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(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2011-12
(session year)

Senate
(Assembly, Senate or Joint)

Committee on Agriculture, Forestry, and Higher Education...

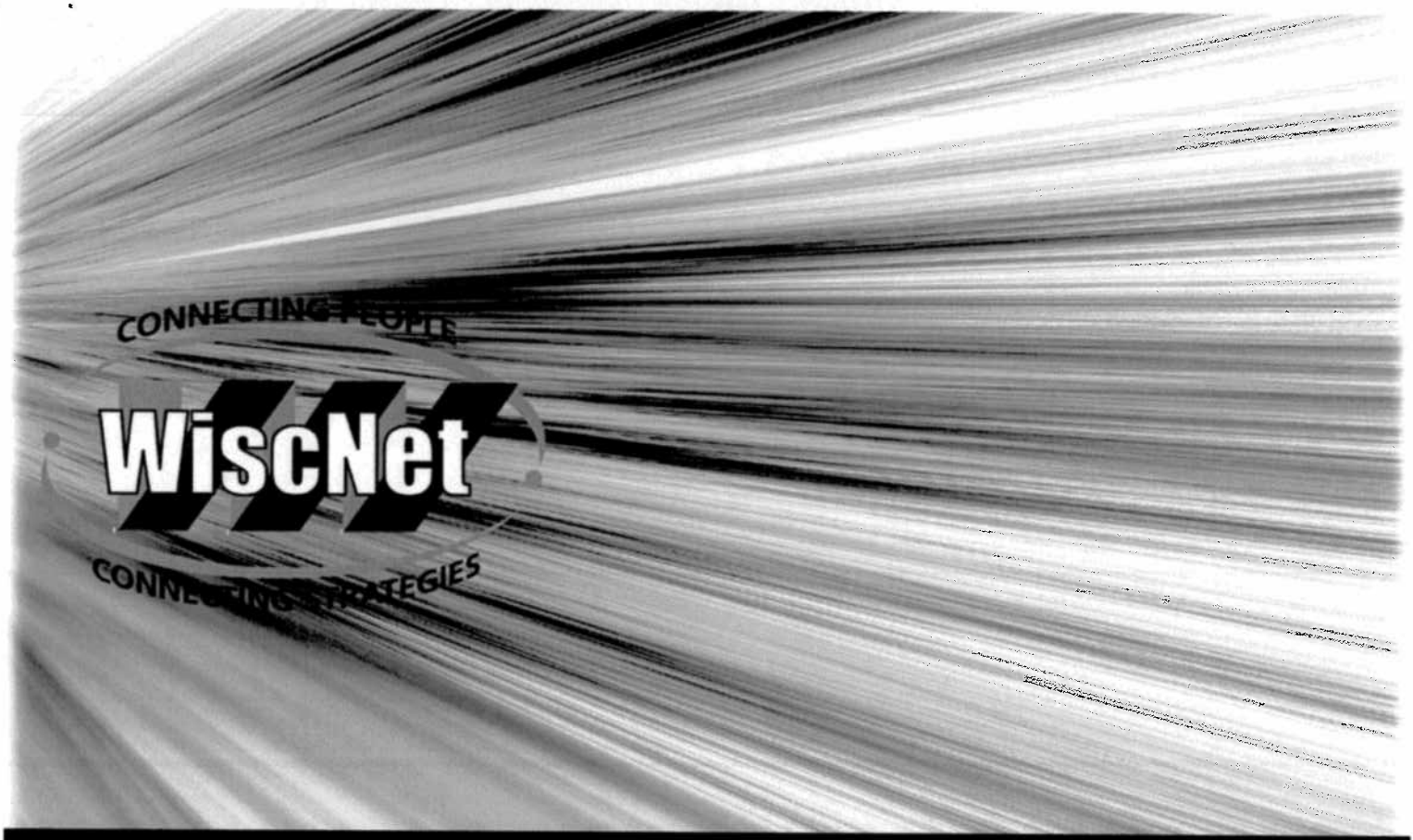
COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
  (**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
  (**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**

* Contents organized for archiving by: Stefanie Rose (LRB) (November 2012)



THE WISCNET CONNECTION

WiscNet is an invaluable resource for education, research and public service in Wisconsin because it not only provides cost effective, high-speed, highly reliable network connectivity, but it also provides opportunities for collaboration, consolidation and efficiency among organizations across the state. As a product of the Wisconsin Idea, WiscNet provides the essential framework for expanding research and education beyond the classroom. By connecting organizations, building relationships and sharing services institutions can achieve far more together than they can alone.

WISCNET
740 Regent Street #203
Madison, WI 53715

WHAT IS WISCNET?

WiscNet is a non-profit cooperative formed to promote collaboration and efficiency among research, education and public service organizations.

