



Building Community Capacity through Broadband

Broadband: A passing fad or critical town infrastructure?

Wisconsin Towns Association Convention

10-15-2012

Professor Andy Lewis

University of Wisconsin Extension

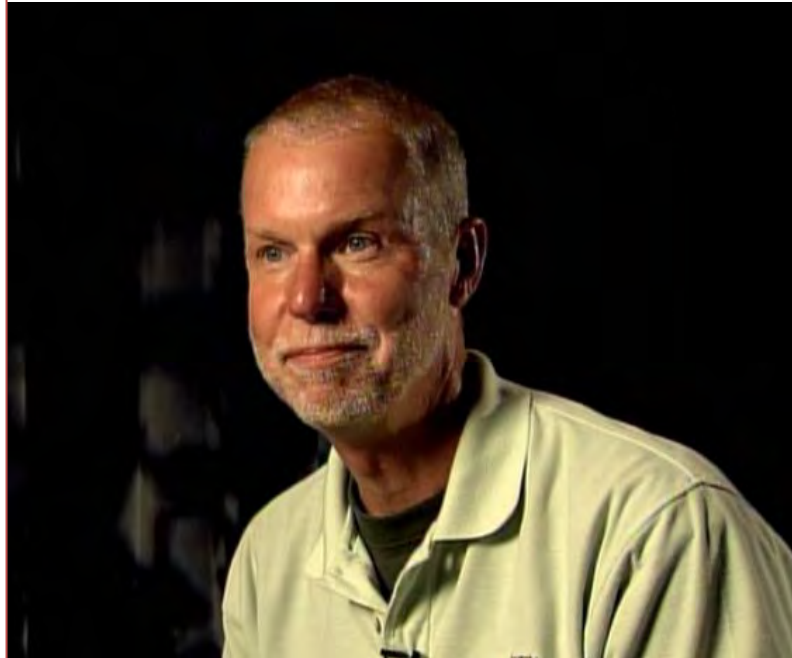


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Building Community Capacity through Broadband

“You know the war story would be we had a company in the Lac du Flambeau area that bought a building, was bringing 30 jobs, that were good jobs, and realized after the fact that the internet service to their building was not good enough to have their business there.

They ended up selling and relocating not in our area, which was disappointing to them, and disappointing to us also.”



--Joe Hegge, Executive Director, Grow North



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What is Broadband?

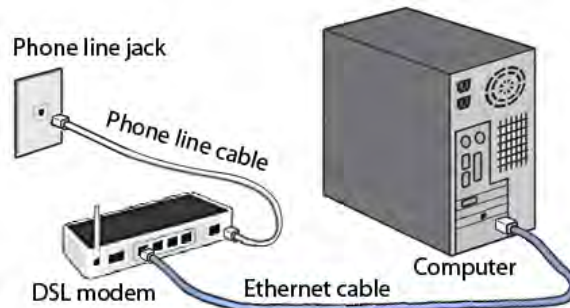
In simple terms, broadband essentially means high speed Internet. It allows you to download large files quickly (books, movies, music, medical records, bank statements, etc.).



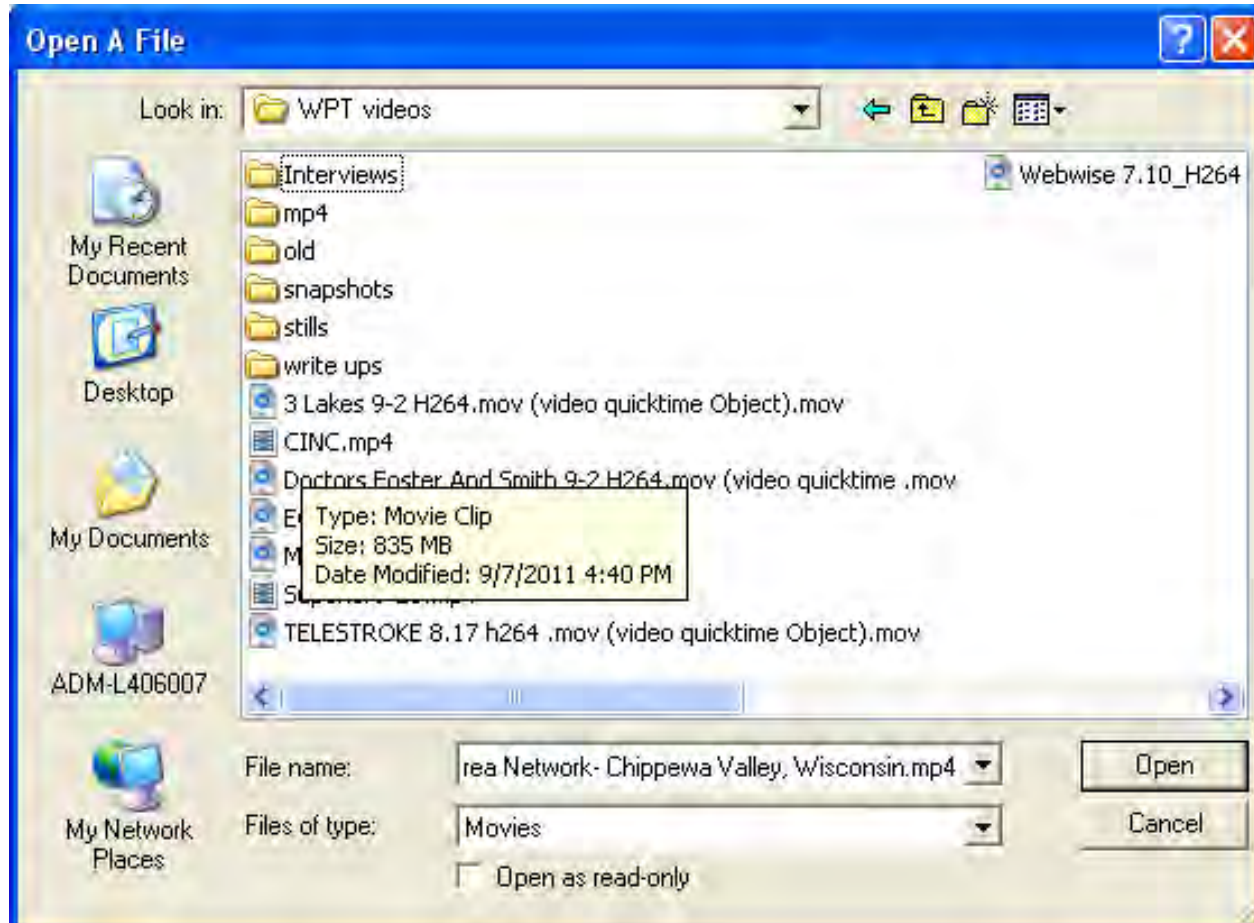
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Broadband



Let Me Demonstrate....



