



EXECUTIVE SUMMARY

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In April 2008, the leadership of the state of Minnesota took a giant step forward in its long-term planning by passing the law that created the Minnesota Ultra High-Speed Broadband Task Force¹. The Task Force convened in August 2008 to outline a path to ultra high-speed Internet access for all residents of the state by 2015. Over a year and a half, our group of 23 diverse members met with experts to learn the issues, listened to the public, researched solutions from other states and nations, and debated the best way to meet our state's needs. We read. We studied. We heard presentations. We held meetings in the metro area and in greater Minnesota. All of these meetings, research and dialog culminated in this report.

We need to think of ultra high-speed broadband access both as a communication and transportation system, carrying massive amounts of electronic information for the 21st Century. We need to invest in it. It's good economics. Communities in which mass-market broadband was available experienced more rapid growth in employment, the number of businesses overall, and businesses in IT-intensive sectors, relative to comparable communities without broadband at that time.²

According to a recent statewide broadband mapping project, 94% of Minnesotans have access to broadband as defined by the FCC (currently 768 Kbps or more). While the Task Force supports the FCC's effort to update their definition, it also recognizes that technology has advanced considerably and that consumers are currently being offered broadband speeds as high as 50 Mbps, 65 times faster than the FCC definition. The Task Force has set a minimum of 10-20 Mbps by 2015.

The Minnesota Ultra High-Speed Broadband Task Force report sets ambitious goals for the state. In the following pages you will find a thorough description of our recommendations.

Our proposed actions will help Minnesota bring reliable, affordable and ubiquitous broadband service to all Minnesotans and will ensure they get the service options they need.

Identify a Minimum Level of Service

The Minnesota Ultra High-Speed Broadband Task Force recommends that any goal for a standard of broadband service in Minnesota be based on a basic level of functionality to every person in the state. We recommend the following minimum speeds for all residents of the state by 2015:

- 10-20 Mbps (download)
- 5-10 Mbps (upload)

In addition, the Task Force recommends that Minnesota aspire to be:

- In the top 5 states of the United States for overall broadband speed (download/upload)
- In the top 5 states of the United States for broadband penetration
- In the top 15 when compared to countries for global broadband penetration



"Initiatives like the Minnesota Ultra High-Speed Broadband Task Force help move the country in the direction we need it to move: The infrastructure they promote will allow the American genius and innovation to ensure that we maintain our technological, economic and moral leadership while growing in a sustainable way."

Thomas Friedman

Minnesota native and
New York Times writer
and journalist

¹ On April 18, 2008, Governor Pawlenty signed a bill to enact the law to form the Minnesota Ultra High-Speed Broadband Task Force. See Appendix A for the full text of the passed bill.

² See "Measuring Broadband's Economic Impact," a study conducted by MIT/Carnegie Mellon, itc.mit.edu/itel/docs/2005/MeasuringBB_EconImpact.pdf

Regarding symmetrical service (i.e., equal upload and download speeds), certain applications require this to work properly. The Task Force concluded that many consumers asking for symmetrical service are in reality in need of faster upload speeds. When the upload need is met, consumers or businesses have a solution to their problem.

Identify the Policies and Actions Necessary to Achieve Ubiquitous Broadband

The goal for broadband is to have ubiquitous (100% of homes and businesses in the state) coverage as soon as possible and no later than 2015. As with roads, electricity, and telephony, broadband has become an economic and social necessity for all citizens of the state no matter where they are located.

The policies and actions necessary to achieve ubiquitous broadband span a wide range, both in terms of the people and entities who will have to collaborate to achieve that ubiquity as well as the nature of the work that they will have to do. The Task Force believes that it is critical to understand and address these actions as a whole. This collaborative approach is applicable to all actions that the Task Force is recommending, but is detailed here because achieving broadband ubiquity is both important and challenging to achieve. Conversely, if this collaboration can be put in place and help quickly achieve broadband ubiquity, the state will also have created a powerful engine to drive the implementation of other recommendations.

Minnesota cannot undertake alone all the actions required to achieve broadband ubiquity. What is required is a broad, and perhaps unique, collaboration between many stakeholders. The state has a variety of important roles to play, but so do the rest of the stakeholders. Balanced collaboration needs to be “baked in” right from the beginning.

Therefore the Minnesota Ultra High-Speed Broadband Task Force recommends the creation of a multi-stakeholder Broadband Advisory Council for Minnesota (BACM), with support from the appropriate agencies (e.g., Department of Commerce), to support the implementation of the recommendations that are outlined in this report. We provide many actionable steps the state can and should take.