ADVANCED

SCALABLE

AFFORDABLE

RELIABLE

SUSTAINABLE

UNIQUE

FAST

UNCONGESTED

COLLABORATIVE

INNOVATIVE

GROWING

WHY WISCNET MATTERS

- The network is owned and controlled by 465 Wisconsin research, education and public service organizations.
- The quality of the network is unparalleled. Users experience low latency, uncongested throughput and bursting capabilities.
- Researchers routinely require tremendous amounts of bandwidth to do their work. They need gigabits of capacity – the private sector cannot provide that, WiscNet can.
- Some research applications do not work on conventional telecommunication networks. For example, grid research computing uses Lambda Switching technology. WiscNet can provide these services.
- As a non-profit organization, network costs are kept substantially low. Our revolutionary business model encourages members to use and grow into their full capacity at no additional cost.
- WiscNet connects Wisconsin's research and education community to other state, regional, national and international research and education networks. Many federal research grants require the UW to be a part of these networks.
- Research, whether conducted at an R1 University or initiated through a STEM program at a K12 school, requires ample bandwidth and direct connections to other educational and research institutions. WiscNet offers both.
- To ensure educational success at all levels throughout Wisconsin, UW System, K12 schools, Private Colleges, Technical Colleges, Libraries and Healthcare Organizations need to be interconnected.

WiscNet Members 2011

CESA
CESA 1
CESA 2
CESA 3
CESA 4
CESA 5
CESA 6
CESA 7
CESA 8
CESA 9
CESA 10
CESA 11
CESA 12

Government
Buffalo County
Calumet County
Chippewa County
City of Appleton
City of Beloit
City of Eau Claire
City of Madison
City of Menasha
City of Milwaukee (Dpt of Public Wrks)
City of Neenah
City of Oshkosh
City of Superior
Dane County
Door County
EauClaire County
Forest County
Green Lake County
Jackson County
Juneau County
Kenosha County
LaFayette County
Pepin County
Pierce County
Portage County
Price County
Rock County
Sheboygan County
State of Wisconsin
Town of Grand Chute
Town of Menasha
Walworth County
Washburn County
Waupaca County
Waushara County
Winnebago County
WI Dpt of Military Affairs

Health Care
Dove Health Care
Meriter Hospital, Inc.
Nellisville Memorial Medical Center
Rusk County Memorial Hospital
Sacred Heart Hospital
St. Joseph's Hospital

Higher Education
Aurora University
Bellin College of Nursing
Beloit College
Blackhawk Technical College
Cardinal Stritch College
Carroll University
Carthage College
Chippewa Valley Technical College
College of the Menominee Nation
Concordia University
Fox Valley Technical College
Gateway Technical College
Lac Courte Oreilles Ojibwa Community College
Lakeland College
Lakeshore Technical College
Madison Area Technical College
Marian University of Fond du Lac
Marquette University
Medical College of Wisconsin
Mid-State Technical College
Milwaukee Area Technical College
Milwaukee Institute of Art and Design
Moraine Park Technical College
Nicolet Area Technical College
Northcentral Technical College
Northeast Wisconsin Technical College
Northland College
Ripon College
Silver Lake College

Higher Education continued...
Southwest Wisconsin Technical College
St. Norbert College
Trout Lake Station
UW Colleges
UW Extension
UW-Eau Claire
UW-Green Bay
UW-La Crosse
UW-Madison
UW-Milwaukee
UW-Oshkosh
UW-Parkside
UW-Platteville
UW-River Falls
UW-Stevens Point
UW-Stout
UW-Superior
UW-System Administration
UW-Whitewater
UWC-Baraboo/Sauk County
UWC-Barron County
UWC-Fond du Lac
Waukesha County Technical College
Western Technical College
Wisconsin Indianhead Technical College
Wisconsin Technical College System
UWC-Fox Valley
UWC-Manitowoc
UWC-Marathon County
UWC-Marinette
UWC-Marshfield/Wood County
UWC-Richland
UWC-Rock County
UWC-Sheboygan
UWC-Washington County
UWC-Waukesha
UWExtension-ConEd-ELearn
Viterbo University
Wisconsin Lutheran College

K12
Abbotsford School District
Albany School District
Algoma School District
Alma Center - Humbird-Merrillan Schools
Almond-Bancroft School District
Altoona School District
Amery School District
Antigo School District
Appleton School District
Arrowhead High School
Ashwaubenon School District
Athens School District
Augusta School District
Bangor School District
Baraboo School District
Barneveld School District
Barron Area School District
Bayfield School District
Belleville School District
Belmont School District
Beloit School District
Beloit Turner School District
Benton School District
Berlin School District
Big Foot High School
Birchwood School District
Black Hawk School District
Bonduel School District
Boscobel School District
Bowler School District
Boyceville Community Schools
Brighton School District
Brillion School District
Bristol School District 1
Burlington Area School District
Cadott Community School District
Cambria-Friesland School District
Cambridge School District
Cameron School District
Campbellsport School District
Cashton School District
Cassville School District
Chequamegon School District

K12 continued...
Chetek School District
Chilton School District
Chippewa Area Catholic Schools
Chippewa Falls Area - Unified School District
Clear Lake School District
Cochrane-Fountain City School District
Colby School District
Coleman Public Schools
Colfax School District
Columbus School District
Cornell School District
Crandon Schools
Crivitz School District
Cuba City School District
Cumberland School District
Darlington Community Schools
Deerfield Community Schools
DeForest School District
Delavan-Darien School District
Denmark School District
Dodgeland School District
Dodgeville School District
Durand School District
East Troy Community Schools
Eau Claire Area School District
Eau Claire Catholic Schools
Edgar School District
Edgerton School District
Edgewood High School
Elcho School District
Elk Mound Area School District
Elkhart Lake-Glenbeulah School District
Elkhorn School District
Ellsworth Community School District
Elmwood School District
FACES-Springs Catholic Education System
Fall Creek School District