Start the Jeopardy Theme Song Music...

File Transfer Time - Data Transfer Speed Calculator

Use this calculator to estimate file upload, download or transfer speed. Actual transfer speeds may be a bit slower than these times due to reasons described below.

File Size	File Size Units	Select Transfer Speed	Resulting time
835	Bits Bytes Kilobytes Megabytes Gigabytes Terabytes Petabytes	56 Kbps 128 Kbps 256 Kbps 512 Kbps 768 Kbps 1.544 Mbps T1/DS1 2.048 Mbps 10 Mbps T1 44.736 Mbps OC-3 100 Mbps F 155.52 Mbps OC-3 622.08 Mbps OC-12 1000 Mbps Gig E	1 Day 10 Hours 44 Minutes 40.14 Secor

Resulting time
1 Day 10 Hours 44 minutes

<http://www.t1shopper.com/tools/calculate/downloadcalculator.php>



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T1/DSL (1.544 Mbps)

File Transfer Time - Data Transfer Speed Calculator

Use this calculator to estimate file upload, download or transfer speed. Actual transfer speeds may be a bit slower than these times due to reasons described below.

File Size	File Size Units	Select Transfer Speed	Resulting time
835	Bits	56 Kbps	1 Hour 15 Minutes 36.59 Seconds
	Bytes	128 Kbps	
	Kilobytes	256 Kbps	
	Megabytes	512 Kbps	
	Gigabytes	768 Kbps	
	Terabytes	1.544 Mbps T1/DS1	
	Petabytes	2.048 Mbps E1	
		10 Mbps Thin Ethernet	
		44.736 Mbps T3	
		100 Mbps Fast Ethernet	
		155.52 Mbps OC-12	
		622.08 Mbps OC-48	
		1000 Mbps Gig Ethernet	

Resulting time
1 Hour 15 minutes



What if I had a 10Mbps or 1G Connection?

File Transfer Time - Data Transfer Speed Calculator

Use this calculator to estimate file upload, download or transfer speed. Actual transfer speeds may be a bit slower than these times due to reasons described below.

File Size	File Size Units	Select Transfer Speed
835	Bits	56 Kbps
	Bytes	128 Kbps
	Kilobytes	256 Kbps
	Megabytes	512 Kbps
	Gigabytes	768 Kbps
	Terabytes	1.544 Mbps T1/DS1
	Petabytes	2.048 Mbps E1
		10 Mbps Thin Ethernet
		44.736 Mbps T3/DS3
		100 Mbps Fast Ethernet
		155.52 Mbps OC-3
		622.08 Mbps OC-12
		1000 Mbps Gig E

Resulting time
11 Minutes 40.45 Seconds



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Faster Than a Speeding Bullet

File Transfer Time - Data Transfer Speed Calculator

Use this calculator to estimate file upload, download or transfer speed. Actual transfer speeds may be a bit slower than these times due to reasons described below.

File Size	File Size Units	Select Transfer Speed	Resulting time 7 seconds
835	Bits	56 Kbps	
	Bytes	128 Kbps	
	Kilobytes	256 Kbps	
	Megabytes	512 Kbps	
	Gigabytes	768 Kbps	
	Terabytes	1.544 Mbps T1/DS1	
	Petabytes	2.048 Mbps E1	
		10 Mbps Thin Ethernet	
		44.736 Mbps T3/DS3	
		100 Mbps Fast Ethernet	
		155.52 Mbps OC-3	
		622.08 Mbps OC-12	
		1000 Mbps Gig E	



Overall Goals

To increase connectivity between community anchor institutions.

To increase demand and broadband connectivity for businesses and residents, provided by private providers.



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CAIs Have Very Different Broadband Needs:

"as many as 80 percent of E-rate-funded schools and libraries say their broadband connections do not fully meet their needs"

Eighth Broadband Progress Report, Aug 21, 2012, FCC
<http://www.fcc.gov/reports/eighth-broadband-progress-report>



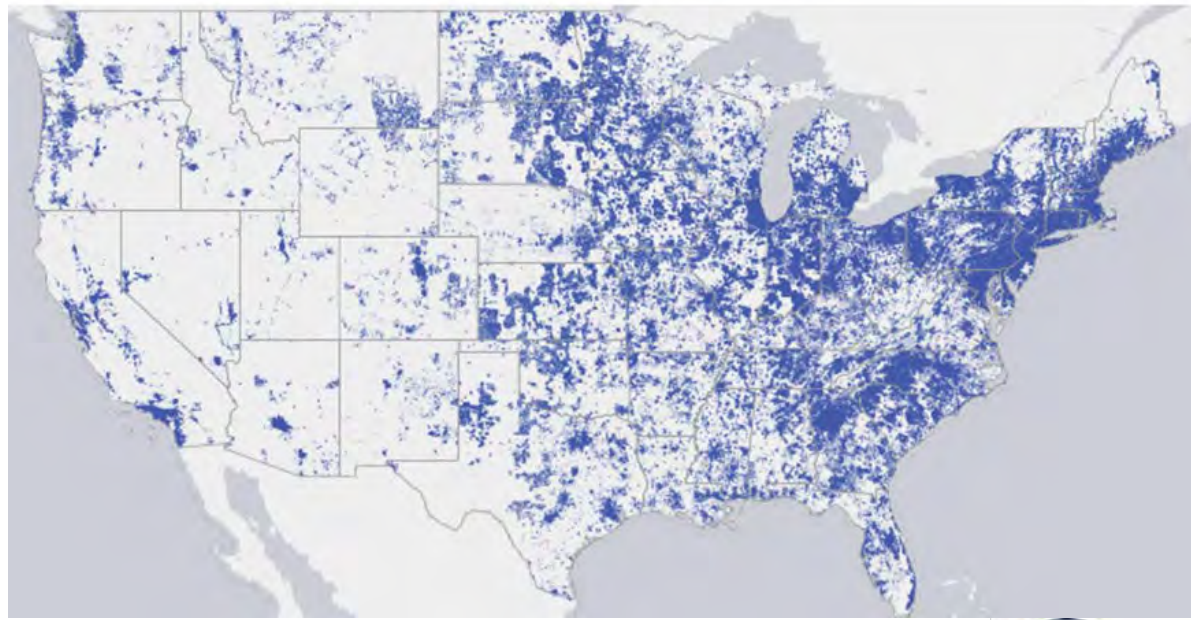
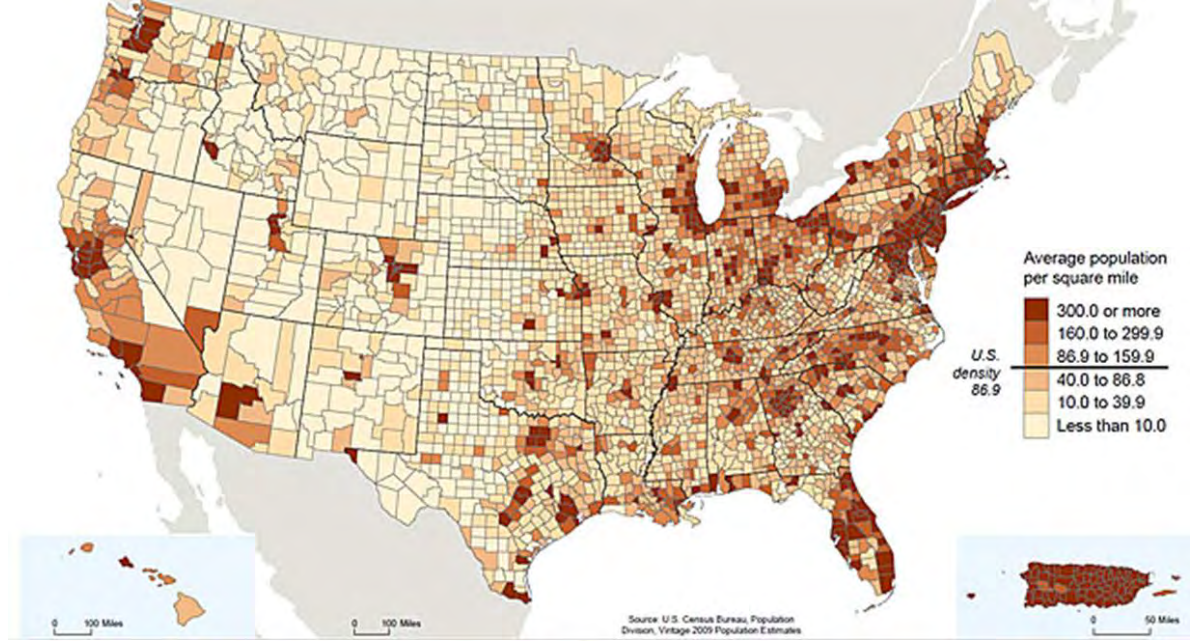
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It's About the "CAN"



