Task Force Policy Recommendations

- **Update Minnesota's statutory broadband speed goal** – The Task Force recommends updating Minnesota's statutory speed goals to: TBD

- **Infrastructure grant program** - The Task Force recommends appropriating $100 million to the Border-to-Border Broadband Development Grant Program in FY2017. While this figure is a fraction of the total capital investment required to meet the state's border-to-border broadband objective, it is nonetheless an important contribution.

- **Create an Office of Broadband operating fund to promote broadband adoption and use** - The Task Force recommends that the fund be managed by the Office of Broadband Development, at a specific amount to be determined between the Office of Broadband Development and the legislature, that will allow the Office to advance and support programs and projects aimed at promoting broadband adoption and use.

- **Increase telecommunications aid for schools and libraries**- The Task Force recommends funding library telecommunications aid at $3.3 million in FY2017, and increasing the telecommunications aid equity for schools to $4.875 million in FY2017. This funding will expand the impact of the program in underserved areas of the state and help ensure every child has access to reliable broadband service.

- **Make sales tax exemption for telecom permanent** – The Task Force recommends the existing sales tax exemption for telecommunications equipment be made permanent to provide certainty to providers and enable thoughtful, future-oriented investment planning. Further, the Task Force believes policy makers should examine the possibility of expanding the exemption to include additional equipment (such as fiber) that would assist in network development efforts.

- **Reform regulations of Minnesota's telecommunications industry** – The Task Force recommends reforming the regulatory framework underlying Minnesota's telecommunications industry to reflect the modern communications era, bringing regulatory certainty, competitive equity, and relevance to an industry in the midst of dramatic change.

- **Review existing permitting criteria to see where there might be opportunities for efficiencies** – The Task Force recommends an administrative review of existing permitting requirements impacting broadband network deployment to determine where there may be opportunities to ensure the most efficient processes are in place. Uncertainty over permitting timelines and requirements can delay or prevent network deployments from moving forward.

Proposed Recommendations:

1. **Maximize benefits of CAF2 funding for Minnesotans** - The Task Force recommends that Minnesota legislature direct the Office of Broadband Development to work aggressively with the providers receiving CAF2 funds to combine the state's Border-to-Border Broadband funds with CAF2 funding to ensure that those combined investments create networks that meet the scalable 100 Mbps services Border-to-Border Broadband Fund criteria.

2. **Promote Public-Private Partnerships -** The Task Force recommends that the Minnesota legislature direct the Office of Broadband Development to make evidence of strong commitment to public-private partnerships a criterion for the Border-to-Border grant program.

Universal access and high-speed goal. It is a state goal that, no later than 2022, all Minnesota businesses, homes, and institutions, have access to high-speed broadband that provides minimum download speeds of at least 25 megabits per second and minimum upload speeds of at least 3 megabits per second. Also by 2026, all Minnesota businesses, homes, and institutions will have access to at least one provider of broadband with speeds of at least 100 Mbps download and 10 Mbps upload.

Proposal: Create a program or mechanism to coordinate rural broadband installation with state and federal programs assisting hospitals, schools, libraries, and public safety facilities with obtaining broadband

Example: The Task Force heard from a number of stakeholders throughout the year that there are a number of federal programs designed to ensure that specific community resources (including hospitals, schools, libraries and public safety facilities) have access to high speed broadband service. The Task Force concludes that there should be a resource within state government, such as the Office of Broadband Development, to serve as a clearinghouse for this information.

Estimated Costs: The Task Force recommends the state seek federal funds to accomplish this goal.

Outcomes: The Task Force believes that implementation of this proposal would ensure that Minnesota is well positioned to take advantage of federally-funded opportunities to incent broadband investment (particularly in rural areas) and leverage these opportunities with future state investment to maximize impacts. This proposal could also serve as an outreach tool for the state in order to proactively encourage project development and to speed completion of on-going projects.