K12 continued...
Florence School District
Fond du Lac School District
Fontana Joint 8 School District
Fox Point - Bayside School District #2
Frederic School District
Freedom Area School District
Gillett School District
Gilman School District
Glendale-River Hills School District
Glenwood City School District
Goodman Armstrong School District
Grafton School District
Granton School District
Grantsburg School District
Green Bay Area Public School District
Green Lake School District
Greendale School District
Greenfield School District
Greenwood School District
Gresham School District
Hamilton School District
Hartford Union High School
Hayward Community Schools
Herman School District #22
Highland School District
Holmen School District
Horicon School District
Howard Suamico School District
Howards Grove School District
Hudson School District
Hurley School District
Hustisford School District
Iola-Scandinavia School District
Iowa-Grant School District
Ithaca School District
Jefferson School District
Juda School District
Kiel School District

WiscNet Members 2011

K12 continued...
Lac du Flambeau School District
La Crosse School District
Ladysmith-Hawkins School District
Lake Country School
Lake Mills School District
Lake Holcombe School District
Lakeland Union High School
Laona School District
Lena School District
Linn Joint 6 School District
Linn-Bloomfield J4 School District
Lodi School District
Lomira School District
Loyal School District
Luck School District
Madison Metropolitan School District
Manawa School District
Manitowoc School District
Maple Dale School District
Maple School District
Marathon City School District
Marathon Country Special Education
Marion School District
Markesan School District
Marshall School District
Marshfield School District
Mayville School District
McFarland School District
Medford School District
Mellen School District
Menasha School District
Menominee Indian School District
Menomonee Falls School District
Menomonie Area School District

K12 continued...
Mequon-Thiensville School District (Homestead High School)
Mercer School District
Merrill Area Public Schools
Merton Community School District
Messmer Catholic
Middleton-Cross Plains School District
Milton School District
Milwaukee Public School District
Mineral Point School District
Minocqua Hazelhurst Lake Tomahawk School District
Mishicot School District
Mondovi School District
Monona Grove School District
Monroe School District
Montello School District
Monticello School District
Mt. Horeb Area School District
Mukwonago School District
Muskego-Norway School District
Necedah School District
Nellsville School District
New Glarus School District
New Holstein School District
New Lisbon School District
New London Public Schools
New Richmond School District
Niagara School District
Nicolet High School
North Lakeland Elementary School
Northern Ozaukee School District
Northland Pines School District
Northwood School District
Oakfield School District

K12 continued...
Oconto Falls School District
Oconto School District
Oregon School District
Osceola School District
Oshkosh Public Schools
Osseo Fairchild School District
Our Lady Queen of Peace School
Owen-Withee School District
Palmyra-Eagle Area School District
Pardeeville School District
Parkview School District
Pecatonica School District
Pembine Beecher Dunbar Schools
Peshtigo School District
Pewaukee School District
Phelps School District
Phillips School District
Platteville School District
Plum City School District
Plymouth School District
Portage Community School District
Poynette School District
Prairie du Chien School District
Prairie Farm School District
The Prairie School
Prentice School District
Prescott School District
Princeton School District
Pulaski Community School District
Randall School District
Raymond School District
Reedsburg School District
Reedsville School District
Rhinelander School District
Rib Lake School District
Rice Lake Area School District
Richfield School District

K12 continued...
Rio School District
Ripon Public Schools
River Falls School District
River Ridge School District
River Valley School District
Riverdale School District
Rosendale-Brandon School District
Rosholt School District
Royall School District
Rubicon Joint #6 School District
Sacred Heart of Jesus and Mary School
Sacred Heart School of Theology
Salem Grade School Joint District
Sauk Prairie School District
School District of Flambeau
School District of Gilmanton
Sevastopol School District
Sharon School District
Shawano School District
Sheboygan Falls School District
Shell Lake School District
Shiocton School District
Shullsburg School District
Siren School District
Slinger School District
Solon Springs School District
Somerset School District
Southern Door County Schools
Southwestern Wisconsin School District
Spencer School District
Spooner School District
Spring Valley School District
St. Catherines High School
St. Croix Central School District

K12 continued...
St. Croix Falls School District
St. Thomas Aquinas Parish School
Stanley-Boyd School District
Stevens Point Public Schools
Stone Bank School District
Stoughton School District
Stratford School District
Sturgeon Bay School District
Sun Prairie Area School District
Suring School District
Thorp School District
Tigerton School District
Tomah School District
Tomahawk School District
Tomorrow River School District
Trevor-Wilmot Consolidated Grade School District
Turtle Lake School District
Twin City Catholic Educational System
Twin Lakes School District
Two Rivers School District
Union Grove Elementary School
Union Grove High School
Unity School District
Verona Area School District
Wabeno School District
Walworth School District
Washburn School District
Washington Island School District
Waterford Graded School District
Waterford Union High School
Waterloo School District
Watertown Unified School District
Waukesha Catholic Memorial High School