Community Area Network



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In Twenty-ninth Place and Fading Fast



Bruce Kushnick, a former telephone industry consultant estimates that telephone customers have already paid \$360 billion/\$3,300 per household to build our “superfast electronic highway”. More than enough money to finance a fiber-optic system.

Instead, the high speed data lines in America are among the slowest in the world.



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Just to Recap....

- BadgerNet: \$11,652 per month for state agencies
- Chattanooga, TN: \$350 per month for residents (**Now \$300**)
- Sebastopol and San Francisco, CA: \$69.95
- Kansas City, MO: \$0 for public and civic organizations
- Rural residents?



Whose Vision Are You Going to Trust?

“What are you going to do with 20 Mbps? It’s like having an Indy race car and you don’t have the racetrack to drive it on. We are going to be offering 3 Meg....most users won’t use that”

- SBC's Midwest Networking President, Kirk Brannock, 2004

“It's like buying a Jaguar when a Ford Focus would be perfectly adequate”

- Andrew Petersen, spokesman for TDS Telecom, about 1 Gbps Networks, 2012

“640K ought to be enough for anyone.”

- Bill Gates, 1981

“There is no reason anyone would want a computer in their home.”

- Ken Olsen, Founder and Chairman DEC (Digital Equipment Corporation, now part of Compaq)



TDS - Madison

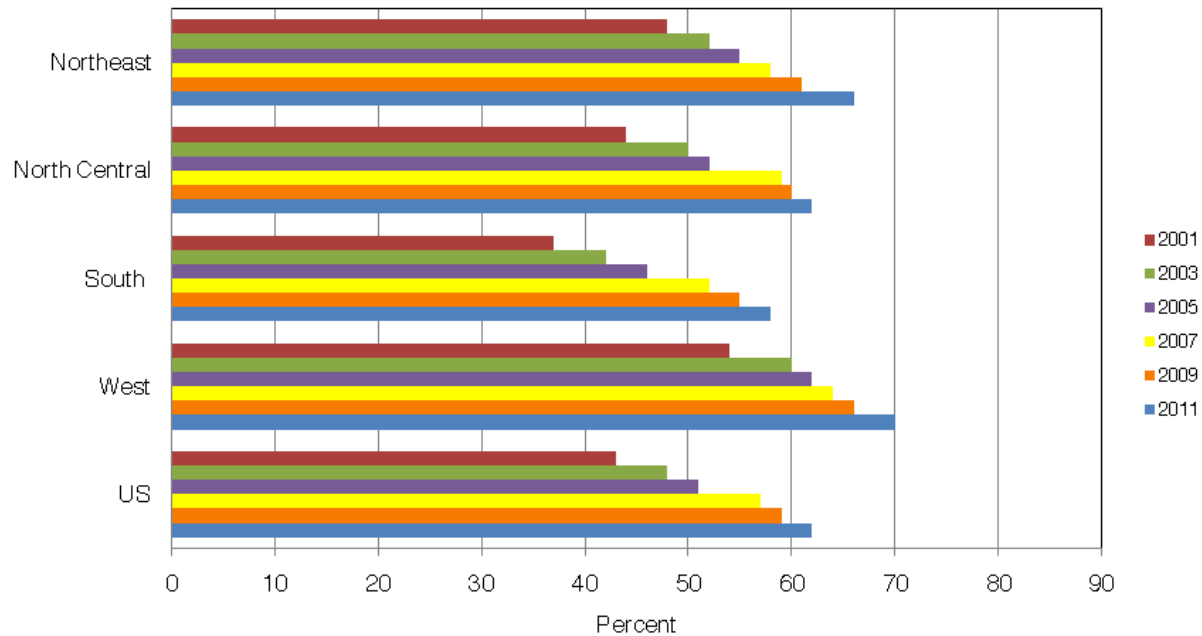
“TDS belittled the Berry complaint as being used so that affluent professionals, among others, can build homes in bedroom communities to avoid higher property taxes and still have high speed Internet access.”

--Town of Berry Chair Anthony Varda



The Litmus Test?

Percent of Farms With Internet Access –
By Region and United States: 2001-2011



We're not in Kansas any more...



