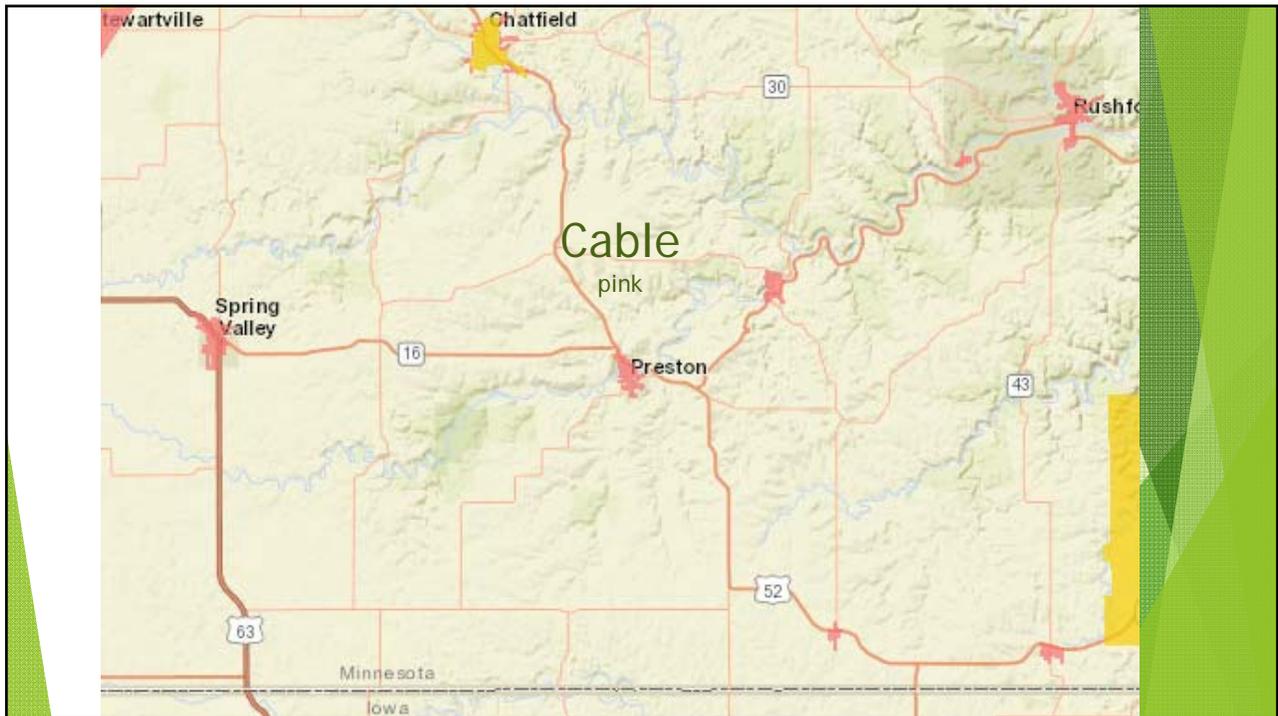


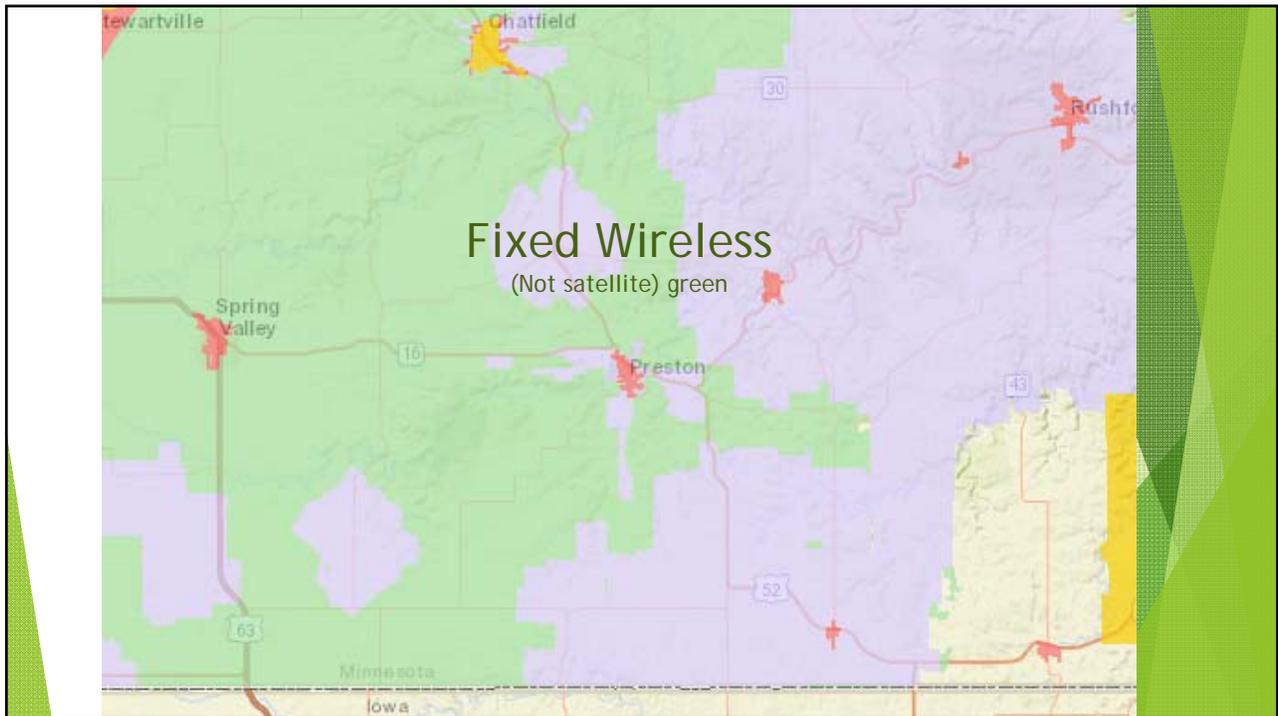
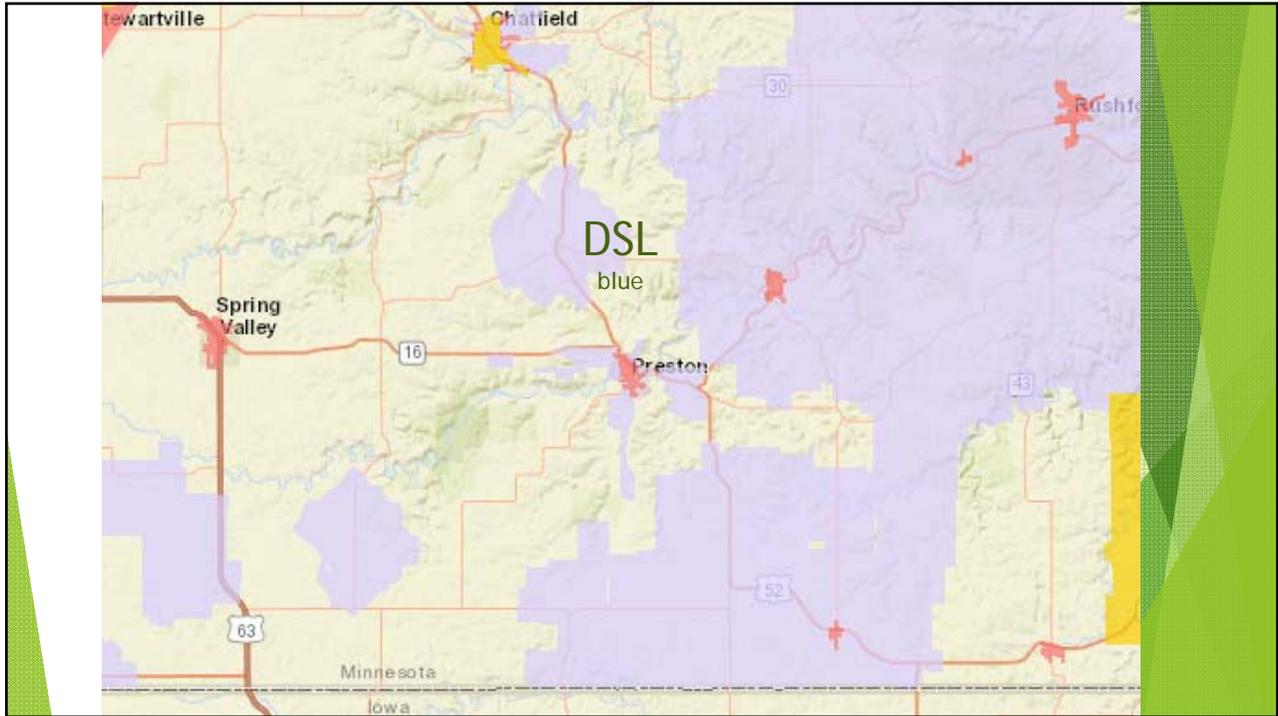
Fillmore County Broadband