K12 continued...
Waunakee School District
Waupaca School District
Waupun School District
Wausaukee School District
Wauzeka Steuben School District
Webster School District
West Allis - West Milwaukee School District
Westfield School District
Westosha School District
Westosha Special Education
Weyauwega-Fremont School District
White Lake School District
Whitewater Unified School District
Winneconne School District
Winter School District
Wisconsin Center for the Blind and Visually Impaired
Wisconsin Deaf School
Wisconsin Dells School District
Wisconsin Heights Schools
Wisconsin Lutheran High School
Wittenberg Birnamwood School District
Wonewoc-Union Center School District
Woodruff Joint #1 School District
Wrightstown School District
Xavier High School

WiscNet Members 2011

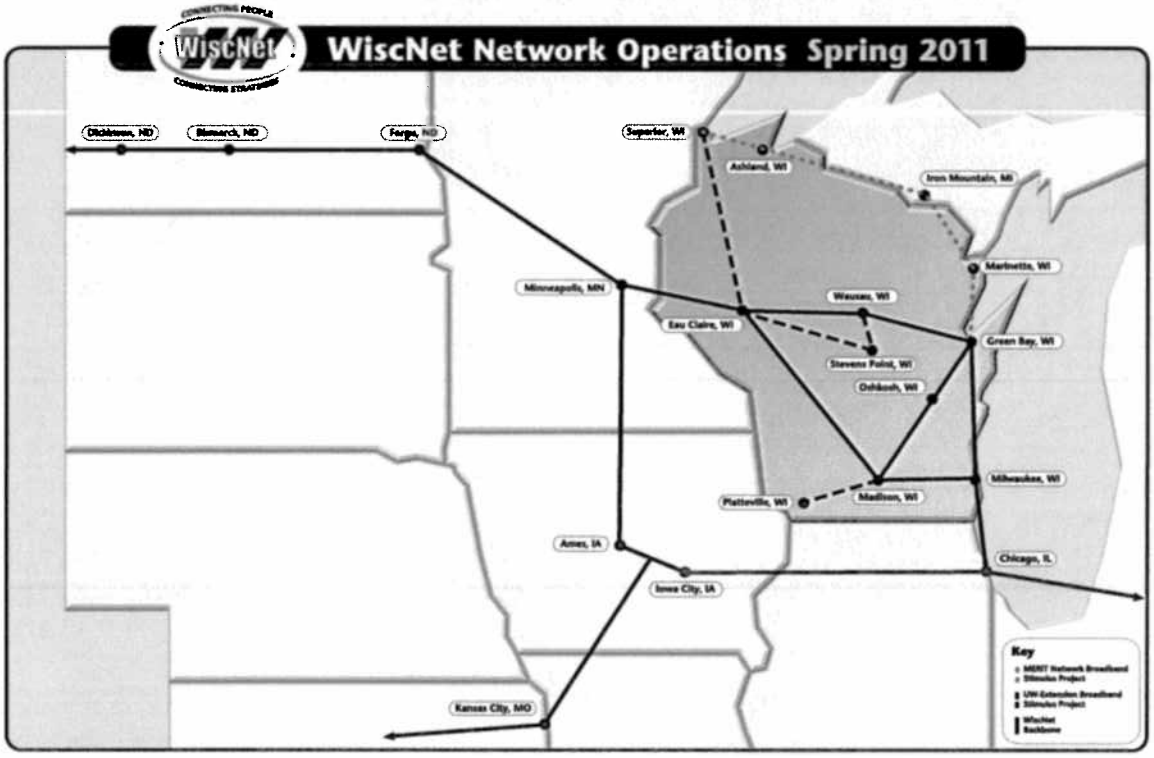
Library

Arrowhead Library System
Eastern Shores Library System
Indianhead Federated Library System
Kenosha Public Library
Lakeshores Library System
Mid-Wisconsin Federated Library System
Nicolet Federated Library System
Northern Waters Library Service
Outagamie Waupaca Library System
South Central Library System
Southwest Library System
Waukesha County Federated Library System
Winding Rivers Library System
Winnefox Library System
Wisconsin Valley Library Service