Identify and/or Create Opportunities for Public and Private Sectors to Cooperate to Achieve the Goal of Ubiquitous Broadband

A successful relationship between the public sector (local, state, and federal government) and the private sector is critical in order to achieve ubiquitous high-speed broadband service in Minnesota. Both the public and private sectors have distinct, important roles in serving the communication needs of Minnesotans.

State government should lead the effort to accurately map the state to delineate the well-served, underserved, and unserved parts of Minnesota. Local providers, local units of government, or regional consortia, with their “feet-on-the-ground” knowledge of their areas, are important partners with the state to ensure the maps accurately reflect the service that is available. The Task Force believes any public-private partnership should follow the same clearly defined path, starting with accurate mapping of the state’s broadband coverage. The governor should

“Today more than 600,000 Americans earn part of their living by operating small businesses on eBay’s auction platform, bringing jobs and opportunity to ... communities in both rural and urban America.”

*Julius Genachowski,
FCC Chairman*

*Net Neutrality speech at
The Brookings Institution,
September 21, 2009*

designate one state agency to be responsible for maintaining the map, including a process for updating, verifying, and making it publicly available.

Local government entities (i.e., cities, counties, townships, school districts) and regional library consortia can form collaboratives to improve connectivity between them and/or combine their purchasing power in the aggregate. This level of connectivity can serve as the anchor tenant for existing service providers and be one way to encourage them to build out the existing network.

Budget issues and shrinking rural demographics are creating the need for different levels of government to share resources. This requires an increased use of broadband between these levels of government. Consortia should be formed to develop a clear understanding of needs and opportunities for collaboration.

On top of all this, government should encourage private sector providers to build out or upgrade their networks where necessary.

Evaluate Strategies, Financing, and Financial Incentives Used in Other States and Countries to Support Broadband Development

The Minnesota Ultra High-Speed Broadband Task Force has analyzed incentives used in other states and has included those that were most relevant in the key recommendations in the report. They include but are not limited to, funding sources, organizational changes, and financial incentives.

States across America provide tax incentives to spur deployment and adoption. Examples include sales or property tax exemptions for broadband equipment and income or sales tax credits to encourage access to broadband, location of facilities and telecommuting for employees. A detailed state-by-state listing of such incentives is set forth as Appendix D. Also in Appendix C are examples of state broadband funds, such as the California Emerging Technology Fund (funded by AT&T and Verizon merger approval funds) which can be tapped to accelerate the deployment and adoption of broadband in unserved and underserved areas.

On February 13, 2009, Congress passed the American Recovery and Reinvestment Act of 2009 (ARRA), which President Obama signed into law four days later. One component of the ARRA was a \$7.2 billion appropriation accompanied by a direction to the Department of Agriculture's Rural Utilities Service (RUS) and the Department of Commerce's National Telecommunications and Information Administration (NTIA) to expand broadband access to unserved and underserved communities across the United States, increase jobs, spur investment in technology and infrastructure, and provide long-term economic benefits. The result is the RUS Broadband Initiatives Program (BIP) and the NTIA Broadband Technology Opportunities Program (BTOP). NTIA is also engaging in broadband mapping activity pursuant to the State Broadband Data and Development Grant Program that implements the joint purposes of the ARRA and the Broadband Data Improvement Act (BDIA).

Evaluate Security, Vulnerability, and Redundancy Actions Necessary to Ensure Reliability

The Minnesota Ultra High-Speed Broadband Task Force recommends these architectural enhancements to the way Internet is delivered in Minnesota:

- Provide a competitive advantage for the state.
- Strengthen businesses.
- Protect consumers and citizens.
- Promote the development and early adoption of advanced applications.

The Minnesota Ultra High-Speed Broadband Task Force recommends that the state undertake and fund a detailed study of this issue to determine the advisability and approach to addressing the goals and the detailed suggestions contained in this report.

The policies and actions necessary to move Minnesota to the front ranks of security, reliability, and redundancy rest on establishing a robust ongoing collaboration between a broad range of public, private, and citizen stakeholders.

Just as with achieving our other broadband goals, “steady leadership wins the race.” Ensuring that the state has secure, reliable, redundant broadband infrastructure is not a one-time project but rather a long-term commitment of leadership talent to an ongoing program of vigilance and collaborative problem solving.

The Minnesota Ultra High-Speed Broadband Task Force recommends the leadership net be thrown as widely as possible. While the state must continue to play an active convening and enabling role, there is a need to continuously draw in leadership capability from all stakeholders.