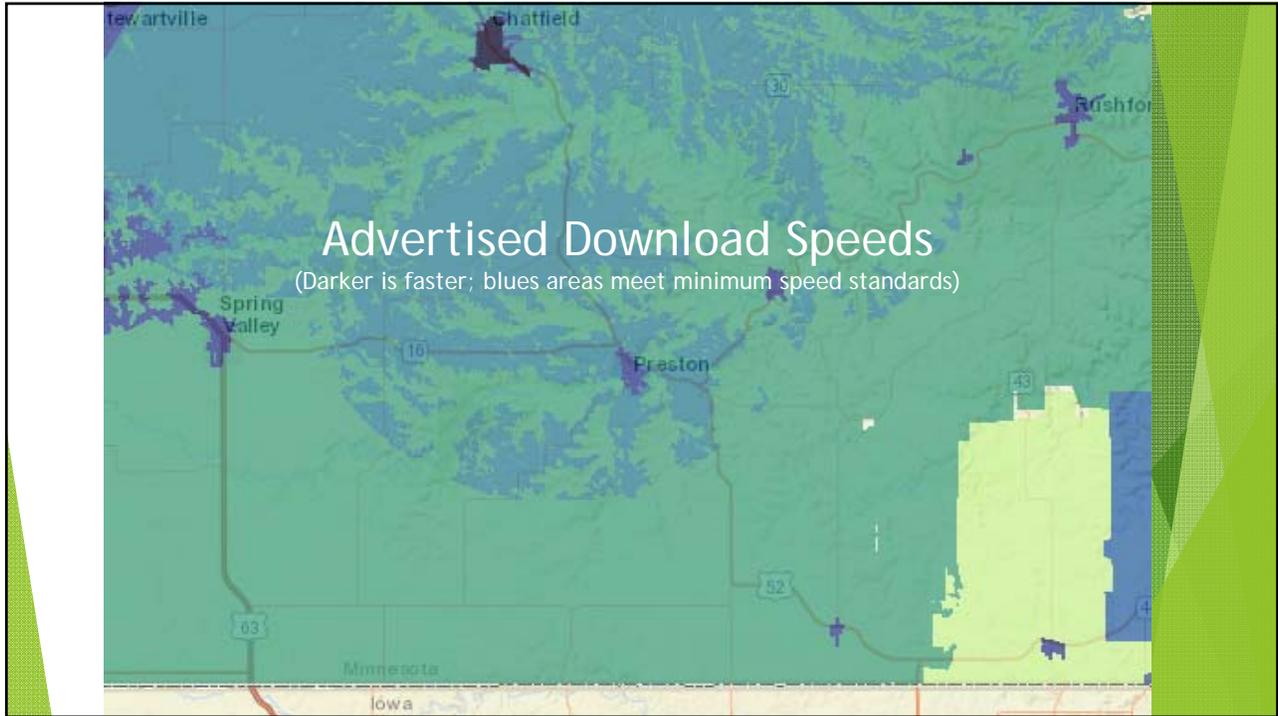
Sam Smith
sam.smith@cedausa.com

Coordinator, Fillmore County Economic Development Authority
Community Economic Development Associates (CEDA)