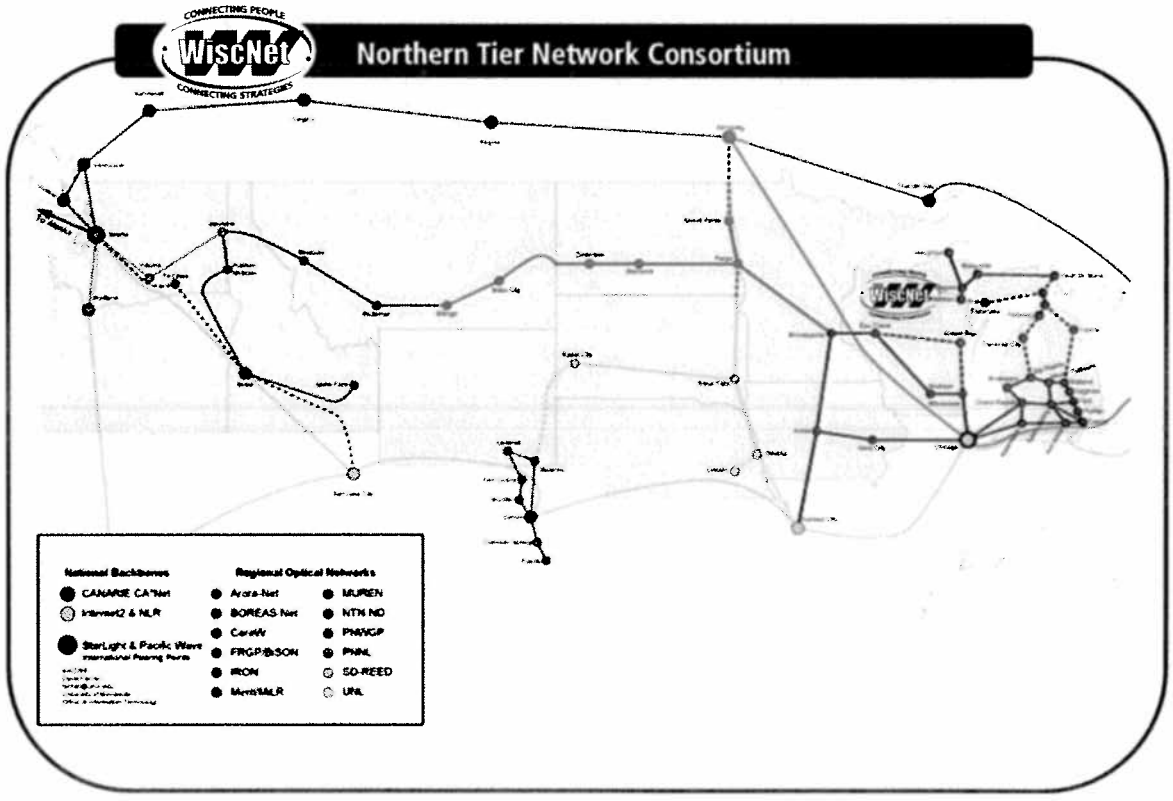
Other

BOREAS-Net
Community Care of Central Wisconsin
Iowa State University
Milwaukee Public Museum
Pier Wisconsin
Southeastern Wisconsin Information Technology Exchange
Superior Not-for-profits (UW- Superior)
University of Iowa
University of Minnesota

