, but also addresses issues of adoption, digital literacy and economic opportunity.

We look forward to continuing our efforts in the months ahead.

## **Acknowledgements**

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