

RURAL HIGH-SPEED INTERNET ACCESS TASK FORCE

PRELIMINARY REPORT
FEBRUARY 1, 2008



PREPARED FOR:

The Honorable Matt Blunt, Governor

CHAIRMAN

*The Honorable Peter Kinder,
Lieutenant Governor*

State of Missouri

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INTRODUCTION

In July 2007, Governor Matt Blunt created the Rural High-Speed Internet Access Task Force to address the technological needs of Missouri rural communities. The group is chaired by Lt. Governor Peter Kinder and is charged with submitting a report to the Governor by February 1, 2008.

MANDATE

In an Executive Order (Attachment A), dated October 10, 2007, Governor Blunt directed the task force to:

1. Assess the current level of high-speed Internet access available in Missouri;
2. Identify barriers to deployment to underserved areas including economic, geographic, regulatory, and market barriers;
3. Identify potential options to increase the deployment of high-speed Internet access in underserved communities;
4. Review best practices in other states to increase high-speed Internet access; and
5. Recommend statutory, regulatory, and policy changes needed to increase the availability of high-speed Internet services across the state.

MEETING AND PUBLIC HEARING SCHEDULE

The first meeting of the task force was held in Jefferson City, Missouri on November 27, 2007, during which time a very aggressive meeting and public hearing schedule was adopted in order to meet the February 1, 2008 deadline.

<i>When</i>	<i>Where</i>	<i>Type</i>
November 27, 2007	Jefferson City	Task Force Meeting
December 6, 2007	St. Joseph	Public Testimony
December 13, 2007	Sikeston	Public Testimony
December 14, 2007	St. Louis	Public Testimony
January 3, 2008	Joplin	Public Testimony
January 4, 2008	Springfield	Public Testimony
January 7, 2008	Hannibal	Public Testimony
January 15, 2008	Jefferson City	Task Force Meeting
January 22, 2008	Jefferson City	Task Force Meeting
January 29, 2008	Teleconference	Task Force Meeting
January 31, 2008	Teleconference	Task Force Meeting

Information collected by the task force during the various meetings and public hearings, and also the minutes from these meetings, can be found at a link on the Lt. Governor's website at www.lt.gov.mo.gov. Testimonies are summarized in Attachment B of this report.

MANDATE #1: ASSESS THE CURRENT LEVEL OF HIGH-SPEED INTERNET ACCESS AVAILABLE IN MISSOURI.

For years, “broadband,” as compared to “dial-up,” has referred to a higher Internet speed connectivity, but the actual speed threshold has varied. For purposes of this report, the task force recognizes that broadband and high-speed Internet access are interchangeable terms. In computer networking, a kilobit represents 1000 bits of data. A megabit represents 1000 kilobits and a gigabit represents 1000 megabits (equal to one million kilobits). Data traveling over a computer network are typically measured per second. For example, one kilobit per second equals 1 Kbps.

According to a national survey which was the basis for the Pew Internet Home Broadband Adoption 2007 Report¹:

- 47% of adult Americans say they have a high speed connection at home, up from 42% in early 2006.
- That 12% year to year growth rate is much lower than the 40% growth rate in the 2005 reporting period. Broadband penetration is rising – but the growth rates appear to be slowing.
- The report also shows that home broadband adoption in rural areas is now 31% - and continues to lag high speed adoption in urban centers and suburbs.
- 60% of rural adults use the Internet, compared with the national average of 71%.

While some reports show the broadband threshold to be lower, many of those testifying and participating in task force proceedings, agree that 1 Megabit currently represents the generally accepted definition of broadband, but may need to be increased in the future. The most recent definition of broadband by the Federal Communications Commission (FCC) is 200 kilobits per second (kbps) in one direction.² This speed is inadequate for the needs of Missouri. The FCC is currently considering actions to help assess broadband deficiencies and expand their definition of broadband.

The task force reviewed and agreed to adopt a definition of “broadband” similar to the state of California as noted in Attachment C. The state of California developed a working definition of “broadband” as the following:

- Broadband is defined by the ability to perform online applications at a reasonable performance level for the end user.
- Broadband is a range of speeds and will evolve over time as applications and needs change. It is a summation of the downstream data rate (transmission to the user) and upstream data rate (transmission from the user).
- The ratio of the downstream and upstream must be a minimum of 10:1 (the ratio of the downstream and upstream data rates can increase from 10:1 to fully symmetrical 1:1).
- Broadband must have the capability to be always on, and have a sustainable steady state data rate.
- Burst-able speeds provide benefit to users, but should not be considered in the same manner as steady data rates.
- The minimum speed required to use the most basic of broadband-enabled applications is 512 kbps, and this minimum data rate is expected to increase over time.
- An increasing scale that continues to differentiate within speed tiers allows stakeholders to measure specific broadband availability over time.³

The standard broadband technologies in Missouri are Digital Subscriber Line (DSL) service, generally provided by incumbent telecommunications companies and cable Internet access modems, generally

¹ PEW Internet and American Life Project, June 2007, www.pewinternet.org.

² In the Matter of Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans (“Nationwide Broadband Data”), (WC Docket No. 07-38, released April 16, 2007), at n.2.

³ Final Report of the California Broadband Task Force, January 2008.

provided by Cable TV companies. It has been noted in some cases, that connection speed can vary depending on how many people are using the high-speed Internet service at the same time and a customer's distance from a central office. The use of fiber-optic technology, while only recently being used in fiber to the premises and fiber to the curb applications, has played a crucial role in enabling broadband Internet access by making transmission of information over larger distances much more cost-effective than copper wire technology.

Wireless broadband is a functional alternative, especially in rural areas where fiber penetration is costly and even impractical. In order for wireless technology to work properly; however, equipment must be mounted on structures that rise above the rural landscape. An assessment of current and future technologies that are not limited by this factor should be conducted. Access to "vertical assets" or structures such as water towers is essential. However, homeland security issues may be a factor in determining if structures are available for equipment attachment. The task force recognizes the need to find reasonable alternatives to attaching wireless broadband equipment to these structures, while still acknowledging the need to protect public safety.

The task force discussed at length whether satellite Internet should be considered an alternative to traditional broadband. The task force believes satellite should be considered an option, although some applications may not function and affordability is a concern for many subscribers.

RECOMMENDATION #1: Engage a firm to analyze Internet accessibility and prepare maps for the current level and price of broadband access available in every corner of Missouri. This step is necessary to proceed with assessing broadband usage and deployment in Missouri.

RECOMMENDATION #2: Recommend funding, as soon as possible, through either the supplemental or regular budget process in order to engage a sole source provider or conduct a RFP process to complete the mapping project.

MANDATE #2: IDENTIFY BARRIERS TO DEPLOYMENT TO UNDERSERVED AREAS INCLUDING ECONOMIC, GEOGRAPHIC, REGULATORY, AND MARKET BARRIERS:

The most prominent barrier to broadband deployment in Missouri identified in testimony before the task force was cost. Providers of broadband testified that it is currently not economically viable for them to build out the infrastructure necessary to support broadband in areas of the State where population density is less than three households per square mile. Providers indicated that it was not possible for them to develop a financial model for broadband deployment in order to recoup their investment or break even and at a price that the subscribers were able to afford.