Fillmore County Broadband

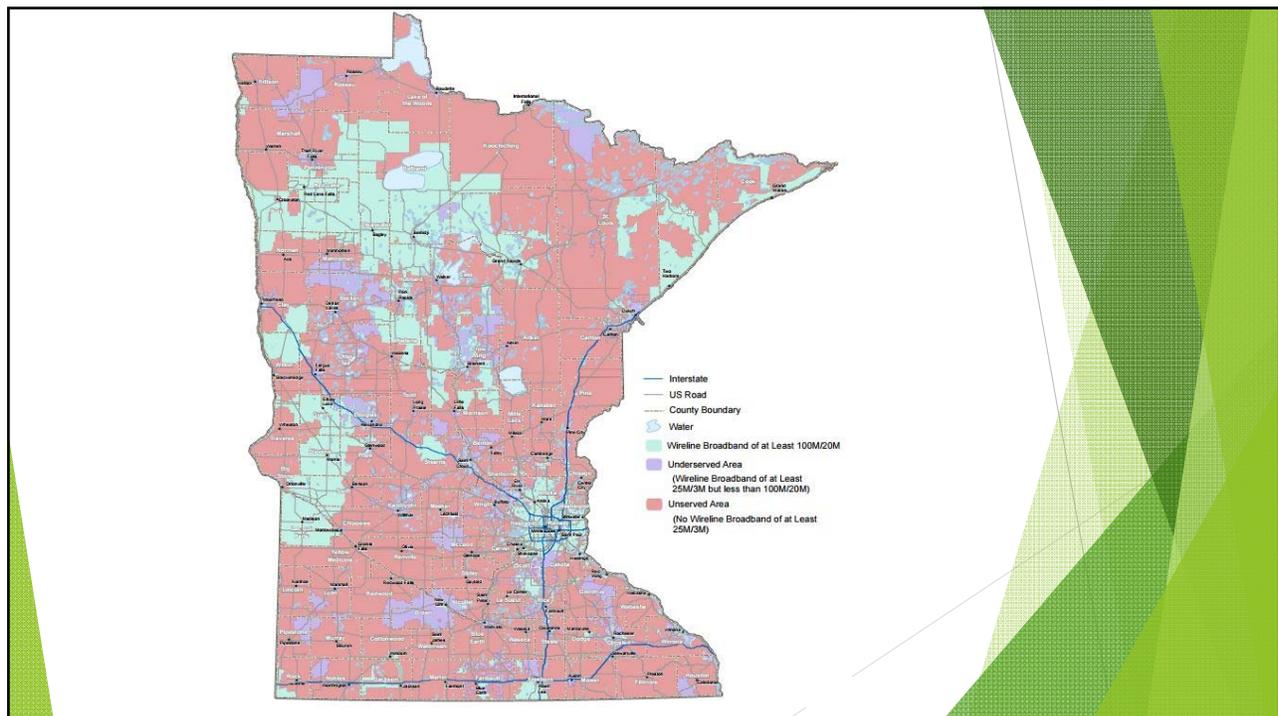
Ryan Yetzer
Community Economic Development Associates (CEDA)



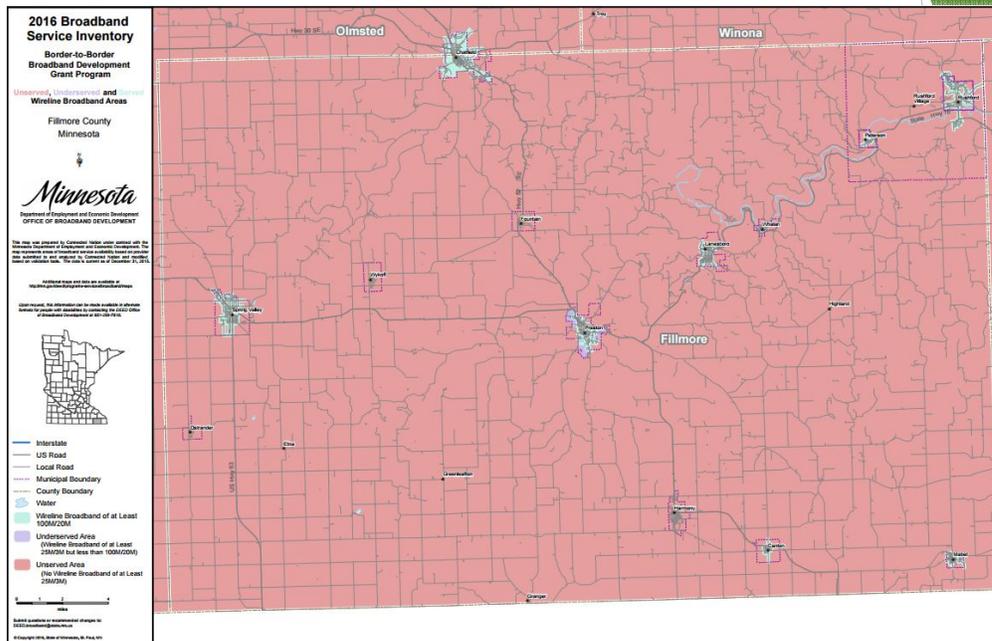
CEDA
Community and Economic
Development Associates

What is Broadband?