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Building Community Capacity through Broadband

Start With The Providers Who Report Serving the Area

LINK WISCONSIN
Broadband Coverage Maps

Choose a Broadband Map:
Number of Broadband Providers

This map shows the total number of broadband providers (all technology types).

- 1 Broadband Provider
- 2 Broadband Providers
- 3 Broadband Providers
- 4 Broadband Providers
- 5 or more Broadband Providers

Broadband Map Transparency:

About the Map:

- Click the map to get a provider list.
- Maps updated in April 2012 based on coverage as of December 30, 2011.
- Tips for using the Interactive Map
- Frequently asked Questions (FAQ)
- Overview of the Mapping Process
- How to Provide Feedback on the Map

All information presented herein is believed to be accurate but is not guaranteed to be without error. Maps may be printed but there are no claims of completeness or accuracy. All critical information should be independently verified. See the FAQ for additional information.

RECOVERY.GOV

Using the Map | FAQ | Mapping Process | LINKWisconsin | Contact Us

6704 State Hwy 66, Custer, Wisconsin

Map Layers Base Map Map Tools

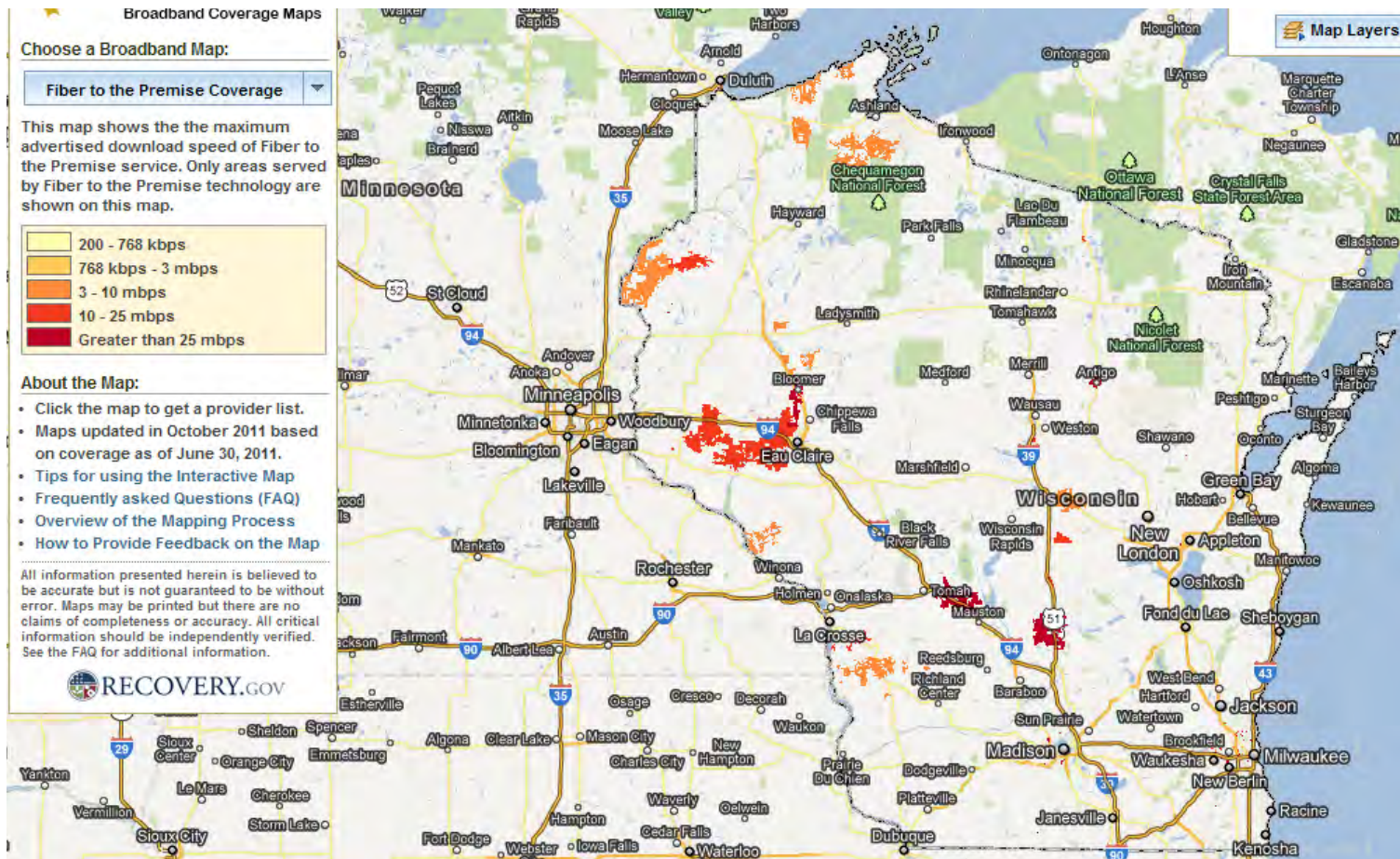
- Sprint (Web Site)
- AT&T Mobility LLC (Web Site)
- CellCom (Web Site)
- Charter Communications (Web Site)
- Amherst Telephone Company (Web Site)
- Element Mobile (Web Site)
- UsCellular (Web Site)

Satellite service may also be available here. [Click here for more information](#)

[Provide Coverage and Speed Feedback](#) | [Close Window](#)



Fiber to the Premise Coverage



Are People Getting What They Need?

Wisconsin Broadband Dashboard

Home

Tools & Resources

- Dashboard
- Maps
- User Manual
- Broadband Demand Surveys
- Contacts Database
- LinkWI Demo Page
- Admin Log-In

Training Modules

- Broadband 201
- Broadband Policy
- Connecting Businesses
- Health Information Technology

Broadband Demand Surveys

To register your demand or need for Broadband service, please select your location type:

- Residence
- Business

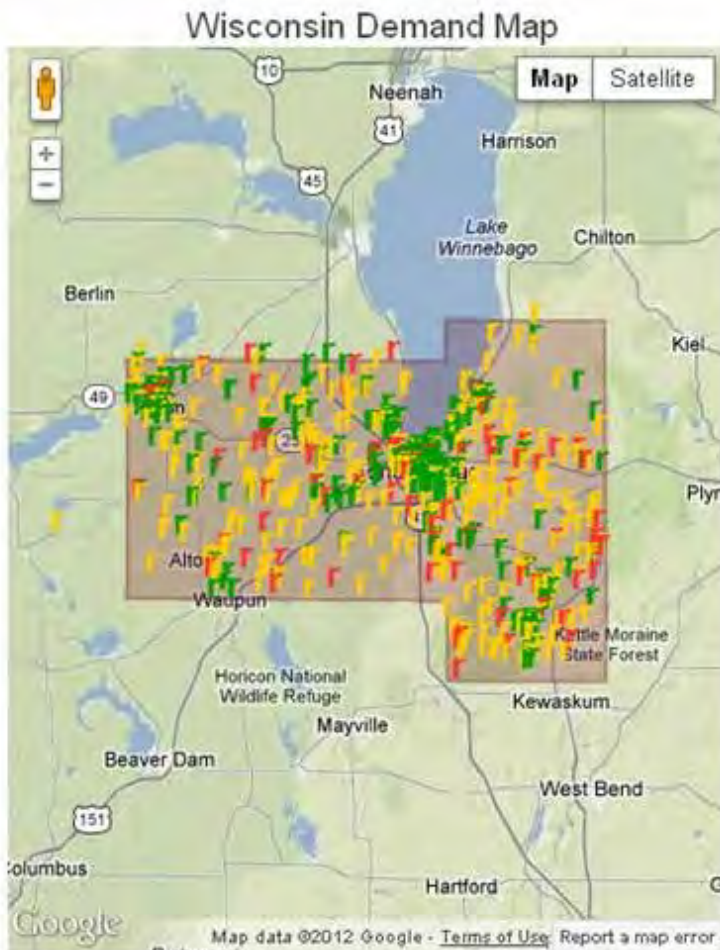
2009-2012 LinkWISCONSIN. All Rights Reserved.

RECOVERY.GOV



Are People Getting What They Need?

Demand Map



Please select a data view to be displayed on the map at the left

- Broadband Demand Locations
- Community Anchor Institutions
- Subscription Rates

To refine your map view, please select one of the following:

- State
- Planning Region
- County

Fond du Lac

Broadband Demand Locations - Click on marker for more details

- Residential: **r** well-served, **r** under-served, **r** un-served
- Business: **b** well-served, **b** under-served, **b** un-served

[Click here to register a new Demand Location](#)

Source:

LinkWISCONSIN, WI

PSC,

<http://www.wisconsin-dashboard.org/node/460>



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Community Technology Centers



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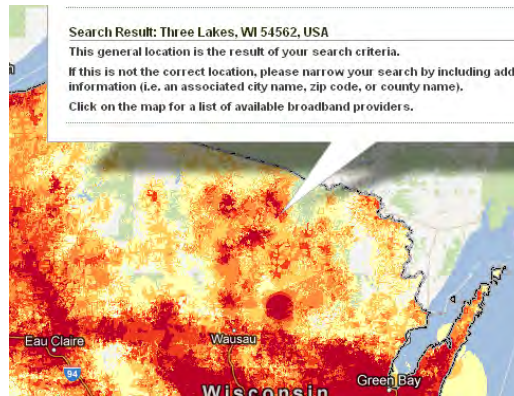
Building Community Capacity through Broadband

Dig Once Policies

- Work with local providers
- Coordinate public works projects
- Provide access to public infrastructure/ease permitting requirements
- Install conduit as part of local road projects?



Town of Three Lakes, WI



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**Wisconsin ranks
#24 (Access)
#38 (Adoption)
Residential**



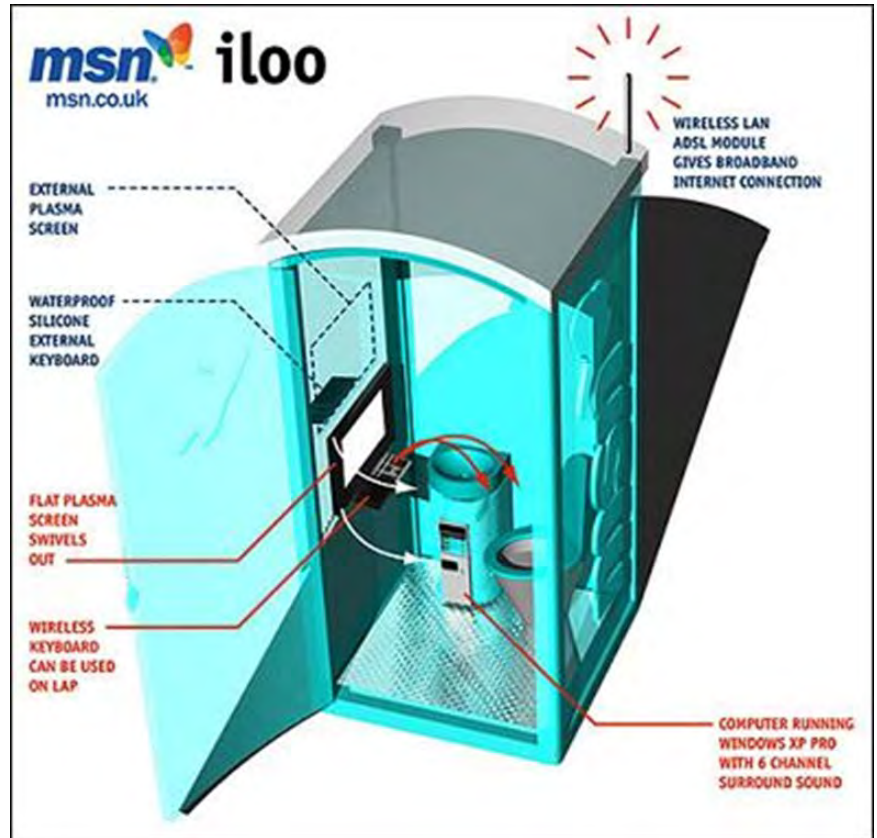
Source: Eighth Broadband Progress Report, FCC, August, 2012,
http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-90A1.doc



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Building Community Capacity through Broadband

1899 "Everything that can be invented has already been invented."
--Director, U.S. Patent Office



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Building Community Capacity through Broadband



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For a copy of today's presentation:

http://www.slideshare.net/slideshow/embed_code/14705263

For more information on the Building Community Capacity through Broadband (BCCB) initiative, see: <http://broadband.uwex.edu/>



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Building Community Capacity through Broadband

CASE STUDY – THREE LAKES



Reinventing a Local Economy by Co-Branding Broadband Expansion with Economic Development

Wisconsin Towns Association
Annual Convention
October 14-16, 2012

Wisconsin Towns Association



IT ALL STARTED WITH A PLAN..