Metrics: Successful implementation of this proposal could be measured by tracking the level of federally-funded investment in broadband installation projects in Minnesota and by tracking outreach contacts with Minnesota businesses and consumers.

Proposal: Implement a formal "Dig Once" process to coordinate highway construction and broadband deployment projects

Example: This year, Arizona enacted the "Digital Arizona Highways Act of 2012[22]" which allows the state to install broadband conduits in conjunction with rural highway construction projects. The Task Force recommends that Minnesota establish a similar formal process to both allow the state to install conduit and provide an opportunity for broadband providers to install conduit, fiber, etc. when road construction projects are already scheduled to maximize opportunities for broadband providers and state, county and local transportation departments to collaborate.

Estimated Costs: .5 FTE.

Outcomes: The Task Force believes this proposal will reduce costs related to a lack of coordination and communication regarding rights-of-way, roadway and broadband infrastructure between transportation agencies and broadband providers. This would reduce costly multiple openings of infrastructure corridors, minimize inconvenience for travelers and citizens while reducing infrastructure project length. In addition, the Task Force believes it will spur engagement between state government and private providers. Ultimately, the Task Force believes enacting this proposal will help advance Minnesota towards achieving its statutory broadband goals.

Metrics: Successful implementation of this proposal could be measured by tracking the number of broadband installation projects that are undertaken in conjunction with road construction projects in Minnesota.

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[22] http://www.azleg.gov/DocumentsForBill.asp?Bill_Number=SB1402&Session_ID=107

Include reference to MN Broadband vision statement

Suggested language for addition:

The Taskforce encourages the Minnesota Legislature and Governor to provide sufficient leadership, resources and legal framework to ensure that the State of Minnesota achieves, by 2020, this vision, developed by over 170 Minnesotans from across the state in four sessions over three days, during a state-wide broadband conference co-sponsored by DEED and Blandin Foundation:

"Everyone in Minnesota will be able to use convenient, affordable, world-class broadband networks that enable us to survive and thrive in our communities and across the globe."

Because broadband is essential for community vitality, competitive economic development, affordable and quality health care, equitable education and effective government, achieving this vision is critical to a vibrant and equitable Minnesota. Currently, vast areas of Minnesota and thousands of Minnesotans lack access to affordable and reliable broadband services that meet or exceed the federal broadband standard of 25/3 Mbps. The long and short-term benefits of achieving Minnesota's broadband vision will be spread widely across our entire Minnesota community, while failing to reach the vision will sentence unserved rural areas to second class status and permanent decline.

Move primer to Appendix.

Page 4:

Add to chart a column that shows which technologies can deliver which speed. The speeds/tasks included in the chart are so low any technology will do them.

Below table 3 *reinsert into draft*:

> **Snapshot of Six Minnesota Counties and the Factors that Contribute to the Quality of Broadband Available**
>
> **Red Lake County – Strong Local Providers Leave Red Lake Well Served**
> **Broadband Access: 99.99%**
> Red Lake has always been one of the top served counties in Minnesota, impressive given their population density is solidly rural with 4 homes per sq mile and at $47,569, their median income is considerably lower than the state's median of $59,836.
> What Red Lake does have is two local, independently owned broadband providers: Garden Valley Telephone Cooperative and Sjoberg Cable.
>
> **Lac qui Parle County – Public Private Partnership Entices Federal Funding**
> **Broadband Access: 99.36%**
> In 2010, a partnership between Famers Mutual and the LqP Economic Development Authority (EDA) received $9.6 million in federal funding (ARRA funding) to deploy FTTH. It's a loan; both

partners share responsibility for paying it back. In 2013, Farmers began singing up their first customers.

Farmers built and operates the network. The EDA has focused on building demand through digital inclusion efforts such as teaching businesses to build to use social media and the Computer Commuter, a bus outfitted with computers and WiFi access that visits towns around the county on a weekly bases – bringing the tools and one-on-one training to patrons.