RECOMMENDATION #3: The task force understands that from the outset certain rural communities may support only a single provider, but ideally rural communities would benefit from increased competition among multiple providers. To that end, the task force recommends that Missouri legislators and regulators explore ways to eliminate any and all barriers for encouraging public and private sector investment in the broadband infrastructure and consider establishing financial incentives for such investment.

MANDATE #3: IDENTIFY POTENTIAL OPTIONS TO INCREASE DEPLOYMENT OF HIGH-SPEED INTERNET ACCESS IN UNDERSERVED COMMUNITIES:

The task force agreed a review of current state financial programs should be conducted to ascertain if any current programs could be used to increase deployment of broadband access. These could be programs that offer incentives to providers and/or to consumers.

RECOMMENDATION #4: Extend the time frame of the task force to end on January 12, 2009, in order for the task force to conduct a more thorough and complete analysis of the barriers to broadband deployment in Missouri and develop a more comprehensive plan of action to deploy broadband access to all areas of Missouri.

RECOMMENDATION #5: Request the Department of Economic Development review and report to the task force all existing tax credit and other financial programs to determine if one or more could provide incentives for providers to invest in broadband infrastructure in un-served and underserved areas or provide incentives to consumers to better utilize broadband options in their area. The task force recommends creating a subcommittee to review these programs to determine if any can be used by the consumer and or provider.

MANDATE #4: REVIEW BEST PRACTICES IN OTHER STATES TO INCREASE HIGH-SPEED INTERNET ACCESS:

The task force conducted a general overview of what other states have done to increase access to high-speed Internet access. Several states including Kentucky, Tennessee, North Carolina, South Carolina, California and Ohio have established formal processes to address rural high-speed Internet access deployment. A summary of what these states have proposed is included in Attachment D.

The task force recognizes the potential benefits of replicating best practices of broadband high-speed Internet deployment programs from other states as a model for Missouri. The programs include an extensive analysis of current broadband availability in the respective state, current and potential demands for broadband services, identification of incentives for private/public sector investment and ongoing tracking of deployment progress.

RECOMMENDATION #6: If the task force is extended under Recommendation #4 above, the task force recommends creating several subcommittees to explore all possibilities and more thoroughly review programs not only in Missouri, but programs being adopted in other states. The subcommittees will determine if any programs should be adopted by the state of Missouri to be used by the consumer and or provider.

RECOMMENDATION #7: In addition to investigation of tax credit programs, DED should consider the benefits derived from the creation of a fund to provide necessary assistance in high cost areas to companies for the investment of broadband access infrastructure in un-served and underserved areas.

MANDATE #5: RECOMMEND STATUTORY, REGULATORY AND POLICY CHANGES NEEDED TO INCREASE THE AVAILABILITY OF HIGH-SPEED INTERNET SERVICES ACROSS THE STATE:

The task force acknowledges a variety of reports regarding broadband access, including a 2007 Missouri Public Service Commission report identifying one in five Missourians without high-speed Internet.

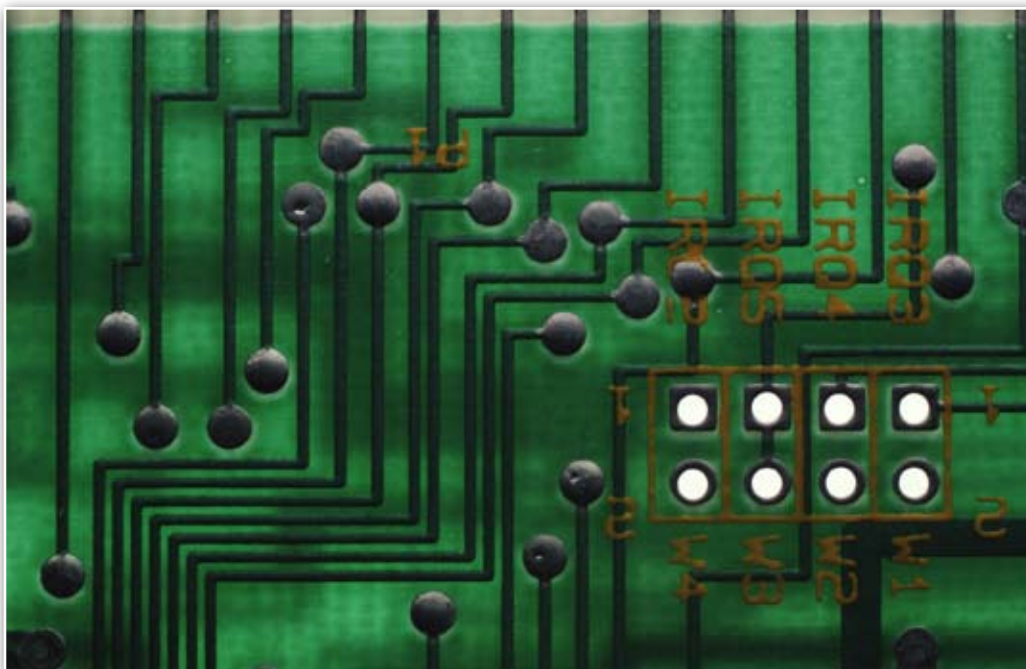
The task force commissioned a Request for Information (RFI) on December 17, 2007 seeking information from vendors with experience in planning and assisting a process for providing broadband Internet services to rural areas in Missouri (see Attachment E). The goal of the RFI is to create a plan, timeline and incentive model for private enterprises or public-private partnerships to offer all Missourians Internet services that are affordable and economically viable.

The five areas or categories of the RFI included:

- Street Level Broadband Infrastructure Mapping
- Market Intelligence through Survey Research
- Private Sector Consulting Services
- Demand Creation & Planning at the Community Level
- Providing Computers to Underprivileged Households (*for educational purposes*)

The task force received four submissions in response to the RFI from Connected Nation, Cost Quest Associates, Adesta/Ion Consulting and Socket. A summary of these responses can be found in Attachment F.

RECOMMENDATION #8: Engage a firm to develop an in-depth, neutral report to identify specifics on broadband need and usage in the state of Missouri. The firm must be a neutral entity that is able to protect provider data from open records requests and ensure data confidentiality through non-disclosure agreements (NDAs). A budget appropriation will be needed to fund this more in-depth review.



CONCLUSION AND RECOMMENDATIONS

It was made abundantly clear in the task force hearings and meetings that broadband access is critical to our state’s economic development, small business competitiveness and the overall quality of life of our citizens. This report, required by Executive Order 07-31, constitutes a preliminary review of the technology needs of Missouri’s rural communities.

The task force recommends in this preliminary report the following steps be taken in order to increase broadband accessibility in the state of Missouri.