.. and a decision

- Compliance Document
or
- Operative Document



Wisc. Stat 66.1001 mandated that every unit of government complete and adopt a 20-year comprehensive plan by Jan 1, 2010

THE ACTIVE PATH VS THE PASSIVE PATH



*If you fail to plan,
then you can plan to
fail. But you will still
fall short if you fail
to follow your plan.*

Once you commit to the decision to jump on the operative highway, you are on an inevitable path to achievement and implementation

A COMPREHENSIVE PLAN IS AN EXISTING CONDITION REPORT

Your comprehensive plan provides a baseline of where you are and some ideas of where you want to go. Next you must focus on those areas that will give your community both **strategic** and **tactical** advantages

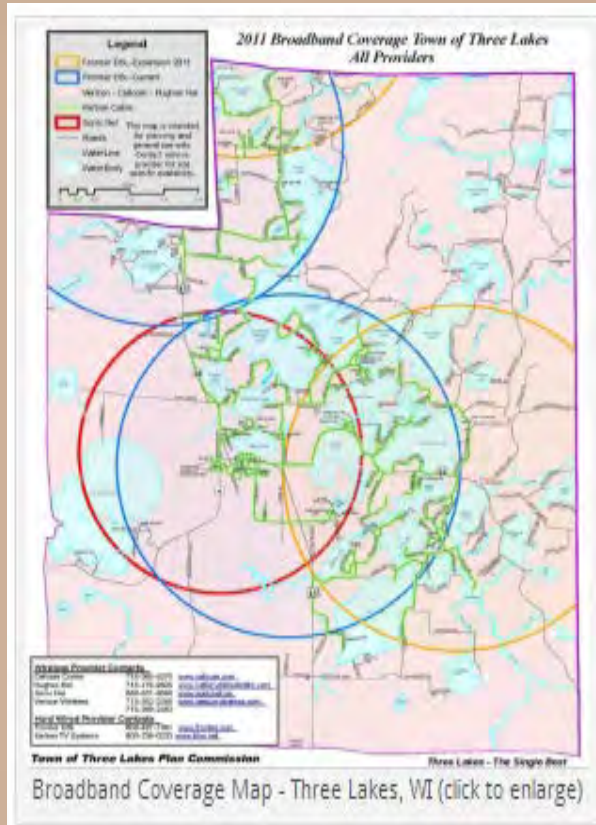


Three Lakes decided that the best possible high speed internet (broadband) and cell phone coverage were the fundamental underpinning to all we hoped to accomplish in the next 20 years

ANCHOR FOR TECHNOLOGY IN THE NORTHWOODS

A bold plan to do what few unserved or underserved rural communities had ever accomplished..

- **Technology** as a tenth element of the plan
- Don't wait for the technology to come to you
- Providers as partners, not the enemy
- Proactively identify opportunities
- Create your own coverage map
- Educate your local residents
- Communicate what you have
- Collaborate on the local, county, regional, super-regional and state levels
- Public-private cooperation is essential
- Set goals and then set about to make them



About 90% of Three Lakes residents now have access to up to four providers. Phase I will be complete when 100% have at least one choice

THE THREE LAKES MODEL

Fully engaged

Technology Capability <ul style="list-style-type: none">· Existing Infrastructure· Technical Expertise· Local and Regional Providers	Technically Capable	Expanding Broadband
	Interested	Governmentally Engaged
Local Government Engagement <ul style="list-style-type: none">· Ability to change mindset· Commitment to broadband development· Willingness to earmark financial resources· Dedication to collaborations on a broad front		

Just starting out

Building is about far more than merely providing access to the technology. Engaging people in the community throughout the process is critical to the long-term success of the effort.

THE THREE LAKES MODEL

STEP ONE: *change and commit*

- the town board mindset must change
- local taxpayer dollars must be committed to the effort

STEP TWO: *assess and decide*

- take an inventory of what you have and make a list of what you want / create a coverage map
- choose what broadband options you want to pursue

STEP THREE: *collaborate and contact*

- arrange meetings with your local service providers
- *go to the technology* – you'll be waiting forever for it to come to you

Without the support of the local town board your broadband implementation plan has no chance. As hard as it is to budget funds in these difficult times, that's precisely what you must do.

THE THREE LAKES MODEL

STEP FOUR: *implement and execute*

- as service options come online, educate your residents on the choices
- enter into agreements with providers to build/create infrastructure

STEP FIVE: *evaluate and refine*

- how are we doing, where are we strong, where do we need improvement
- find/fill the gaps in your local coverage area / upgrade service offerings

The job never ends. It's a ongoing cycle of continuous evaluation and improvement. The collaborations you will form will constantly expose you to groups with great ideas you can use and assimilate.

MARKET TRADE ANALYSIS

Takes the baseline data and starts
scratching layers down

A Market Trade Analysis (MTA) is a study undertaken by a municipality to better understand its local economy and to **identify ways** in which it can **more effectively compete** in the regional marketplace. It is intended to provide a **framework for long-term economic sustainability**. The MTA provides elected officials, current and future business owners, and residents with **a fundamental description of the industry sectors that are prospering, struggling, or non-existent** within a given community. Once completed, the MTA will serve as **a roadmap for identifying market-based opportunities** for future economic development.

Town of Three Lakes
Oneida County Wisconsin



Market Trade Analysis

March 2012

LOCATION QUOTIENT ANALYSIS

Takes the baseline data and starts
scratching layers down

The Location Quotient Analysis (LQA) is a tool used to identify the **export capacity** of a local economy and the **degree of self-sufficiency** of a particular industry sector. Location quotients are **assessment tools utilized to identify potential opportunities** for targeted economic development. Like the market demand analysis, an LQA compares the local economy with reference economies in an attempt to **identify specializations** and to gauge the concentration of a particular good or service.

Town of Three Lakes
Oneida County Wisconsin



Location Quotient Analysis

March 2012

Insert **your** town
here



If Three Lakes did it, so can you.
Just follow the steps in the model.

- Commit to your plan
- Take the operative path
- Confirm your baseline data
- Collaborate
- Get professional planning assistance
- Be consistent, persistent and patient
- Never say never
- Don't let *anyone* tell you it can't be done

CASE STUDY – THREE LAKES



Resources

www.trythreelakes.com

www.broadband.uwex.edu

www.wisctowns.com

ecodevdon@townofthreelakes.com

Wisconsin Towns Association



ABOUT THE AUTHOR



Don Sidlowski

is Town Chairman in the Town of Three Lakes in Oneida County. He also serves as chairman of the Economic Development Committee, as a Commissioner on the Three Lakes Plan Commission, on the Board of Directors of the Oneida County Economic Development Corporation, and on the Management Team for the Public Service Commission's LinkWISCONSIN Region 2 Team. In his professional life, Don is Co-Founder and Managing Director of Oneida Marketing Enterprises, a virtual corporation providing integrated internet marketing systems to corporate clients with large direct sales forces. He is a nationally-known speaker, author, home-business expert, consultant and trainer credited for advancing the concept of *holistic entrepreneurship*.