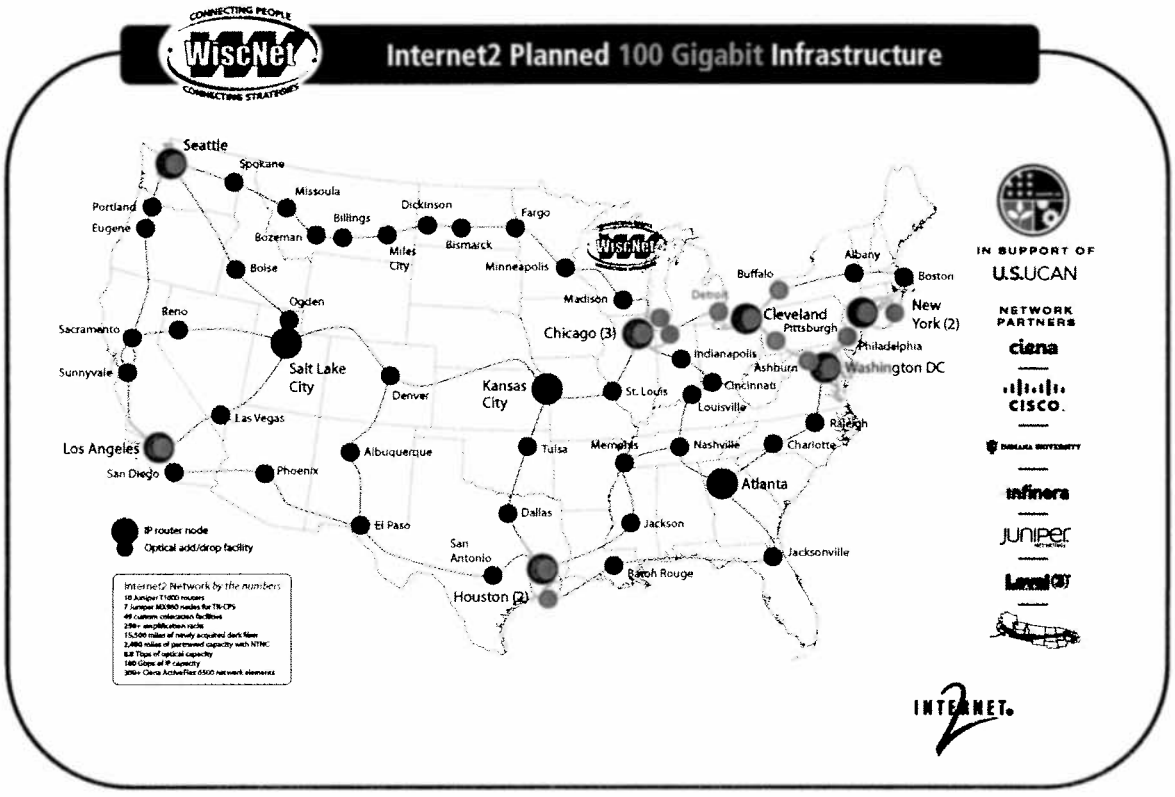
WiscNet Network Maps



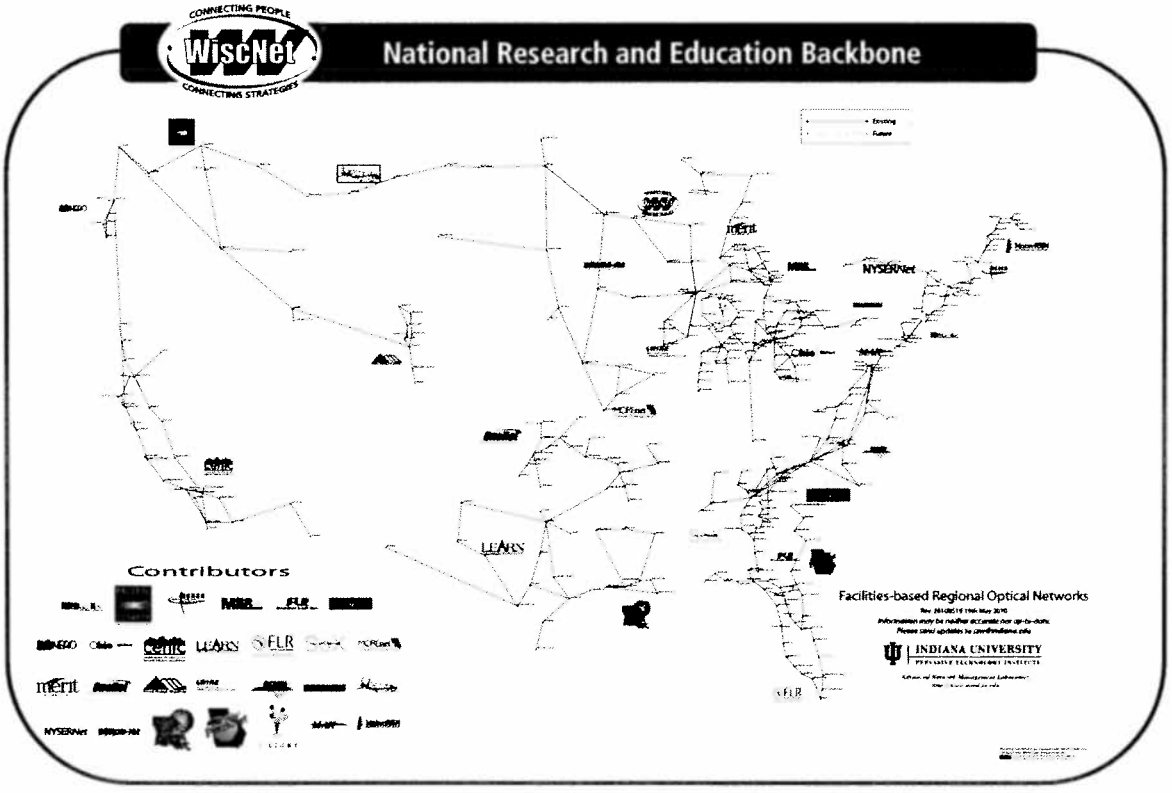
WiscNet performs day-to-day operations for the Boreas Network (a collaboration between Iowa State University, the University of Iowa, the University of Minnesota, and the University of Wisconsin – Madison), Northern Tier – North Dakota (a portion of the larger Northern Tier Network), and University of Wisconsin backbone.



A robust national research backbone through 13 northwestern states. Current membership includes Universities, Non-profits, Research Facilities and Regional Networks.



A National Backbone plan to Interconnect Community Anchor Institutions at 100 Gb/s.
This Ultra High Capacity network will allow research and education to advance.



A collation of "StateNets" create the national Research and Education infrastructure;
it is an ecosystem dependent on all parts, including WiscNet.

State Research and Education Networks

WiscNet-like organizations create the national Research and Education infrastructure; it is an ecosystem dependent on all parts – including WiscNet.