1	Engage a firm to analyze Internet accessibility and prepare maps for the current level and price of broadband access available in every corner of Missouri. This step is necessary to proceed with assessing broadband usage and deployment in Missouri.
2	Recommend funding, as soon as possible, through either the supplemental or regular budget process in order to engage a sole source provider or conduct a RFP to complete the mapping project.
3	The task force understands that from the outset certain rural communities may support only a single provider, but ideally rural communities would benefit from increased competition among multiple providers. To that end, the task force recommends that Missouri legislators and regulators explore ways to eliminate any and all barriers for encouraging public and private sector investment in the broadband infrastructure and consider establishing financial incentives for such investment.
4	Extend the time frame of the task force to end on January 12, 2009, in order for the task force to conduct a more thorough and complete analysis of the barriers to broadband deployment in Missouri and develop a more comprehensive plan of action to deploy broadband access to all areas of Missouri.
5	Request the Department of Economic Development review and report to the task force all existing tax credit and other financial programs to determine if one or more could provide incentives for providers to invest in broadband infrastructure in un-served and underserved areas or provide incentives to consumers to better utilize broadband options in their area. The task force recommends creating a subcommittee to review these programs to determine if any can be used by the consumer and or provider.
6	If the task force is extended under Recommendation #4 above, the task force recommends creating several subcommittees to explore all possibilities and more thoroughly review programs not only in Missouri, but programs being adopted in other states. The subcommittees will determine if any programs should be adopted by the state of Missouri to be used by the consumer and or provider.
7	In addition to investigation of tax credit programs, DED should consider the benefits derived from the creation of a fund to provide necessary assistance in high cost areas to companies for the investment of broadband access infrastructure in un-served and underserved areas.
8	Engage a firm to develop an in-depth, neutral report to identify specifics on broadband need and usage in the state of Missouri. The firm must be a neutral entity that is able to protect provider data from open records requests and ensure data confidentiality through non-disclosure agreements (NDAs). A budget appropriation will be needed to fund this more in-depth review.

The task force believes the most immediate action to take is to adopt **Recommendations #1, #2 and #4**, as these steps are essential to complete a more thorough analysis of the current usage and barriers in Missouri. The second tier of actions should include Recommendations #3, #5, and #6 which require no additional funding at this time, but require action on the part of the task force, the Department of Economic Development, and the Missouri legislature. The final recommendations #7 and #8 will require a more in-depth analysis and additional investment from the State of Missouri with the goal of adopting an aggressive broadband plan of action for Missouri.

ATTACHMENT A: EXECUTIVE ORDER 07-31

WHEREAS, high-speed Internet access in Missouri's rural communities is of great significance to economic development, agriculture, and education; and

WHEREAS, many rural communities in Missouri currently do not possess the information and communication infrastructure that enables its residents access to high-speed Internet; and

WHEREAS, aggressively pursuing high-speed Internet access in rural communities has the potential to markedly increase Missouri's economic growth by creating opportunities in rural areas that have not been available because of a lack of access; and

WHEREAS, it is a priority of the State of Missouri to support and promote widespread access to high-speed networks in Missouri's rural communities; and

WHEREAS, by combining the collective ideas of both the government, citizens and representatives of private industry, the technological needs of Missouri rural communities can be heard and solutions can be reached;

NOW, THEREFORE, I, Matt Blunt, Governor of the State of Missouri, by virtue of the authority vested in me by the Constitution and the laws of the State of Missouri, do hereby create and establish the Rural High-Speed Internet Access Task Force.

Members of the Task Force shall be appointed by the Governor and shall represent individuals, organizations and industries impacted by availability of High-Speed Internet in Missouri. The Lieutenant Governor shall serve as Chair of the Task Force.

I hereby charge the Task Force with the following duties:

1. Assess the current level of high-speed Internet access available in Missouri;
2. Identify barriers to deployment to underserved areas including economic, geographic, regulatory, and market barriers;
3. Identify potential options to increase the deployment of high-speed Internet access in underserved communities;
4. Review best practices in other states to increase high-speed Internet access; and
5. Recommend statutory, regulatory, and policy changes needed to increase the availability of high-speed Internet services across the state.

Members of the Task Force shall receive no compensation for their service to the people of Missouri, but may seek reimbursement of their reasonable and necessary expenses incurred as members of the Task Force, in accordance with the rules and regulations of the Office of Administration.

The Task Force is assigned for administrative purposes to the Department of Economic Development. The Director of the Department of Economic Development or his designee shall be available to assist the Task Force as necessary, and shall provide the Task Force with any staff assistance the Task Force may require from time to time. All departments in the Executive Branch of Missouri state government are directed to cooperate with the Task Force, and shall provide such assistance to the Task Force as it shall request.

The Task Force shall submit to me no later than February 1, 2008, a report detailing the successful completion of its objectives and its recommendations.

The Task Force shall meet at the call of its Chair, and the Chair shall call a meeting as soon as practicable.

The Task Force shall expire on June 30, 2008 unless renewed by Executive Order.

ATTACHMENT B: TESTIMONIES

DECEMBER 6, 2007 PUBLIC HEARING (ST. JOSEPH):

1st Witness: Dirck Clark of Heartland Health

Mr. Clark testified that availability of reliable broadband internet in rural communities would make it possible for hospitals and healthcare providers to access patient records instantly, which would greatly improve the quality and speed at which diagnosis could be made and in turn improve the quality of care patients would receive.

2nd Witness: Jen Brooks, America Building Products

Ms. Brooks testified that rural broadband internet accessibility would allow their customers in more rural areas to buy merchandise from America Building Products', and other businesses', websites more easily and efficiently, which would be of great mutual benefit to customers and business owners.

3rd Witness: Anthony M. Ramspot, Labadie, Missouri

Mr. Ramspot testified that he moved to Labadie 6 ½ years ago and was told he would be able to receive high-speed internet within 6 months. He reported that he is still waiting and wants to know why.

4th Witness: Darren Farnan, United Electric Cooperative in Maryville, MO

Mr. Farnan testified that in the absence of broadband internet access, United Electric Cooperative provides fixed wireless service to their customers as an alternative to dial-up internet service. He reported that for the most part it works well, however there is an increasing problem with wireless frequency disturbances. Mr. Farnan asked that the Taskforce look at different frequencies, possibly in the fixed wireless radio frequencies that could be dedicated to internet service providers, whether or a licensed or unlicensed basis.

5th Witness: Tim Allen, St. Joe Wireless

Mr. Allen testified regarding wireless frequency interruption problems and the high cost of equipment and tower rent. He stated he felt the best thing to help wireless internet in rural locations is either licensed or unlicensed channels dedicated to wireless internet providers.

6th Witness: Mark Webb with Worldwide Technologies, Inc.

Mr. Webb testified that he felt it would be very beneficial to small internet provider businesses if legislation was passed to provide some type of relief, such as 'in-kind' dollars to help meet the expenses associated with tower locations, access points, costly equipment, etc. He felt that state or federal help would enable small providers to grow and expand, which would benefit consumers.

DECEMBER 13, 2007 PUBLIC HEARING (SIKESTON):

1st Witness: Lisa Winberry—BPS Telephone Company

Ms. Winberry stated she wished to share information on BPS Telephone Company, which is located in the "boot heel" of Missouri. BPS Telephone Company has worked diligently to improve and expand their infrastructure and equipment in order to provide the best telephone and internet possible for their customers. They are able to provide broadband internet access to 100% of their 3,000 customers who want that service or 1,000 homes. BPS Telephone Company is also heavily involved in community & education programs.