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Eau Claire County AGRICULTURE & RESOURCE CENTER
227 First Street West



Eau Claire County Offices
• Land Conservation Division
• Parks & Forests
• UW - Extension

Broadband Education & Outreach: Why?

Jill Hietpas

Community Outreach and
Broadband Educator

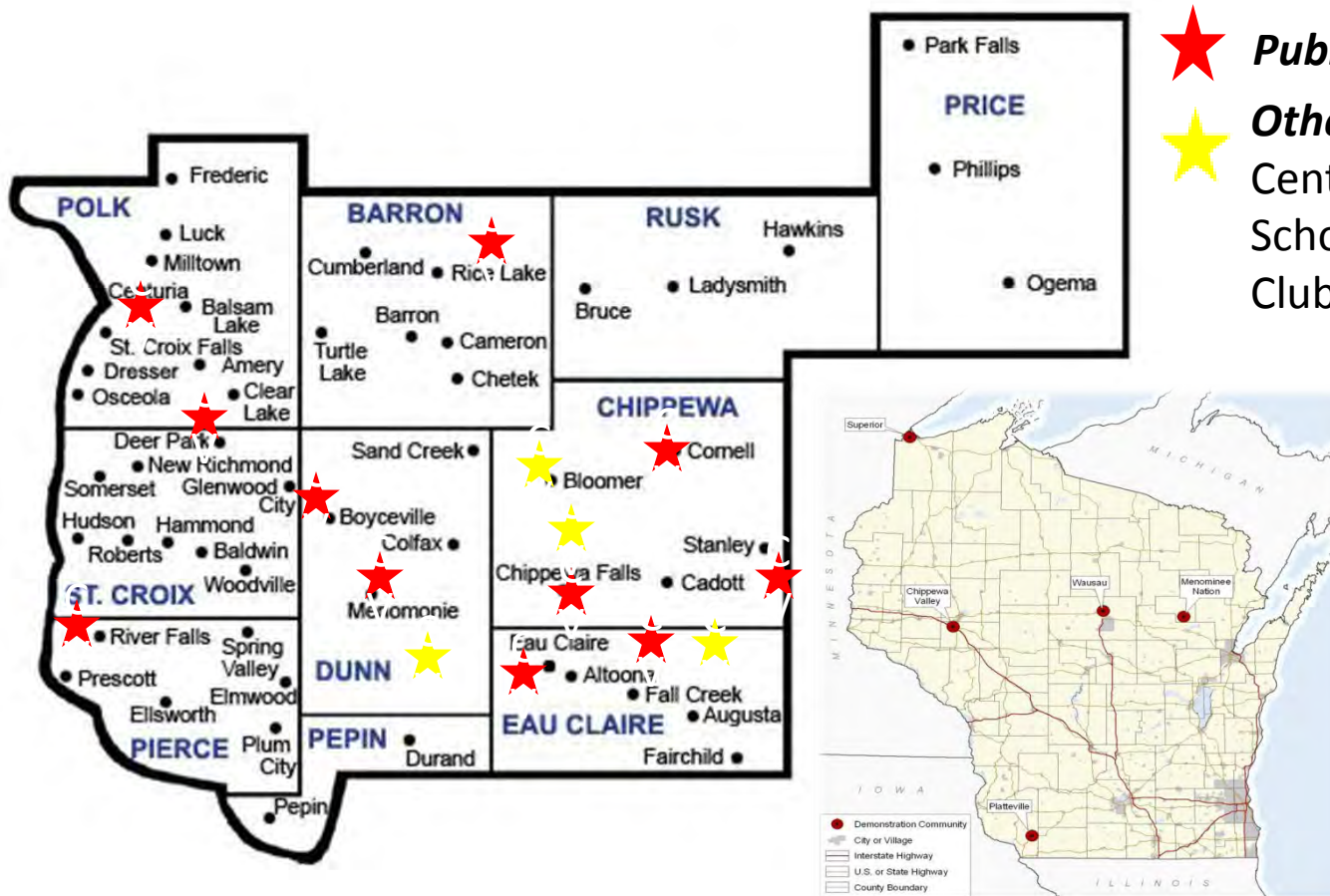
10/16/2012



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Building Community Capacity through Broadband

Educational Outreach in the Chippewa Valley



- ★ **Public Libraries** (56 IFLS)
- ★ **Other Institutions:** Job Centers, Senior Centers, Schools, Boys and Girls Club, County Agencies, etc.



What IS Broadband Outreach and Education

Figure 1. Recovery Act Investments in the Middle Mile Will Connect Key Institutions and Enable Service to Homes and Businesses



Source: National Telecommunications and Information Administration, U.S. Department of Commerce.

Chippewa Valley Shared Technology Practices

Public and Private Partnerships



Fiber optic cable connects critical anchor institutions in the Chippewa Valley through partnerships with Eau Claire-based Underground Systems, Inc. and private telecommunications provider, Packerland Broadband. This high bandwidth connectivity (meaning the amount of data transferred at a given time) allows creative application sharing between cities, counties, public libraries, schools and medical facilities to benefit people in the communities of Dunn, Eau Claire and Chippewa counties—and save money!

Telemedicine



EMS providers and emergency departments in the Chippewa Valley collaborated to implement new technology that enables EMTs to gather EKG data at the scene and transmit it to an area hospital in real-time. Getting patients quickly to specialized care can shorten hospital stays, decrease mortality, and improve patient outcomes from cardiac and stroke patients. The 12-lead EKG implementation is the result of collaboration and resource sharing between the emergency departments and IT Staff at St. Josephs and Sacred Heart hospitals (Hospital Sisters Health System) and Mayo Health System, all members of CINC.

Photo courtesy of Eau Claire Leader Telegram, Shane Opatz

Public Safety



If you root for an Eau Claire high school or UW-Eau Claire hockey team, Wi-Fi access to your school network is seamless when you visit Eau Claire's Hobbs Municipal Ice Arena. This access however, is secondary to the real need for public safety through video surveillance or immediate access to data and voice communications. Hobbs isn't the only city facility that benefits from shared applications—Carson Park with sports teams, fans, community members and park visitors reap the same benefits of Wi-Fi access without impeding public safety communications or services.