- ▶ The FCC defines broadband as 25 mbps download by 3 mbps upload
- ▶ Minnesota's definitions
 - ▶ Unserved: No wireline of at least 25 mbps/3 mbps
 - ▶ Underserved: Wireline connection of at least 25 mbps/3 mbps but less than 100mbps/20mbps
 - ▶ Served: Wireline connection of at least 100mbps/20mbps



- ▶ 41% of households in Fillmore County are considered “unserved”



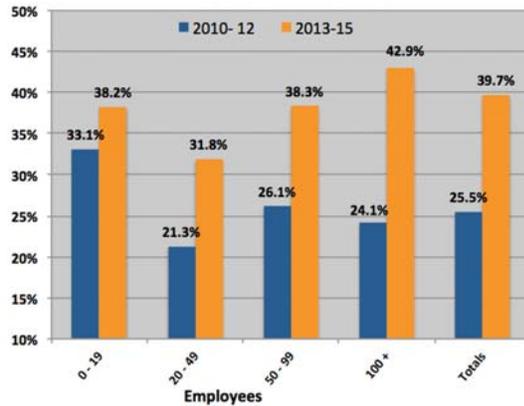
Why is Broadband Important?

- ▶ Community and Economic Development
 - **Video** – Streaming services such as Netflix, video on demand, Internet TV, peer-to-peer file sharing, teleconferencing and video-monitoring. *Cisco predicts that video in all forms is expected to represent 80-90% of Internet traffic in 2017.*
 - **Cloud Computing** – Requires centralized data processing and storing. Large data centers need multiple broadband networks for redundancy and a reliable electric grid.
 - **Multiple Devices** – Most households have multiple devices connecting to the internet at any time, including PC's, laptops, television, and tablets. Family members simultaneously streaming high-definition video streams on separate devices will require ultra-fast bandwidth speeds.
 - **Machine to Machine (M2M)** – The Internet of Things. More devices are becoming connected to the internet. These not only include laptops and smartphones, but also power meters, washing machines, thermostats, refrigerators, and light bulbs. Many applications are based on sensors used for smart grid, smart homes, smart transportation, smart water, and other applications. M2M applications are used for monitoring, telemedicine, and wearable technology. M2M traffic over the internet will grow by 84% by 2018.
 - **Telecommuting** – More people are working part or full time from homes. Even full-time office employees need to access work networks during off-hours. Home occupations that rely on information technology are more common. This is creating a need for reliable, affordable, and high speed networks to the home.

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Why is Broadband Important?

Broadband enabled 39.7% of all new jobs from 2013-15, up from 25.5% from 2010-12



- ▶ Internet Innovation Alliance released a report that found that access to the internet resulted in households saving \$10,500 on average, per year

What speeds do we need?

Application	Data Rate Required
Personal Communications, Instant Messengers	300 bps to 2.6kbps
Remote-control programs	9.6kbps to 56kbps
Streaming audio	Less than 0.5Mbps
Phone calls (VoIP)	Less than 0.5Mbps
E-mail	0.5Mbps
Web browsing; job searching, navigating government websites	0.5Mbps
Database query	Up to 1Mbps
Web browsing; interactive pages and short educational videos	1Mbps
Basic video conferencing	1Mbps
Game console connecting to the Internet	1Mbps
Skype HD video calling	1.5Mbps symmetrical
Download a 1 MB book in 2.7 seconds or a 4 MB song in 10.7 seconds or a 6144 MB movie in 4 hours and 11 minutes	1.5 to 3Mbps
Digital audio	1-2Mbps
Access Images	1-8Mbps
Skype group video-3 people	2Mbps download/512kbps upload
Compressed video	2-10Mbps
HD quality video streaming/HD video conferencing/teleconferencing	4Mbps
Two way online gaming in HD	4Mbps
Skype group video-5 people	4Mbps download/512kbps upload
Netflix recommended download speed for HD	>5Mbps
Skype group video-7+ people	8Mbps download/512kbps upload
Teleconferencing (high quality video)	10 Mbps-100Mbps
Netflix recommended download speed for Ultra HD	25Mbps
Medical Transmissions (At 50Mbps, a digital chest film takes 3 seconds, an MRI takes 30.5 seconds, an echocardiogram study takes 30.1 minutes)	Up to 50Mbps
Download a 1 MB book in 0.1 seconds, or a 4 MB song in 0.3 seconds or a 6144 MB movie in 8 minutes	50 to 100Mbps

What can we do?

- ▶ Border to Border Broadband Development Grant
- ▶ County Approaches in Minnesota
- ▶ Plan for improving broadband
- ▶ Connect America Fund (CAF)

Border to Border Broadband Development Grant

- ▶ \$35 M one-time appropriation
- ▶ \$5 M for underserved, \$500,000 for low income, remainder for applications for unserved areas
- ▶ Distributed in single competitive grant round
- ▶ Technology must be scalable to at least 100Mbps Up/Down
- ▶ Cap of \$5M per grant award
- ▶ At least 1 to 1 match (50% of eligible expenses) required (More points awarded for higher match)
- ▶ Grant awards will be geographically dispersed

Border to Border Broadband Development Grant –Application Process and Timeline

- ▶ Application period opened on July 22, 2016
- ▶ **Provider Inquiry Deadline: August 22nd, 2016**
- ▶ Deadline: October 3, 2016 at 4 p.m., into the OBD offices, St. Paul.
- ▶ Application project areas and broadband speeds posted by October 6, 2016.
- ▶ Challenges due by November 7 at 4 p.m.
- ▶ Application review & scoring period
- ▶ Target to make awards by late November