2nd Witness: Dave Crews—ORTrackM

Mr. Crews provided information about the internet services ORTrackM provides to its customers. He said they try to provide internet access to customers in the more rural areas at very reasonable prices. Mr. Crews explained that even dial up internet service could be jeopardized if ORTrackM does not receive some type of assistance to help defray operational costs. He reported that the ORTrackM board had recently met with a USDA Rural Development representative to inquire about the procedures for applying for grants in order to provide broadband. The USDA will consider grants for a US Census Community of not more than 20,000 population that currently does not have access to broadband. However, the USDA representative could not identify a US Census Community on the map of Oregon County. Mr. Crews said he hoped a better broadband opportunity would be discovered that will benefit all rural Missourians. Local topography, the high cost of towers and rocky terrain was identified as major barriers to wireless and broadband internet access.

3rd Witness: Janet Witter—Local Wired Initiative for Workforce Innovation, Dept. of Labor

Ms. Witter offered the help of their leadership council to help the Taskforce in any way possible to further broadband access in the 14 counties they served in the South Central and South Eastern areas of Missouri. She said they would be happy to serve as facilitators if needed.

4th Witness: Wayne McSpadden—Sikeston Board of Municipal Utilities

Mr. McSpadden gave background information on the fiber system the Municipal Utilities put in to establish better communications between the city facilities. The fiber system has allowed them to lease connection to other entities, such as the school system

Michigan. (The presentation is available on the Rural High-Speed Internet Access website.) Mr. Zimmer identified the difficulty of obtaining affordable financing, the difficulty of gaining access to vertical assets, such as water towers, and the administrative burden of running a wireless internet service provider business as barriers to rural broadband internet service expansion. He stated that the government could help by making affordable financing and access to vertical assets available.

4th Witness: Phillis Lovette—President, Missouri Council of the Blind

Ms. Lovette stated the MO Council of the Blind was concerned about the cost of rural internet service, especially for disabled people who are usually on a fixed income. She asked that the taskforce consider suggesting lower prices for internet access for disabled people.

5th Witness: Gail Hinshaw—The Mountain Complex

Mr. Hinshaw said he one of the owners and principals of The Mountain Complex, a world-class storage facility located inside a mountain just north of Branson, MO. He stated that he wanted to share what they had learned about economic development and its tie to internet connectivity. Mr. Hinshaw said in four years The Mountain Complex had become very successful as a high-security storage facility; however they did not need to employ many people to maintain it, so they began to investigate data centers as a way to increase job growth for the area. He said they realized they would need a good, reliable and economic source of electric power, which they were able to obtain from White River Valley Electric Co-op, and internet connectivity, which they were able to obtain due to the willingness of CenturyTel, and 4 other fiber companies, to invest large amounts of money to improve their infrastructures and build a 'sonet ring' in and out of the mountain. Mr. Hinshaw said the most important thing about all this is the job growth it is creating. He reported that they currently have 6 data centers located in The Mountain Complex and have leases with several other well known, national companies who will be building their own very large data centers. Mr. Hinshaw summed up his remarks by emphasizing that The Mountain Complex is a prime example of the impact high-quality; high-speed internet can have on the economic growth of an area.

6th Witness: Otto Lynch—Power Line Systems, Christian County

Mr. Lynch stated he wished to testify about the lack of internet options in Christian County and the lack of infrastructure development and re-investment by AT&T (formerly SBC) in existing neighborhoods. He said after his company allowed him to move back to Nixa, MO from Portland, OR, he was unable to receive DSL internet service even though he had been told he would be able to. He gave many examples of problems he has experienced in the last five years while trying to obtain DSL internet service. He said not only does SBC (AT&T) have no plans to offer DSL internet service in existing neighborhoods (they will only install fiber in new housing developments), they have kept him from receiving DSL service from Ozark Technology because of a lawsuit SBC had filed against Ozark Technology citing that they were part of a public utility, named Ozark Electric, and public utilities aren't allowed to compete against private companies. In addition, he talked about many problems he and his neighbors had experienced because of SBC's antiquated telephone lines, which were continually being struck by lightning and how after contacting SBC numerous times regarding a phone line that lay on open ground for over a year, he had to file a complaint with the Public Service Commission in order to force SBC (AT&T) to bury the phone line and to make proper repairs to people's yards after they finally buried the phone line. Mr. Lynch suggested that one of the recommendations the taskforce needs to make in the report to the Governor is to ask SBC (AT&T) to reinvest the money they are making to update their infrastructures in Christian County and southwest Missouri. In conclusion, Mr. Lynch stated that he is frustrated by people who think broadband access is a luxury and not a necessity. He said for his job he has to communicate with people all over the world and feels embarrassed that people in "developing" counties often have better internet access than he does. Mr. Lynch stated that we should be concerned about making sure Missouri is on the cutting edge of all technologies in order to be able to compete for jobs and investments on a global scale.

7th Witness: Mike Stoudt—Plant Manager, Choctaw Telephone Company in Halltown, MO

Mr. Stoudt testified that Choctaw Telephone Company offers local and metro telephone service, long distance and high-speed DSL internet service to Halltown and surrounding areas. He stated that Choctaw Telephone Co has around 125 customers who purchase DSL service and has worked very hard to be able to provide these services to 100% of their customer base.

=====JANUARY 7, 2008 PUBLIC HEARING (HANNIBAL):=====

1st Witness: Lynn Hodges—Ralls Technologies

Mr. Hodges stated that Ralls Technologies is a rural high-speed wireless internet provider, working out of the Ralls County Electric Co-operative offices in New London, MO, which provides fixed wireless and satellite high-speed connection in the northeast Missouri area, which includes Ralls, Marion, Pike and Audrain Counties. Mr. Hodges said the greatest problem for rural customers is lack of availability of reliable high-speed internet access. He stated the unreliability of fixed wireless systems is generally caused by 'line-of-sight' problems such as distance, terrain, trees, etc. Mr. Hodges reported there is a huge demand in rural areas for high-speed, newer technology internet services in the rural areas. He said they really want to upgrade their services; however the expense of building towers, building out the network and getting T-1 connectivity prevented them from keeping up. He reported the economic growth potential of rural Missouri is certainly being limited by the lack of access; when companies and people consider locating in their area, they ask about electricity, water and high-speed internet access. Mr. Hodges said the Ralls County Electric Co-operative Board had invested a lot of money to help build out the system but, in order to build out enough to fully meet the demand for high-end residential and business internet access in their area, financial help, such as low interest loans or grants, is desperately needed from the legislature.