Cost Estimate and Financial Strategies

A successful relationship between the public sector (local, state, and federal government) and the private sector is critical in order to achieve ubiquitous high-speed broadband service in Minnesota. Both the public and private sectors have distinct, important roles in serving the telecommunication needs of Minnesotans.

Over the past several decades Minnesota’s telecommunications, cable and broadband providers have invested in excess of \$8 billion in private capital to build out, upgrade and maintain networks that currently offer broadband services in Minnesota. In addition, through RUS loans and co-op financing other providers have invested over \$50 million. Municipal entities have also raised and deployed about \$35 million to offer such service.

The Minnesota Ultra High-Speed Broadband Task Force recommends that Minnesota:

- Initiate a study to develop a wide-ranging collaborative funding strategy to support the recommendations of this report. The study should be a creative exploration of a broad range of sources and uses of funds.
- Explore financial options such as tax incentives including property and sales tax credits and exemptions to further incentivize private capital investment. (See Appendix D for many examples from other states).

- Encourage and facilitate a variety of partnerships that increase the adoption and utilization of broadband. Partnerships may include local governments, education, health care, libraries, non-profits, providers and other institutions. Increased adoption will make additional private investments possible. (See Appendix E for examples of existing and proposed programs.)
- Encourage minimizing any unreasonable barriers to right of way or easement access and facilitate efficient cooperation related to open trenches and development. (See Recommendation 3.)
- Encourage appropriate utilization of available federal funding to support the deployment of broadband to unserved and underserved populations, as well as to encourage efforts to support broader public adoption of broadband services.

Identify Economic Development Opportunities

Access to high-speed broadband has been shown to enhance economic growth and performance. According to the report “Measuring Broadband’s Economic Impact,” prepared for the U.S. Department of Commerce, Economic Development Administration, “Communities in which mass-market broadband was available experienced more rapid growth in employment, the number of businesses overall, and businesses in IT-intensive sectors, relative to comparable communities without broadband.” The report also states that the effect of broadband availability can be observed in higher property values.

High-speed broadband affords significant opportunities to encourage economic development. A region well served with high-speed connectivity encourages business growth for companies of all sizes. Cluster development occurs when infrastructure is in place to serve businesses that support or rely on related industry. The availability of high-speed broadband also provides an incentive for small and/or home-based businesses to locate and operate in well-served areas, reducing travel-related expenses and traffic congestion.

Rural Minnesota cities face unique economic development challenges. Often working on their own, rural cities have to expand their base by reaching beyond the city limits to serve as the hub of activity for geographical regions. In these areas, anchor tenants such as community colleges, health care centers, and libraries, can help justify the cost and effort of providing power and broadband for the community. To keep costs down, we advocate judicious planning. Plan once – develop coordinated broadband, electric-grid, energy retrofit projects – and dig once – coordinate construction projects, such as roads and electrical-grid improvements.

“(... we need to ...) ensure that Minnesota has a high speed broadband infrastructure that will ...

- *Attract new businesses, retain existing ones*
- *Create new job opportunities*
- *Encourage entrepreneurship with affordable broadband”*

*Andrew Michael Cohill, Ph.D.
President, Design Nine, Inc.*

Evaluate the Way Broadband Access Can Benefit Organizations and Institutions

By 2015, ultra high-speed broadband capabilities will be required to connect all parts of society, including the public sector, communities, citizens, and businesses. Each of these entities will need to have adequate access for e.emergency (multi-megabit connection to emergency responders and the National Guard), e.government (10 Gigabits per second (Gbps) network to large county seats), e.economic development, e.health, and e.learning (a multi-Gbps hub at major learning institutions).

The Minnesota Ultra High-Speed Broadband Task Force report details many of the current and future uses of ultra high-speed broadband capabilities and how various organizations and institutions will use it to provide benefits to the public. Increased capabilities will help drive creation of new applications benefiting all.

The Way Forward

In the following pages you will find a thorough description of our recommendations. The recommendations are actionable, but they also have to be flexible. While we have identified the speed goals as a bare minimum for all residents, dramatic increases in speed will be necessary for most users in the next few years as applications become more needed and prevalent.

The Minnesota Ultra High-Speed Broadband Task Force is committed to advocating and supporting the implementation of its recommendations. We feel that doing so will provide social and economic benefit to all Minnesota residents and businesses. We know that with the support of key stakeholders in the government and industry, the recommendations contained in this report will form the best possible foundation for the development of a new infrastructure in our state, which will in turn transform Minnesota and move it closer to the front of the race, both in the United States and in the world.

We look forward to your feedback and support.



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