LqP has benefitted from broadband notably for being an area that attracts "Brain Gain" families or families who are returning to a rural area after a stint in more urban locations. Brain Gainers look for place with small town feel, high quality of life and broadband that allows them work remotely at jobs located anywhere.

Dakota County – Local Government Takes Lead, Residential and Business Access Follows
Broadband Access: 97.17%

Dakota County has worked with local providers to create a government fiber network that connects government building. It's an ongoing investment but County telecom costs have dropped from $700,000 to $15,000 and opens the door to a wide range of e-government services such as improved traffic management.

Dakota partners with other anchor tenants and has plans to work with third party providers who will be able to offer services to local businesses and residents. In 2014, their broadband access was 64% now it is 97%, their investment is beginning to pay off in lower county bills and higher local access.

Kanabec County – Not Gaining Traction despite Community Efforts
Broadband Access: 28.05%

Kanabec County has been striving to improve coverage for years. In 2012, they partnered up with other counties (Aitkin, Carlton, Mille Lacs and Pine) to address broadband access with regional planning and convening. Their household density is higher than Red Lake (12/sq mile) and median income is the same. Yet, incumbent providers have not worked out a business case to merit investment. There are five providers of wireline broadband in the area (and 8 wireless). Kanabec has commissioned a broadband feasibility study, hosted conferences, worked on building demand with digital inclusion efforts and talked extensively with incumbent providers, but that has not led to better broadband. They have discussed cooperative models and other options but again nothing has come to fruition.

Three providers in the area (CenturyLink, Windstream and Frontier) have accepted CAF 2 (Connect American Fund) funding, which means the area is eligible to receive upgrades to at least 10 Mbps down and 1 Mbps up over the next five years. Unfortunately that will not get them to Minnesota's definition of broadband but the providers are not constrained to those speeds they are encouraged to build more.

Wabasha County – Access in Towns But Limited in the Outskirts
Broadband Access: 75.34%

As early as 2007, parts of Wabasha County had FTTH, yet in 2010, Wabasha County made the FCC list of the least served counties in Minnesota. They are an example of Swiss cheese topology: there is connectivity in the towns but not in the space between. Their situation has improved greatly over the years, leaping to 70 percent soon after the FCC surveys followed by incremental increase over the years – climbing to 75 percent coverage.

They have a mix of locally owned (BEVCOMM, NU-Telecomm, Hiawatha Broadband), regionally owned (Midcontinent Communications) and national (CenturyLlnk) providers. Hiawatha

Broadband has been recognized for their leadership in services in the area; Mediacom has announced a few major upgrades in the area. CenturyLink has accepted CAF 2 (Connect American Fund) funding, which means their coverage area is eligible to receive upgrades to at least 10 Mbps down and 1 Mbps up over the next five years but that does not meet Minnesota goal speeds. The question is whether CenturyLink aim for the minimum coverage or look to bring speeds closer state goals or to the fiber available in neighboring towns.

Cook County – Federal Funding Supports Growth of Local Cooperative
Broadband Access: 43.57%
Cook County is poised to become a Cinderella story; they have gone from 20.70% coverage in 2014 to 45.57 percent in 2015 and access is increasing. Cook County's household density is .7 per sq mile and it's built on rock. It was difficult to make a business case to serve the areas until one of the local providers (Arrowhead Electric Cooperative) received Federal support (ARRA funding) to deploy middle mile infrastructure. In January 2014, they announced the last built of buildout and predicted home access would soon follow.
Cook County has also been working on broadband adoption. They were early partners with the Blandin Foundation, participating in the federally supported (again ARRA funding) Minnesota Intelligent Regional Communities (MIRC) initiative. They encouraged greater use of technology with better tourism sites, health applications and training for residents and business owners. Cook County is still on the far end of the digital divide but with federal funding, local business support and an engaged citizenry they are poised for an upward trajectory.