2nd Witness: Greg Fritts—USDA Rural Utilities Service

Mr. Fritts testified that he is a field agent for the USDA Rural Development Utilities Program, an agency which finances telecommunications companies operating primarily in rural areas. He reported they have required their borrowers to build broadband compatible networks for the past several years. He stated it's extremely disturbing how many rural areas have no access to any type of high-speed internet service. He reported he had personally experienced internet access problems when trying to send or download files with dial-up service and had to use satellite internet service for about three years until the office in Washington installed a vertical private network. He said DSL internet service finally became available in his neighborhood, 10 miles north of Columbia, MO, about a year ago. Mr. Fritts said there are no maps or databases available to help him determine how underserved many rural areas are. He stated he usually has to physically travel to areas applying for grants to investigate and talk to the people there because the local Utilities are rarely able to provide exact information on the specific areas they serve; the number of households and the types of services they provide to specific areas. He said this information is crucial to determining if the grants will be received by areas that have no internet service, as opposed to an area where a new company will be competing with an existing company. Mr. Fritts said he agreed with Mr. Hodges that high-speed access is a necessity. He reported they now require all companies to do a cost comparison of whether it's cheaper to build a traditional copper or a fiber-optic network, if they are not applying for loans to build fiber networks. He said almost every time building a fiber network is cheaper on initial first cost; unfortunately it isn't always cheaper to add fiber-optic to an existing copper network. Mr. Fritts stated another problem is internet providers are not regulated by the Missouri Public Service Commission and he does not believe there will ever be universal high-speed internet service in rural Missouri until the government requires it. He stated an important part of being able to require such services will be to put methods in place that will make a business case to financially support it. Mr. Fritts remarked he felt only a state or federal mandate would really help the situation. Mr. Fritts wished to let the Task Force know that the next recommendation that coming out from the USDA Utilities Program regarding minimum internet speed would be 1 'meg' up and 1 'meg' down.

3rd Witness: Robin Fitzgerald—Mark Twain Council of Regional Governments

Ms. Fitzgerald testified that access to high-speed internet service is very important to rural areas from an economic development standpoint. She stated if a community does not have access to high-speed internet, they are usually not considered for new business opportunities. Ms. Fitzgerald said communities not only have to compete with other parts of Missouri and other states, they also have to compete with other countries. She concluded her remarks by stating that high-speed internet access is not a luxury, but a necessity for the economic growth of rural communities.

4th Witness: Shane Mayes—CEO, Onshore Technology Services in Macon, MO

Mr. Mayes stated Onshore Technologies is a rural outsourcing company, which provides software development and integration and other technology services in an outsourced fashion in competition with off shore vendors in India, China, Mexico, Russia and Brazil. He said his company opened in February 2005; currently has 40 employees; is opening a 2nd office in Lebanon, MO and has plans to open offices in other parts of Missouri. Mr. Mayes said the trend of large American companies outsourcing their information technology services to countries such as India and China, has largely been due to low cost of wages and large available workforces as opposed to large cities in the United States, which have large available workforces but the employees expect higher wages. He said he decided people in rural communities were a large, highly trainable workforce source and because the cost of living in rural areas is less expensive, wage expectations are lower and this makes it more affordable for U.S. companies to employ U.S. citizens. He said he chose Macon and Lebanon because those cities had already taken the initiative and had run fiber to every business and household in their area. Mr. Mayes stated his company could only open offices in communities with access to high-speed internet. He said having high-speed communications available throughout the state is one of many ways to promote growth and win back as many jobs as possible. Mr. Mayes reported his company had developed a learning management system for the Missouri University of Science and Technology on which all their certificate based non-credit programs can be run. He said high-speed internet for all rural communities would allow people to more easily access this learning management system on-line, improve their education and skills and compete for jobs. He stated with 300 million people, Missouri is "population challenged" when compared with China and India, which each have 1 billion people. Mr. Mayes stated that not only do we need to make high-speed internet available to every Missourian, but we have to identify the "next step beyond this" or the United States of America will not remain the number one economy in the world. He said with universal high-speed internet access we can create over 10,000 jobs in Missouri because information technology services is a business which can provide high economic impact and there is the great demand for it.

Mr. Mayes asked to make a few more remarks. Mr. Mayes said a lot of people had been talking about building a business case based on the needs of rural Missouri. He said there was a need in the metropolitan areas and other cities for 'Disaster Recovery Centers' and there is a new business model called 'Software Business Server'; also a lot of companies need content. There could be a way to justify having bandwidth in rural Missouri by leveraging some of the larger companies in the state. Mr. Mayes suggested going to companies such as MasterCard, Express Scripts or Anheuser-Busch and presenting a plan to give them a low cost workforce and a 'Disaster Recovery Center' right here in Missouri. He also said there are U.S. companies subject to data control laws, which means specific types of information can not be sent out of the country, and these companies think nothing of spending millions of dollars to build data centers and infrastructures in rural areas, if they are going to get a long-term, low cost workforce to support it. Mr. Mayes also suggested extending low cost loans to the ten top companies in Missouri for building such data centers. He remarked that the purchasers of rural bandwidth are not only in rural Missouri, they're in the larger cities.

5th Witness: Frank Withrow—Macon County Economic Development

Mr. Withrow testified he doesn't know a lot about the internet, but he does know about employing people. He stated that by running fiber-optics to every business and home in Macon, MO, we have recruited On-Shore and another company from Atlanta, GA and have retained companies that might have left Macon. He said this has brought economic growth to their community on many levels. Mr. Withrow said without high-speed internet, rural areas are very handicapped.

6th Witness: Amy Meyer—State of Missouri Farmers Union

Ms. Meyer testified that the State of Missouri Farmers Union is a statewide family farm organization representing about 1,500 members. She said she and her husband operate a farm north of Hannibal. Ms. Meyer said she can relate to the stories she has heard regarding poor internet access because she works from her home for her job with the Farmers Union office in Jefferson City. She stated she also wanted to emphasize the importance of flexibility, affordability and reliability of internet service. Ms. Meyer reported that 69% of U.S. farms had internet access, but the majority only had the very slowest type of dial-up access, which makes it very difficult for them to conduct much business via the internet. She stated the Missouri Farmers Union supports an effort to provide competitively priced, high-speed internet access to rural America and thinks it should be a main priority of the government.

Ms. Meyer said the Farmers Union urges collaborative efforts by public-private partnerships to leverage internet-based technology to promote producer niche-market opportunities. Ms. Meyer stated high-speed internet access has become essential to create a sustainable rural economy. She suggested internet providers should be offered tax incentives to provide services and urged to invest in bringing high-speed service to rural areas. Ms. Meyer concluded by saying she applauded the efforts of the task force and offered information about a tax credit program in Illinois.

7th Witness: Alan Winders—City Administrator, City of Vandalia, MO

Mr. Winders testified that the City of Vandalia has been a wireless ISP since May 2004 and copied the service from the City of Paris, MO. Mr. Winders said Vandalia became a service provider because they could not find any providers willing to come there; they decided their businesses and residents needed wireless internet access; it's a good economic development tool; and providing this service has probably kept businesses and people from leaving Vandalia. Mr. Winders said they used funds from their Electric and General Fund to start, but as of December 2007 all the funds have been repaid. He reported there are competitive service providers coming into their area and he believes it's because they were able to demonstrate a large demand for high-speed internet service. Mr. Winders stated he was proud of the City Council's decisions and how quickly they were able to accomplish their objectives. He said today it can discourage people from staying in, moving to, or returning to an area if it does not have broadband access. Mr. Winders stated that he was formerly the City Administrator of Storm Lake, Iowa and explained that a six million dollar, general obligation bond issue that was passed and the funds were earmarked to "over-build" the city with a fiber-optic network. He stated within 60 days they had proposals from 2 service providers and for a \$3,000 investment the community was able to secure broadband access and millions of dollars of private investment.