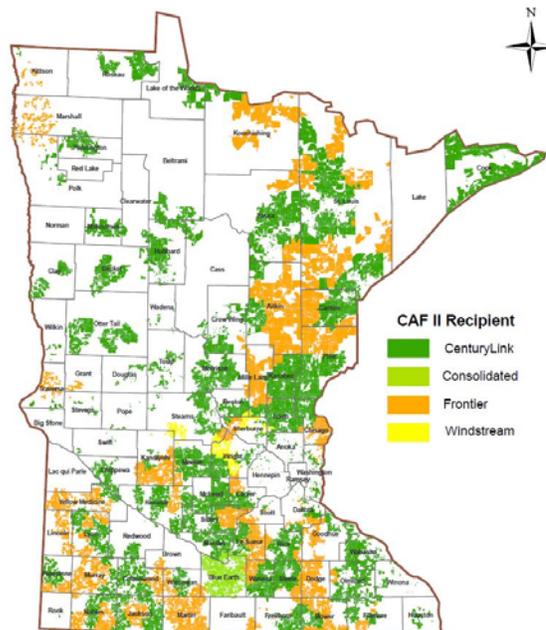
County Approaches in Minnesota

- ▶ Cook County: received ARRA funding. Arrowhead Electric build out. Overbuild entire county.
- ▶ Lake County: received ARRA funding. Lake Connections build out. Overbuild entire county.
- ▶ Big Stone and Swift County: Half state grant funded, half county bonding with Federated Telephone Coop build out. Only rural un/underserved areas.
- ▶ Rock County: State grant, county bonding and Alliance Coop funded; Alliance build out. Only rural un/underserved areas.
- ▶ Winona County: State grant, county contribution, HBC funded; HBC build out. Two geographic areas of county that were un/underserved.
- ▶ Counties with active broadband task forces: Aitkin, Chisago, Itasca, Kanabec, Kandiyohi, Koochiching, Martin, Nobles, Sherburne, and Todd.

Planning to improve broadband

1. Create a broadband task force & develop a broadband plan that is incorporated into the comprehensive plan and economic development plan.
2. Work with providers to improve broadband networks
3. Adopt right-of-way policies to coordinate with providers on management and construction issues for broadband deployment.
4. Identify broadband facilities as essential infrastructure for downtown plans, tax increment finance districts, industrial parks, and other plans.
5. Aggregate demand to attract broadband investment.
6. Review the NTIA broadband roadmap

Connect America Fund (CAF II)

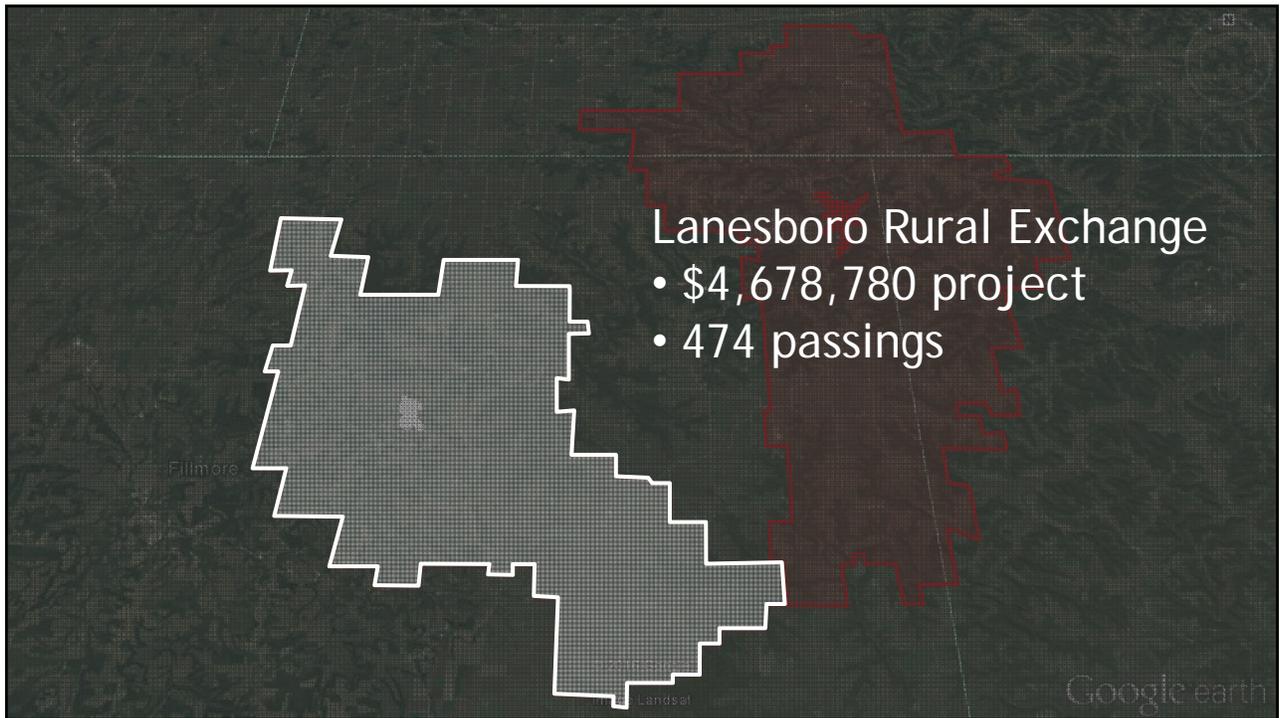
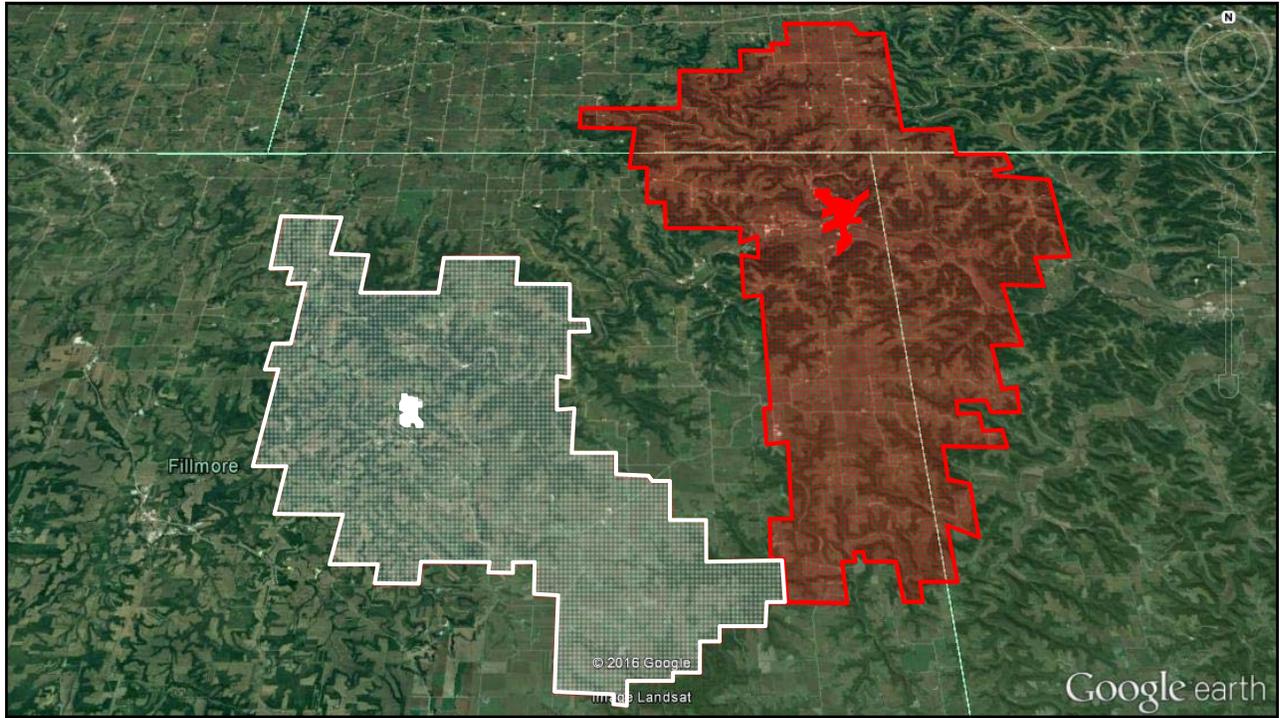