Education



Collaboration between Chippewa Valley Technical College (CVTC) and the City of Eau Claire resulted in the implementation of Fire Station # 9 and CVTC's Emergency Services Education Center (ESEC) creating real-life learning experiences for students in the Law, Public Safety & Security programs. Collaborations and shared applications through broadband include: UW Health—Eau Claire Family Medical Clinic, Marquette University—Dental program, Wisconsin Job Service, Workforce Resource and Referral, Chippewa County EDC, UWEC Material Sciences Department, UW-Stout Discovery Center, SportClips and the Barber/Cosmetology program, and Momentum West, which resides at the NanoRite Center and partners in Economic Development.

Being in "CINC" for the Needs of our Communities
Chippewa Valley InterNetworking Consortium

Basic Computer Literacy

Libraries and Job Centers



Why?

10/16/2012



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Building Community Capacity through Broadband

Supporting Local Businesses

“Lack of computer literacy has been a huge barrier for the individuals in my program who are seeking community employment. The gentlemen who attended the program all reported that they feel more comfortable using the computer. They believe the information gained was useful and will help them obtain community employment.”



Lori Eklund Walsh, Employment Support Consultant
Chippewa River Industries

CHIPPEWA FALLS AREA SENIOR CENTER

STAYING CONNECTED THROUGH THE COMPUTER CAFÉ



LEFT: Laura Kasdorf, volunteer, assists Joanne and George Taylor who are using the new computer equipment at the Chippewa Falls Area Senior Center.

BELOW: Jill Hietpas, Community Development and Broadband Educator for UW-Extension, directs Jim Buswell, at the Computer Café.

“The introduction to computers has opened the door for our seniors to communicate with their families and friends who are using email and Facebook”. “The greatest benefit of the Computer Café has been minimizing the fear of technology and encouraging the members to keep up with the fast paced world of computer communication.”

Angie Walker, Executive Director



10/16/2012



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iPad's in the Field



“It was nice to have these iPads with the UW Extension apps already loaded with the information beneficial to my immediate needs. As a salesman I get people who want information ‘now’. I know the common pests (cutworms, aphids) but technology helped to see images for those I don’t recognize.”

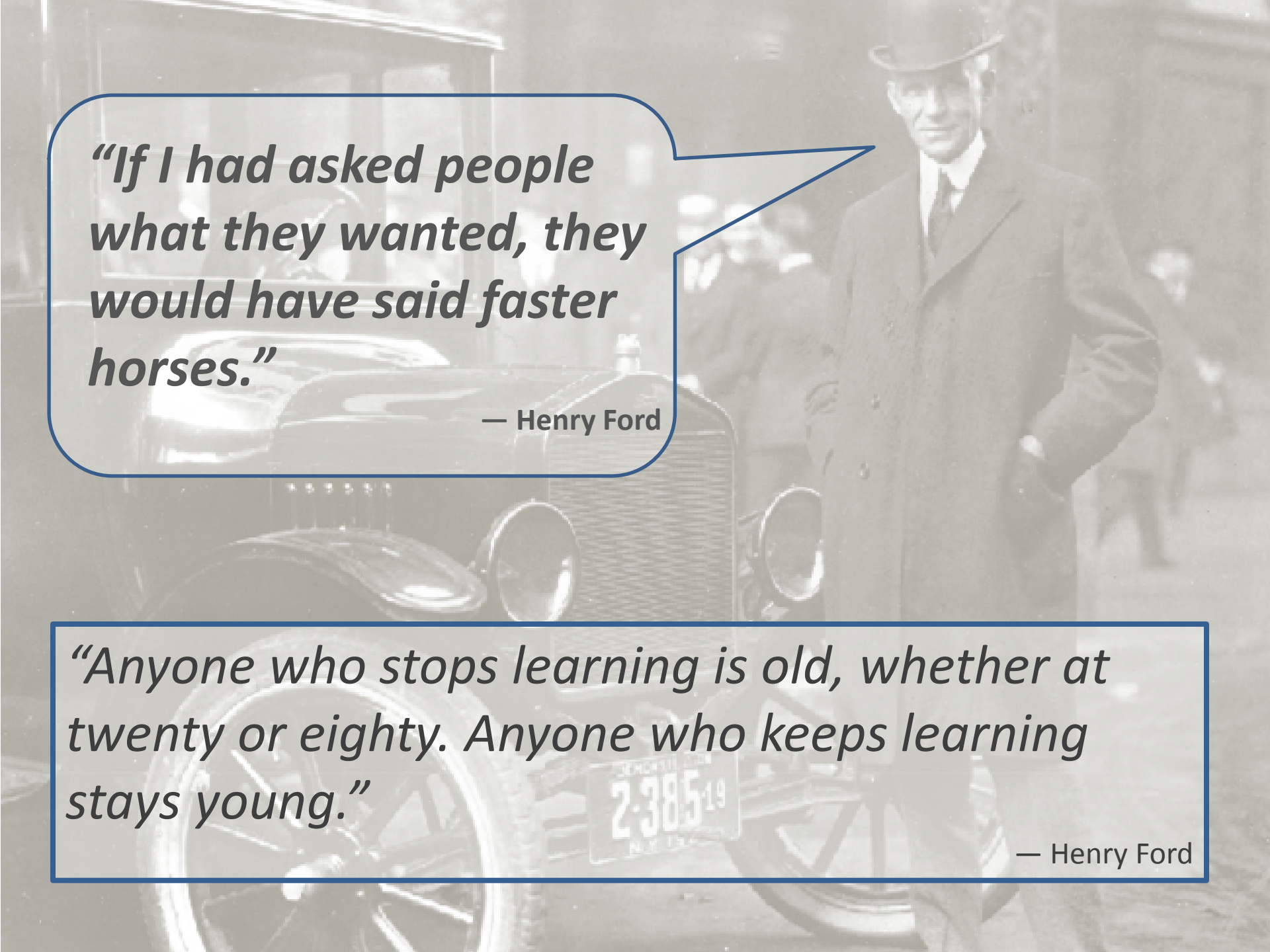
Jim Pingel, New Auburn

County Officials Using iPads



- **Cost Effectiveness**
- **Sustainability**
- **Productivity**
- **Leaders/Decision Makers**

Is Education a Want or a Need?

A black and white photograph of Henry Ford standing next to a vintage car. He is wearing a dark suit, a white shirt, a dark tie, and a bowler hat. The car is a classic model with large wheels and a prominent front grille. The background is slightly blurred, showing other people and what appears to be an outdoor setting.

“If I had asked people what they wanted, they would have said faster horses.”

— Henry Ford

“Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young.”

— Henry Ford

The Real Question: “Education and Outreach, **Why Not?**”



Jill Hietpas

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<http://eauclaire.uwex.edu/community-development/>

<http://broadband.uwex.edu/>