8th Witness: Phil Shatzer—Superintendent, City of Paris

Mr. Shatzer stated in the fall of 2001, numerous business people, such as an insurance company, a hotel and the local bank, told him they would either like to or were required to have internet service. He said he started looking for an internet provider and he couldn't find one willing to come in, so he contacted a few other city administrators and asked how they had procured internet service in their cities. Mr. Shatzer reported after this information was gathered, the Mayor sent out a county appeal asking people if they would be interested in receiving high-speed wireless internet service if the City of Paris was able to provide it - within three days 100 people had signed up. He reported they 'jumped right in, head first' and within a month they began providing service to about 150 customers in March 2002. Mr. Shatzer said by August 2006, there were 2 DSL providers, 1 cable provider and 1 wireless provider in Paris, MO. He stated they were happy with the variety of competition in their city so the City of Paris sold their wireless internet provider network to a private company. Mr. Shatzer remarked in a few years they will probably have to think about finding ways to build a fiber-optic network.

9th Witness: Todd Hays—Farmer in Monroe City, MO and member of Missouri Farm Bureau Board of Directors

Mr. Hays testified he is currently only able to receive dial-up internet service. He remarked they could not get DSL in their area and had tried wireless internet, but they were not able to receive a reliable signal where they live. He said they are on a waiting list for satellite service, but was still waiting after over a year. Mr. Hays said trying to download files with dial-up service is a very slow, very frustrating process. He said having faster internet would save him time and money by allowing him to accomplish more business from home instead of driving into town to try to find needed information. He remarked he had always tried to use the latest technologies on his farm and now he feels he is not easily able to keep up on the latest trends.

10th Witness: John Wood—U.S. Wellness Meat Company

Mr. Wood testified about his internet meat company, which was started November 7, 2000. He reported 97% of their revenue comes from outside the state of Missouri, with sales in all 50 states and several foreign companies. Mr. Wood said this internet business is a type of 'Value Added' agricultural business which can go many, many directions; can bring revenue back to Missouri; and can bring young people back to the land. Mr. Wood stated they started up with dial-up service, but currently have wireless service that really isn't quite fast enough. He said he and his neighbors need faster internet service for their company which promotes value added Missouri agricultural products to the world.

11th Witness: Representative Brian Munzlinger, District 1

Rep. Munzlinger testified that the whole idea is to improve the state's economy through high-speed internet access and studies have shown it is extremely important for growth. He said in his area AT&T and CenturyTel and 2 small wireless companies are the internet providers, but they don't offer services to everyone in the area. Rep. Munzlinger suggested if these companies are not able to service the area, maybe they should sell them to other companies who can provide service. He said mandates requiring companies to provide high-speed internet; requiring access to water towers and other vertical assets be allowed for reasonable fees; and giving sales tax exemptions, sales tax credits, incentives, etc. to companies willing to invest in equipment and other assets used to deploy internet services into the rural areas could be solutions. Rep. Munzlinger concluded by saying we need to be connected to high-speed internet and reliable cell phone service in rural Missouri to make it in the future.

12th Witness: Julie Andresen – Library Director, Hannibal-LaGrange College

Ms. Andresen stated they are very pleased with their high-speed access with MOREnet. She also wished to thank the Representatives for their support of MOREnet and for helping to even the playing field for rural Missouri public schools, libraries, and academic institutions.

13th Witness: Jesse Heimer – Live Auction Ltd

Mr. Heimer stated he wanted to address the question of internet speed. He said his company provides an internet service for auctions of all types by bringing in audio & video equipment so people from all over the U.S. can log in and bid in real time. Mr. Heimer said people in rural areas on dial-up service can not participate because the speeds are just too slow. He reported the necessary internet speed for participants is a minimum of 300 k up and about 700–800 k down.

14th Witness: Terry Daw – Daw Repair, Farmington, MO

Mr. Daw testified they needed faster access to the internet for their business in order to download repair graphics, parts pictures and break-downs from Case, Deere, etc. He stated dial-up is just too slow and unreliable. He gave examples of how he sometimes has to spend 3–5 hours trying to look for parts and how he sometimes spends hours trying to download repair documents, only to lose the connection. Mr. Daw urged the Task Force to not concentrate on getting just minimum high-speed internet services to the rural areas, but to try to keep in mind how technology continually keeps upgrading. He said he can not get DSL or wireless service at his home / business. Mr. Daw said he has looked into satellite internet service, but there is a very long waiting list and his satellite TV service is not always very reliable so he's worried about that, as well as the high cost of it.

=====WRITTEN TESTIMONIES=====

Written testimonies in their entirety can be found at www.ltgov.mo.gov.

Linda & Robert M. Heintz, Bourbon, MO:

Crawford Electric has been providing internet services (dial-up) through Fidelity in Sullivan, Mo since we have lived in Bourbon (year 2000). Effective 1/1/08 they are no longer going to provide this service due to lack of customer needs of the dialup services. Fidelity has agreed to provide this for now. In speaking with them they did not say for how long the service will continue. Our telephone provider is CenturyTel and they do not offer Dialup services for this area.

Tom Bliss, Executive Director for the Mo-Kan Regional Council, St. Joseph, MO:

Mr. Bliss provided written testimony regarding his experience with the availability of broadband in northwest Missouri. He currently serves on the Regional Technology Infrastructure Task Force that serves a 12-county area and whose goal is to close that “last mile” of broadband access to all residents of northwest Missouri. Mr. Bliss described his experience with a couple of projects that related to broadband and the issue of only having dial-up Internet access in the needed areas. While the two issues have been solved through a CDBG grant from the Missouri Department of Economic Development and assistance from the USDA-Rural Development, Mr. Bliss stated in his testimony that “Technological advances such as the Internet have introduced the possibility of placing relevant business and community data online in a format that is both readily accessible and easily updated for users well beyond those in the community where the planning effort occurred. The Internet is the tool that will place rural areas on a level playing field with economic developers in larger, well established urban areas, allowing them to compete in an unbiased system for the benefits and new jobs that development brings. The lack of broadband services in rural Missouri not only deters the establishment of new businesses, it also limits existing businesses because they are unable to transfer information and offer competitive services.

Jim Hart, President, Pneumatek, Inc., Thayer, MO:

Mr. Hart is the president and operator of Pneumatek, Inc. in Thayer, MO and he submitted testimony to the task force regarding the Internet access deployment history of his company.

He serves clients including banks, cell phone agents, city government, college students, dental, engineering, farm and feed supply, medical, pharmacy, publisher, radio shack, real estate, restaurant, trucking and a UPS store, as well as residential clients. Most clients are businesses.

He stated there are economic, geographic and market barriers to Internet deployment. An option he recommended to increase deployment would be funding to assist economically depressed rural Missourians in equipment purchase, to collocate on and/or build towers thus overcoming geographic barriers and provide subsidies to enable local broadband providers to compete with incumbent local exchange carriers.

ATTACHMENT C: WHAT IS BROADBAND?

What is Broadband?

To evaluate the status of and set metrics for broadband deployment in California, the CBTF developed a working definition of broadband.