- **ALASKA**
  AK20
- **ARKANSAS**
  Arkansas Research and Education Optical Network
- **CALIFORNIA**
  Corporation for Education Network Initiative in California
- **COLORADO**
  Front Range Gigapop
- **CONNECTICUT**
  Connecticut Education Network
- **FLORIDA**
  Florida Lambda Rail
- **GEORGIA**
  Southern Crossroads
- **IDAHO**
  Idaho Regional Optical Network
- **ILLINOIS**
  Metropolitan Research and Education Network
- **INDIANA**
  I-LIGHT
- **IOWA**
  Iowa Communications Network
- **KANSAS**
  Kansas Research and Education Network
- **KENTUCKY**
  Kentucky Regional Optical Network
- **LOUISIANA**
  Louisiana Optical Network Initiative
- **MARYLAND**
  Mid-Atlantic Crossroads
- **MASSACHUSETTS**
  Northern Crossroads
- **MINNESOTA**
  Northern Lights GigaPop
- **MICHIGAN**
  Merit Network, Inc.
- **MISSOURI**
  Missouri Research and Education Network
- **NEW JERSEY**
  NJEDge.Net
- **NEW MEXICO**
  Albuquerque Gigapop
- **NEW YORK**
  NYSERNet
- **NORTH CAROLINA**
  North Carolina Research and Education Network
- **OHIO**
  Ohio Academic Resources Network/OARnet
- **OKLAHOMA**
  OneNet
- **OREGON**
  Oregon Gigapop
- **PENNSYLVANIA**
  Three Rivers Optical Exchange
- **RHODE ISLAND**
  Ocean State Higher Education Economic Development and Administrative Network/OSHEAN
- **SOUTH CAROLINA**
  SC LightRail
- **TEXAS**
  Lonestar Education and Research Network
- **UTAH**
  Utah Education Network
- **VERMONT**
  Northern Crossroads
- **VIRGINIA**
  Network Virginia
- **WASHINGTON**
  Pacific Northwest Gigapop
- **WEST VIRGINIA**
  WVNET
- **WISCONSIN**
  WiscNet

Our mission is to fortify research, education, and public service with advanced communication technologies. It is done in partnership. It is accomplished by strengthening the association, the members, and the communities to which we belong.

It is championing the Wisconsin Idea by advancing high-performance networks and services that extend member resources throughout the state and beyond.

WiscNet

We Grow Networks for Wisconsin

During our twenty plus years together, our members have grown an advanced network that moves tens of gigabits per second across Wisconsin and beyond. As we continue to grow our shared network, we are taking a strategic step forward by working to grow other high-performance networks. WiscNet wants to help our members and community partners -- public and private -- grow and connect many networks that will move hundreds of gigabits per second, enabling Wisconsin and our communities to advance in the 21st century and beyond.

WE ARE GROWING MORE NETWORKS BY:

GROWING COMMUNITY AREA NETWORKS

In Wisconsin we have several key players in education, healthcare, and research that need large amounts of bandwidth between their organizations and to the world. When these organizations pool their skills and resources to collaboratively build a community network, local economic development opportunities are enabled through unlimited capacity and cost efficiencies.

ADVANCING THE WISCNET NETWORK

To meet the advanced needs of our members, we are augmenting our backbone network with new optical paths, examining new technologies and protocols, and upgrading our deployed infrastructure

ESTABLISHING PUBLIC/PRIVATE PARTNERSHIPS TO ACHIEVE BROADBAND SUCCESS

We have developed relationships with private partners who want to cooperate on building a shared advanced broadband infrastructure. Serving the needs of our community anchor institutions requires access to optical fiber infrastructure. Whether it's built or bought, we are eager to work with our private partners to make innovation happen.

MAKING U.S. UCAN A SUCCESS FOR WISCONSIN

Internet2 will be building a 100 gigabit-per-second national network backbone and WiscNet will be instrumental in bringing this network through Wisconsin to connect Wisconsin Community Anchor Institutions. http://www.usucan.org/

BUILDING COMMUNITY CAPACITY WITH UW EXTENSION

We're committed to working closely with our charter member University of Wisconsin-Extension to use their statewide expertise in economic development, leadership capacity-building, and community education to move broadband adoption forward.

FULFILLING THE NATIONAL BROADBAND PLAN FOR WISCONSIN

We are working with other statewide and community organizations to successfully deploy universally available and affordable advanced broadband to all Wisconsin communities in accordance with the National Broadband Plan. http://www.broadband.gov/plan/

Collaboration vs. Competition

Bill wants to add a new large deck to his house. He gets a quote from a local remodeler, but finds that it is outside his budget. He would need to compromise and accept having a smaller deck than he wants. Bill gets quotes from other remodelers and finds that he can get the same small deck built for slightly less money. This is **competition**.

Bill tells George, his neighbor, about his plans and discovers that his neighbor would also like a deck. They figure out that they can rent some power tools, buy some lumber, and with a couple of weekends of work they can both have decks. Add in a couple of cases of beer, and they can probably get some help from their other neighbors. This is **collaboration**.

At the next neighborhood meeting, Bill and George talk about their plans. They find that 10 of their neighbors also want decks. Some can bring valuable skills and resources to the effort. Susan teaches woodworking at the local high school, Ted works at a local lumberyard and can get a discount on lumber, Herb owns a power posthole digger, Sam has power tools, and Tammy has a large batch of home brew beer. The rest are willing to help out and contribute money towards the supplies. Suddenly, 12 homes have new decks. They are larger and better built than anything they could have done alone and they cost less than the competitive commercial options. That's **better collaboration**.

The local builders association learns about these 12 new decks. They aren't happy. They lobby the city council to outlaw neighbors helping each other with DIY home improvement projects. They argue that they can't compete against citizens working together to solve their own problems. The citizens argue that they each got bigger/better decks that they wouldn't have been able to afford if they each individually tried to build or buy one.