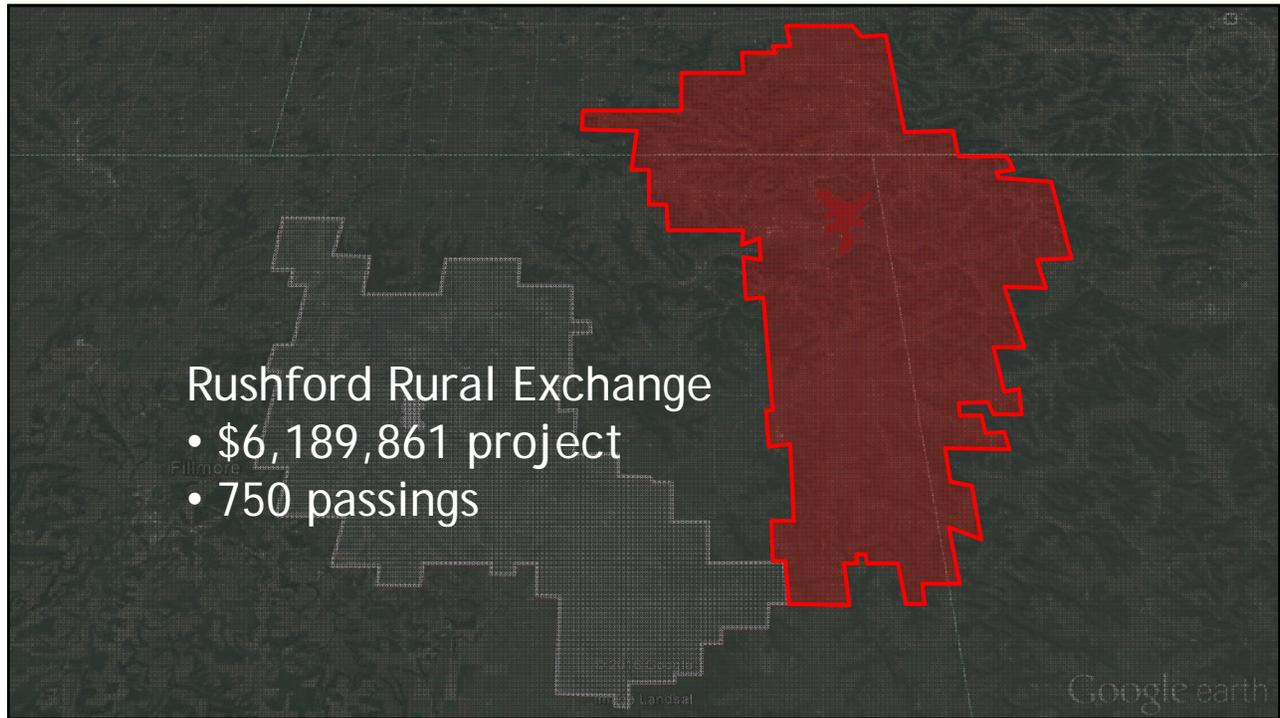
Questions?

Fillmore County Broadband

Todd Roesler
CEO, AcenTek







Questions?