- Broadband is defined by the ability to perform online applications at a reasonable performance level for the end user.
- Broadband is a range of speeds and will evolve over time as applications and needs change. It is a summation of the downstream data rate (transmission to the user) and upstream data rate (transmission from the user).
- The ratio of the downstream and upstream must be a minimum of 10:1 (the ratio of the downstream and upstream data rates can increase from 10:1 to a fully symmetrical 1:1)
- Broadband must have the capability to be always on, and have a sustainable steady state data rate.
- Burst-able speeds provide benefit to users, but should not be considered in the same manner as steady data rates.
- The minimum speed required to use the most basic of broadband-enabled applications is 512kbps, and this minimum data rate is expected to increase over time.
- An increasing scale that continues to differentiate within speed tiers allows stakeholders to measure specific broadband availability over time.

Upstream & Downstream Speed Range	Applications	
500kps—1Mbps	<ul style="list-style-type: none"> • Voice over IP • Basic Email • Streaming Music (caching) 	<ul style="list-style-type: none"> • SMS • Web Browsing (simple sites) • Low Quality Video (highly compressed)
1 Mbps—5Mbps	<ul style="list-style-type: none"> • Web Browsing (complex sites) • Remote Surveillance • File Sharing (small/medium) • Digital Broadcast video (1 channel) 	<ul style="list-style-type: none"> • Email (larger size attachments) • IPTV-SD (1–3 channels) • Telecommuting (ordinary) • Streaming Music
5 Mbps—10Mbps	<ul style="list-style-type: none"> • Telecommuting (converged services) • IPTV-SD (multiple channels) • Video on Demand 3D • Video Streaming (2-3 channels) • Low Definition Telepresence • Medical File Sharing (basic) • Remote Education 	<ul style="list-style-type: none"> • File Sharing (large) • Switched Digital Video • Broadcast SD Video • HD Video Downloading • Gaming • Remote Diagnosis (basic) • Building Control & Management
10 Mbps—100Mbps	<ul style="list-style-type: none"> • Telemedicine • Broadcast Video SD and some HD • Gaming (complex) • High Quality Telepresence • Smart/Intelligent Building Control 	<ul style="list-style-type: none"> • Educational Services • IPTV-HD • Telecommuting (high quality video) • HD Surveillance
100 Mbps—1Gbps	<ul style="list-style-type: none"> • HD Telemedicine • Broadcast Video full HD • Video on Demand HD • Remote Server Services for Telecommuting 	<ul style="list-style-type: none"> • Multiple Educational Services • Full IPTV Channel Support • Gaming (immersion)
1 Gbps—10Gbps	<ul style="list-style-type: none"> • Research Applications • Live event digital cinema streaming • Interactive remote visualization & virtual reality • Remote supercomputing 	<ul style="list-style-type: none"> • Telepresence using uncompressed high definition video streams • Telemedicine remote control of scientific/ medical instruments • Movement of terabyte datasets

ATTACHMENT D: SUMMARY OF OTHER STATES

State	Legislation	Date Adopted	Description	Type of Program
CA	CA S.B. 323	Regular Session Ended 09/12/2007	Requires the Public Utilities Commission to report the availability of two-way broadband communications to the Legislature beginning in 2009.	Assessment
CA	CA S.B. 1013	Regular Session Ended 09/12/2007	Requires the Public Utilities Commission to annually designate a class of broadband service necessary to meet minimum residential communication needs, including access to electronic information services at reasonable download and upload speeds.	Definition
KY	KY S.B. 74	Act 37 Approved 03/21/2007	Requires tracking of broadband deployment. Encourages broadband deployment by enabling the creation of public-private partnerships. Requires that public notice be given and public funds be available before contracts or grants may be awarded.	Assessment/ Public-Private Partnership
NC	NC H.B. 757	Regular Session Ended -08/02/2007	Creates the legislative study commission on rural internet access and appropriates funding for the study.	Assessment
NC	NC S.B. 1068	Regular Session Ended 08/02/2007	Removes the sunset on the e-NC Authority; increases the distribution to local governments of the sales tax on telecommunications and video programming; earmarks a portion of the state's share of the sales tax on these services for grants for broadband deployment, peg channels, and community media centers.	Deployment
OH	OH HB 72	To House Committee on Public Utilities 02/27/2007	Creates the Ohio Broadband and Wireless Telecommunications Task Force to examine and make recommendations on the availability of broadband and wireless telecommunications in Ohio and any economic impact such availability creates, the present or future availability of broadband and wireless telecommunications in all Ohio counties, and any other issues the Task Force deems appropriate.	Assessment
OH	OH S.B. 24	Approved by Governor 06/30/2007	Provides that if the director of development determines that a grant from the industrial site improvement fund may create new jobs or preserve existing jobs and employment opportunities in an eligible county, the director may grant up to \$750,000 for infrastructure improvements, including broadband installation.	Deployment
SC	SC H.B. 3569	Act 169 Approved 06/14/2007	Creates the South Carolina Wireless Technology and Communications Commission to oversee implementation of a statewide wireless broadband network; specific duties include leveraging state-owned telecommunications infrastructure and coordinating government and private entities.	Coordination and Leadership
TN	TN H.B. 2099/S.B. 1580	Chapter 164 Approved 05/15/2007	Expands membership of the Tennessee Broadband Task Force include a representative from the department of education and requires the task force to conduct an annual broadband deployment assessment and submit a report regarding same.	Assessment
TN	TN H.B. 2100/S.B. 1572	Regular Session Ended 06/12/2007	Creates the nonprofit Tennessee broadband access corporation to facilitate the deployment of broadband access to every home and business in the state by 1) tracking the deployment and adoption of telecommunications and information technology; 2) enabling public-private partnerships among telecommunications providers and relevant government entities; and 3) serving as a resource for citizens and other government agencies to address concerns and questions regarding telecommunications and information technology issues.	Coordination and Leadership
TN	TN H.B. 2102/S.B. 1715	Regular Session Ended 06/12/2007	Requires the department of economic and community development to establish the ConnectTN program to support statewide broadband deployment.	Coordination and Leadership
TN	TN H.B. 2103/S.B. 1716	Regular Session Ended 06/12/2007	Establishes the ConnectTN program to promote broadband expansion throughout the state. Also authorizes data collection from any public or private entity so that Tennesseans' access to broadband technologies can be assessed.	Assessment
TN	TN H.B. 2104/S.B. 1717	Regular Session Ended 06/12/2007	In conjunction with the ConnectTN program, directs the department of economic and community development to work closely with community leaders to develop and implement technology growth strategies.	Coordination and Leadership

ATTACHMENT E: RFI—HIGH-SPEED INTERNET ACCESS CONSULTING SERVICES

Dear Potential Vendor:

The Rural High-Speed Internet Access Taskforce is seeking information from entities and consultants with experience in planning and assisting a process for providing broadband Internet services to rural areas in Missouri not currently serviced with broadband Internet services by private sector companies. The goal is to create a plan, timeline and incentive model for private enterprises or public-private partnership to offer Missouri households broadband Internet services that are affordable to the consumer and economically viable to the service provider.