Page 5

One costly barrier for SMBs has been access to technology. Traditionally, businesses buy fixed technology assets that have fixed capacity. This has a significant upfront expense that limits options for many SMBs. The emergence of cloud technologies has transformed this segment, allowing SMBs to pay only for the storage they consume. A Deloitte survey[1] found that SMBs utilizing the cloud to meet their technology needs grow 26 percent faster and are 21 percent more profitable than their peers who do not. Reliable, high-speed connectivity is one key to enable SMBs to successfully utilize the cloud. Many backend office systems (i.e., accounting, payroll, human resources, Adobe, Microsoft Office, etc.) are migrating to a software as a service (SaaS) model. This puts small businesses located in rural areas without access to broadband at a competitive disadvantage.

Question: Since the TF did not go into this topic, should it be included in the report?

Page 15

Change "26 percent of schools in Minnesota need upgrades to fiber" to...
"26 percent of schools in Minnesota lack a fiber connection"

Page 20:
Add high-cost support requirement to supplement short section on the FCC's "broadband" definition? Or eliminate section heading?

[1] http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/gx-tmt-small-business-big-technology.pdf.

Add RoR funding to timeline of state and federal broadband activity.

Page 27

Question: Regarding the following paragraph, doesn't the 2014 revamp of E-Rate now provide both funding and discounts?

The FCC's Schools and Libraries program (referred to as "E-Rate") was created as a part of the federal Telecommunications Act of 1996. The goal of the E-Rate program is to make telecommunications and information services more affordable for schools and libraries in America. The amount of E-Rate funding to a school or library depends on its level of poverty and location. The discounts range from 20 to 90 percent, with higher discounts for higher poverty and more rural schools. The telecommunications equity aid fund was designed to help cover the remaining costs not funded by E-rate. However, that fund has not kept pace with the rising costs of telecommunications.

Pages 28-29

Add Arrowhead – CTC project.

Delete: "The cooperative has a plan to ultimately deliver fiber-based services throughout its service territory." (Last sentence of first paragraph on page 29.)

Add a new last sentence to para. on RS Fiber: _Cooperatives offer some of the best connectivity in rural regions of the state._ (Last sentence of first paragraph on page 29.)

Delete "Annadale" paragraph for page 29.

Add these additional examples to this section:

Eagan's modest network, AccessEagan -- a 16-mile high-capacity fiber-optic network available to any telecommunications provider that wants to serve Eagan businesses -- has attracted DataBank, which plans to turn the former 88,000-square-foot Taystee Foods building into a data center to serve the region. The company estimates it will spend about $9 million in site and building improvements and almost $40 million more in equipment costs.

Scott County's fiber network has helped create more than 1,000 jobs and tremendously improved access in area schools.

Windom's municipal network, WindomNet, is one of the most advanced networks in the state and has been expanded to serve nearby unserved towns. More than $400,000 in regional savings have been achieved from WindomNet every year, and the network helped keep 47 jobs in the community from one employer alone that previously couldn't get the service it needed.
SOURCE: _"All Hands On Deck: Minnesota Local Government Models for Expanding Fiber Internet Access,"_ Institute for Local Self Reliance, 2014.

REINSERT the section on Public Private Partnerships:

The term "public-private partnership" only vaguely describes how the public and private sector may work together to deploy broadband. Historically, much of rural America was served with telephone and electricity only through public sector financing arrangements, clearly a public-private partnership. Today, there are a variety of mechanisms for government entities to encourage deployment of broadband services.

The table below provides a range of examples.

Key Partnership Elements	Relationship Between Government and Provider	Examples
Grants and loans to broadband providers	Provider must meet lender and grantor requirements	Border to Border Broadband Grants, IRRRB, RS Fiber communities, City of Little Falls
Joint build of broadband facilities	Fiber management, shared facilities, revenue sharing, possible competitors	Scott and Dakota Counties
Government as anchor tenant on fiber or wireless network	Government as provider customer	City of Minneapolis, Anoka and Carver Counties
Government owned fiber or conduit network w/provider lease/purchase of fiber	Provider as government customer, possible fiber management by providers	Cities of Eagan and Burnsville, Northeast Service Cooperative
Private provider hired as network operator	Provider is a contractor to the government	Pine City, Burnsville
Use of government water towers for wireless	Provider as government customer	Many communities

Pages 29-30: Continued Private Investment

Expand to include some of the Border-to-Border success stories, such as Federated.