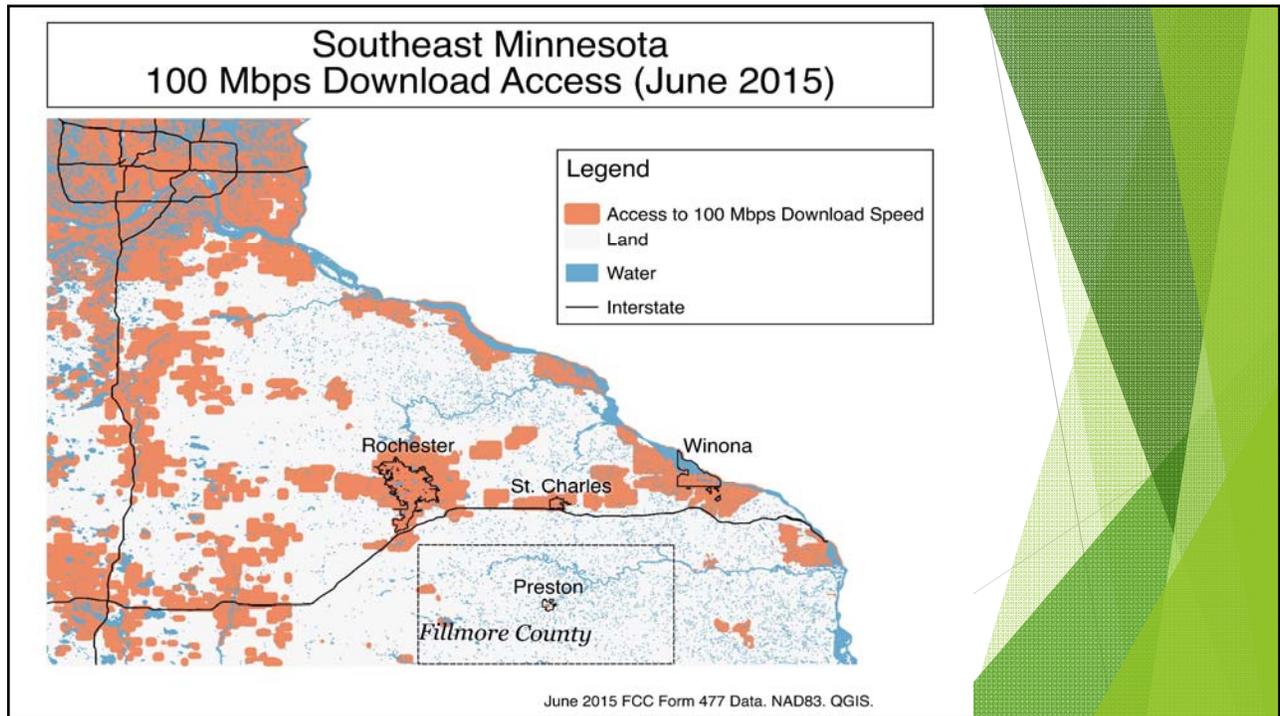
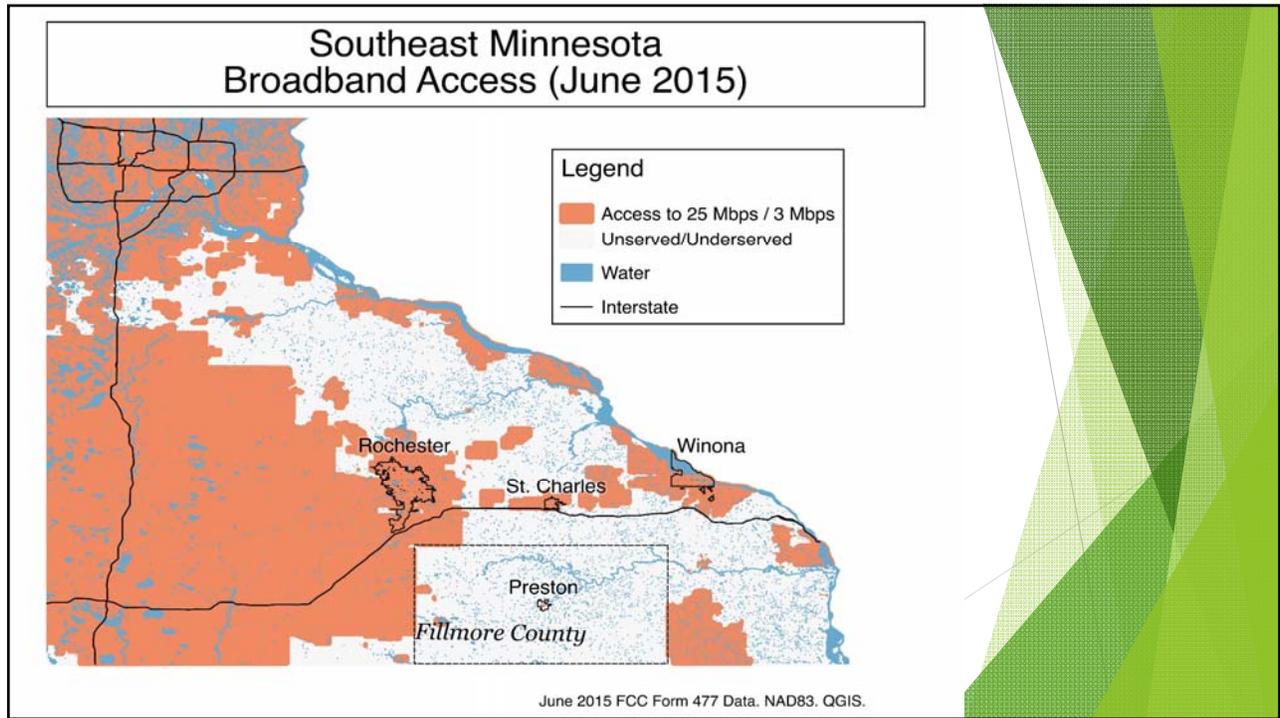
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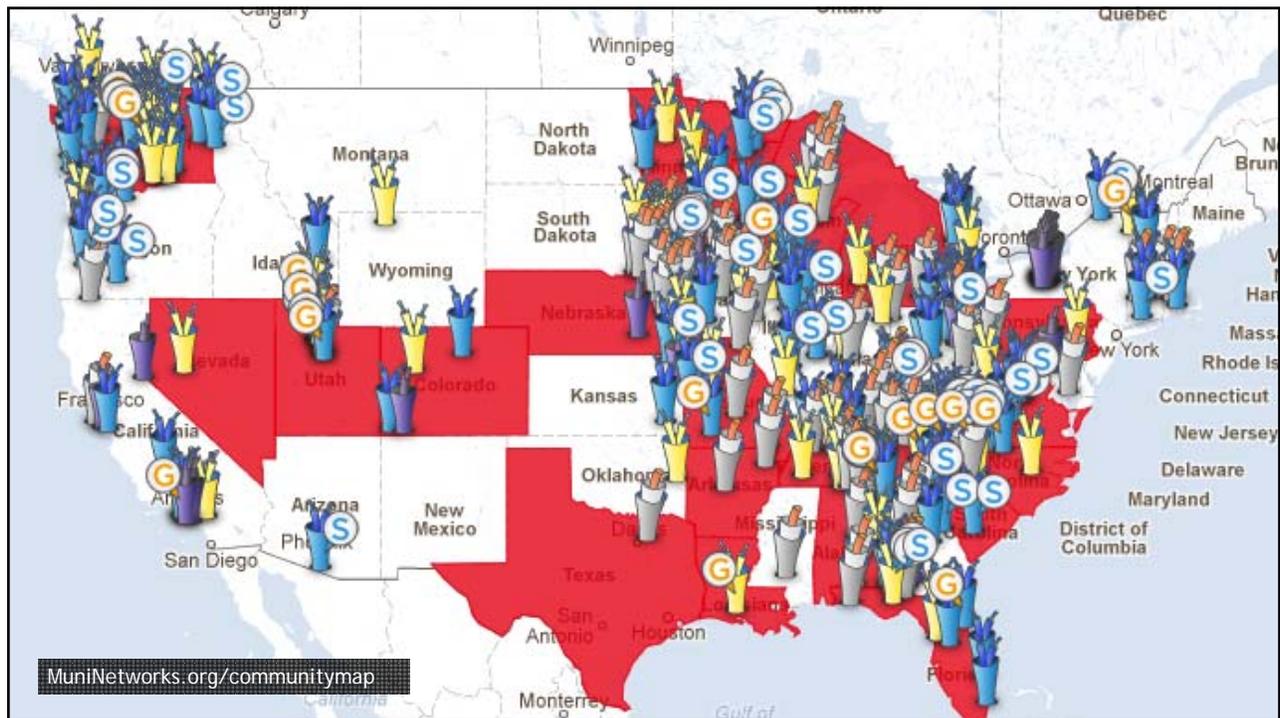
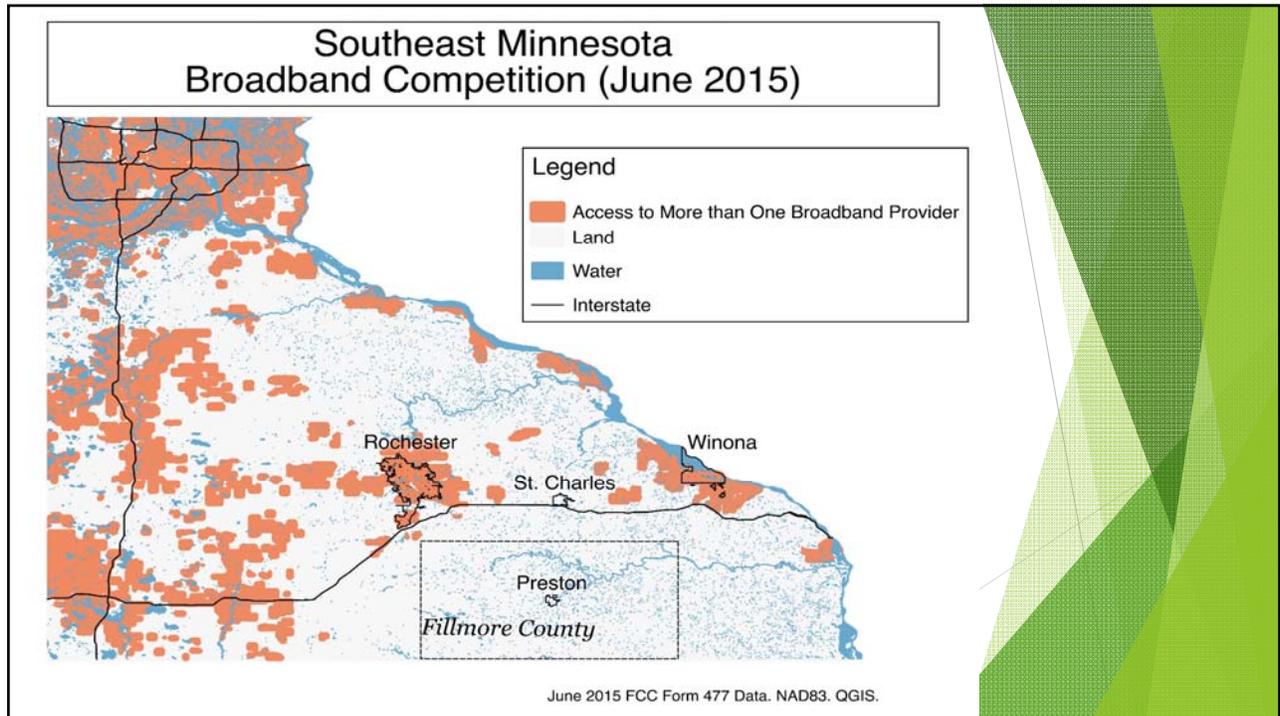
Christopher Mitchell

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Institute for Local Self Reliance









All Hands on Deck

Minnesota Local Government Models
for Expanding Fiber Internet Access

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September 2014



RS Fiber: Fertile Fields for New Rural Internet Cooperative

Written by Scott Carlson and Christopher Mitchell

[@SDCMediaWriter](#) [@CommunityNets](#)

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[Combined May, 1906.]
OCTOBER, 1906

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By HENRY CLEWS.

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By W. W. FREEMAN.

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Inferior and Uneconomical Service, Both in Europe and America, in All Lines—Kills Enterprise and Leads to Monotony, Uniformity and State Servitude.

By THOMAS COMMERFORD MARTIN.

Thank you

Christopher Mitchell

- ▶ christopher@newrules.org
- ▶ MuniNetworks.org
- ▶ @communitynets

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Questions?

What can I do?

- ▶ Contact local, state, and federal representatives to state your desire for improved service
- ▶ Provide contact information on your survey and participate in continued community organizing to build support for better broadband networks
- ▶ Educate your friends and neighbors on the importance of rural connectivity
- ▶ Think creatively about ways to improve upon and leverage 21st Century broadband internet connectivity

Thank you!

Please remember to complete your surveys