BACKGROUND

In an effort to provide high-speed Internet access to Missouri's un-served households, the Governor of Missouri has issued an executive order creating and establishing The Rural High-Speed Internet Access Task Force representing individuals, organizations, and industries impacted by the unavailability of high-speed Internet services predominately in rural areas of Missouri.

The task force is charged with:

- 1) Assessing the current level of Internet access available in Missouri;
- 2) identify barriers to deployment to underserved areas including economic, geographic, regulatory, and market barriers;
- 3) identify potential options to increase the deployment of high-speed Internet access in underserved communities;
- 4) Review best practices in other states to increase high-speed Internet access; and,
- 5) Recommend statutory, regulatory, and police changes needed to increase the availability of high-speed Internet services across Missouri.

REQUEST FOR INFORMATION (RFI)

This RFI provides an opportunity for respondents to submit their information relevant to assisting the Task Force in meeting the charges identified by the Governor. The comprehensive program will include but not be limited to:

1. Street Level Broadband Infrastructure Mapping clearly demonstrating areas not served by broadband Internet and in those areas that are served, the level and type of broadband Internet service;
2. Strategy and survey of projects for rural broadband Internet penetration in other states as well as their positive and negative performance attributes (market intelligence);
3. Consulting cost (flat rate and fixed staffed hour rate) and time estimates for working with local communities in establishing a plan for providing a commercially viable broadband Internet solution to un-served areas;
4. Process and plan for implementing a strategy for demand creation and community level by enlisting local community leaders to develop and implement technology growth strategies for local government, business, and industry involvement in roll-out of a commercially viable broadband Internet service to un-served areas; and
5. Other ideas and associated costs for allowing broadband Internet penetration into un-served areas of Missouri, e.g., providing subsidized or donated computers with high-speed Internet capabilities to lower income households.

As an initial step in the procurement process, the attached Request for Information has been prepared to assist the Rural High-Speed Internet Access Taskforce in fully understanding the scope of services available to the citizens of the. After receiving the RFI responses, the State of Missouri may begin drafting a formal Request for Proposal (RFP) document and conduct a competitive procurement process.

If your organization: (1) is willing to submit general information for one or all of the above bullet points, please submit your written response to this document to my attention NO LATER THAN January 7, 2008.

ATTACHMENT F: REPLIES TO RFI • JAN. 15, 2008

KEY COMPONENTS	Connected Nation Washington, DC	Cost Quest Associates Cincinnati, OH
MAPPING	<ul style="list-style-type: none"> — <i>GIS mapping technology</i> — <i>Neutral entity to protect provider data</i> — <i>Verify provider data at community level</i> 	<ul style="list-style-type: none"> — <i>Mapping demand and supply side</i> — <i>Investment models to build out to the unserved areas</i> — <i>Consider if infrastructure is a sensitive asset</i>
MARKET INTELLIGENCE	<ul style="list-style-type: none"> — <i>Barriers to adoption</i> <ul style="list-style-type: none"> • Lack of availability • Computer ownership • Computer literacy • Cost • Perceived lack of value — <i>\$562,000 (Mapping and Marketing Intelligence)</i> 	<ul style="list-style-type: none"> — <i>Encourage providers to push access to high-speed services while stimulating demand</i> <ul style="list-style-type: none"> • Inventory barriers • Cost to unserved areas — <i>Hired by Wyoming</i> <ul style="list-style-type: none"> • Assess current coverage • Estimate costs of various technologies — <i>Broadband Gap Report</i> <ul style="list-style-type: none"> • estimate build out investment; should it be done?
CONSULTING SERVICES	<ul style="list-style-type: none"> — <i>Identify Appropriate Technology</i> <ul style="list-style-type: none"> • Fixed wireless • DSL • Cable • Mobile (Cell) wireless — <i>Help providers expand</i> — <i>Promote available services</i> — <i>\$210,000</i> 	<ul style="list-style-type: none"> — <i>Approach includes a costing model for the deployment of broadband service</i> — <i>Combined cost information with demand data for "Low Hanging Fruit"</i> <ul style="list-style-type: none"> • Identified break-even points to determine how best to encourage providers to deploy service (<i>RUS Loans, Grants, etc.</i>) — <i>Wyoming <\$1,000,000</i>
DEMAND CREATION & PLANNING	<ul style="list-style-type: none"> — <i>County by county technology awareness and planning</i> <ul style="list-style-type: none"> • Inventory state-private sector resources for possible deployment at community level • Leverage community leadership in technology planning; e-Community Leadership team • Monitor/measure progress — <i>\$1,304,000</i> 	<ul style="list-style-type: none"> — <i>Understand where demand exists prior to "create" demand</i> — <i>Informational programs</i> <ul style="list-style-type: none"> • Schools, hospitals to be aware of Federal support programs) — <i>"Cost-to-Serve"</i> <ul style="list-style-type: none"> • Prime demand to make roll-out commercially viable — <i>Web-based mapping & query tool see high-speed options per location</i>
LOWER INCOME HOUSEHOLDS OTHER	<ul style="list-style-type: none"> — <i>Leadership-Governor Blunt</i> — <i>Public-Private Partnership</i> — <i>Data collection and mapping</i> — <i>Technology community cooperation</i> — <i>Demand creation</i> — <i>Localized technology planning</i> — <i>\$50,000</i> 	<ul style="list-style-type: none"> — <i>Fund low-income programs</i> <ul style="list-style-type: none"> • Lifeline & Link-up to develop and implement a broadband program — <i>Establish definitional standards</i> <ul style="list-style-type: none"> • Broadband • Underserved

KEY COMPONENTS	Adesta Omaha, NE	Ion Consulting Denver, CO	Socket Columbia, MO
MAPPING	<ul style="list-style-type: none"> — <i>Enlist assistance of incumbent providers</i> — <i>Utilize Master Street Address Guide (MSAG)</i> — <i>Understanding of current state of broadband availability</i> — <i>\$100,000</i> 		— NO RESPONSE
MARKET INTELLIGENCE	<ul style="list-style-type: none"> — <i>Benchmarking-Best Practices</i> <ul style="list-style-type: none"> • Diverse business models • Interviews and visitations — <i>Four Step Process</i> <ul style="list-style-type: none"> • Define participants • Define data elements • Summarize findings • Publish results — <i>\$50,000</i> 		— NO RESPONSE
CONSULTING SERVICES	<ul style="list-style-type: none"> — <i>Actively involve communities in the planning process</i> <ul style="list-style-type: none"> • Work with community leaders • Establish understanding of "Current State" — <i>\$80,000</i> 		— NO RESPONSE
DEMAND CREATION & PLANNING	<ul style="list-style-type: none"> — <i>Develop community specific business plan</i> <ul style="list-style-type: none"> • Identify efficient manner to stimulate demand — <i>\$55,000</i> 		— NO RESPONSE
LOWER INCOME HOUSEHOLDS OTHER	— NO RESPONSE		<ul style="list-style-type: none"> — <i>Give equal consideration to all technologies</i> — <i>Assess areas lacking broadband access</i> — <i>Subsidy program or tax credit system available to all providers and not limited to historic technologies</i> — <i>Adopt policies that promote competitive entry</i>