Page 31: Section on Affordability

In describing the subscription discount programs – such as Lifeline from Midcontinent, Internet Essentials from Comcast, and Basic Internet from CenturyLink - *Add context:* how many households/percentage of qualifying Minnesota households receive assistance through these programs. That is: how much of a solution are these programs relative to the need they seek to address?

Add back in the entire section: Bridging the Rural/Urban Digital Divide, *removed in its entirety in this revised draft:*

> Broadband access in rural areas continues to lag behind broadband access in urban settings. The Pew Research Center found that 87% of urban adults are internet users, compared to only 79%

of rural adults.[2] The National Broadband Map says that 99% of urban Minnesotans have access to broadband with download speeds greater than 25 Mbps, but only 66% of rural Minnesota have such access.[3]

Extensive studies examine and document the reasons for this rural/urban divide.[4] Expanding existing wired or wireless service to increasingly difficult-to-reach rural areas is more costly than upgrading urban areas. It also offers a lower financial return to carriers because rural areas have a significantly lower population density. Rural carriers often require substantial government assistance in the form of grants, loans, or direct support to build and maintain broadband capable networks.

For example, cooperatives, which benefit from government assistance, are able to provide the best broadband services in Minnesota.

Started years ago by local community leaders to provide needed rural telephone services, telephone cooperatives have now transformed their copper networks to virtually 100% fiber-to-the-home broadband networks. Starting this investment in their home telephone exchange areas, they have moved into adjacent communities and rural areas due to demand by bandwidth-hungry residents and businesses. Consolidated, Farmers Mutual, Federated, Park Region, Paul Bunyan and West Central are just some of these broadband cooperatives.

Electric cooperatives also provide broadband Internet. Minnesota examples include Arrowhead Electric (FTTH), Mille Lacs Energy and Cooperative Light and Power (fixed wireless) and the Wild Blue satellite consortium. MVTV Cooperative delivers fixed wireless services in Southwest Minnesota, transitioning from their tradition of wireless cable television services. It is interesting to note that Arrowhead Electric follows in the steps of Boreal Access, a cooperative started in Cook County at the dawn of the Internet age to provide dial-up and DSL Internet, thus continuing a tradition of cooperatively provided Internet.

Cooperatives have proven themselves as a good model for serving hard to serve areas in Minnesota:

- Building a business case for broadband investment in unserved or underserved areas of Minnesota is very challenging for investor-owned providers.

- Cooperatives are member-owned and can be more patient investors with delayed or minimal ROI requirements.

- Community and economic development benefits derived from broadband investments, both the intrinsic values and the increased community sustainability, are highly valued by locally owned cooperatives.

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[2] See http://www.pewinternet.org/2015/09/22/digital-divides-2015/.
[3] See http://www.broadbandmap.gov/download/Broadband%20Availability%20in%20Rural%20vs%20Urban%20Areas.pdf.
[4] See, e.g., NTIA, Broadband Availability Beyond the Rural/Urban Divide (May 2013), available at http://www.ntia.doc.gov/files/ntia/publications/broadband_availability_rural_urban_june_2011_final.pdf.

- Establishment of cooperatives may be less objectionable to those who oppose government broadband networks.

- There is an established history of public-private partnerships between government units and cooperatives, such as Arrowhead, CTC, Farmers Mutual, and Federated. Returns from successful partnerships remain in the community.

The significant differences in broadband investment and services delivered by cooperatives and privately-held/investor-owned providers are growing. Local ownership, long-term commitment to place, a focus on member services and the shared benefits of community and economic development – these are some of the reasons that cooperatives are a good solution for meeting the hardest-to-serve areas in Minnesota.