WiscNet has been fostering **better collaboration** between higher education, K12 schools, libraries, healthcare, local governments, etc. for 22 years. By collaborating, schools get more Internet capacity at a lower cost than they could have accomplished alone. The Telecom Lobby wants legislation that prohibits public organizations from collaborating. This would force the public organizations (funded by tax payers) to have to individually purchase services, such as Internet access. This would be lower speed service at considerably higher prices.

Frequently Asked Questions

HOW IS WISCNET DIFFERENT FROM BADGERNET?

BadgerNet and WiscNet complement each other, not compete with each other. WiscNet and BadgerNet each offer two different, but necessary, components to accessing the Internet:

1. **BadgerNet** contracts with outside vendors, like AT&T, to provide circuits between an organization's building and the Internet Service Provider.
2. **WiscNet** offers Internet connectivity through their member-owned network.

Most K-12 schools and public libraries use BadgerNet to connect to WiscNet, which connects them to the world. WiscNet complements BadgerNet by providing various education and research services upon the BadgerNet infrastructure and beyond.

IS WISCNET SUBSIDIZED?

No. WiscNet is fully funded by member fees and does not receive any federal funding. WiscNet is a nonprofit 501(c)(3) cooperative and not a government "program" or "agency". WiscNet services are not subsidized; they are utilized by members in a pay for service business arrangement. WiscNet is able to keep prices low because they are a cost recovery, not-for-profit research and education collaborative. All 465 members have real costs to satisfy their advanced networking needs and they choose to work together to bring down all of their expenses.

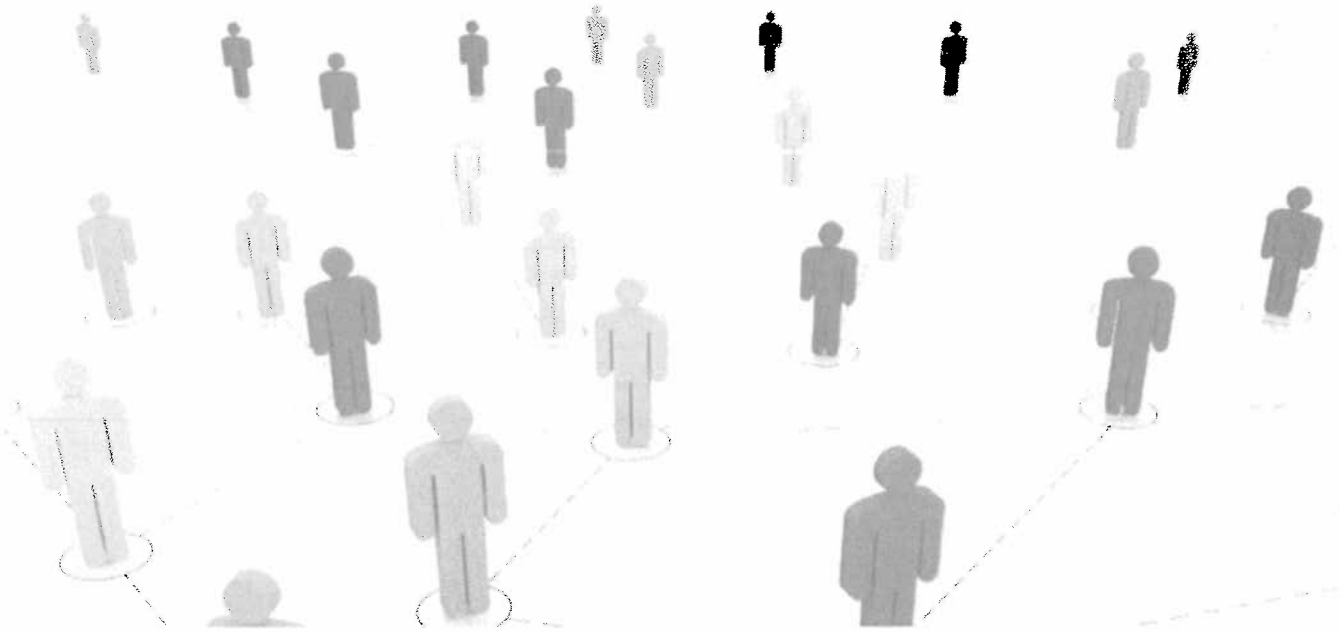
WiscNet's nonprofit 501(c)(3) status and financial information can be confirmed by visiting GuideStar (www.guidestar.org), a database of financial and tax information for our nation's nonprofit organizations.

IS WISCNET ILLEGAL?

No. Some have claimed that WiscNet is in violation of Wisconsin statute 16.972 which prohibits the University of Wisconsin System from providing telecommunications services. The services operated over the network are provided by WiscNet not the University. The University of Wisconsin system is a member of WiscNet, a 501(c)(3) organization that provides services to its members. The University of Wisconsin and WiscNet are not in violation of this statute.

WHAT IS BCCB?

Building Community Capacity through Broadband (BCCB) is the Wisconsin initiative to connect community anchor institutions to broadband technologies through sustainable public-private partnerships and Community Area Networks (CANs). UW Extension leads the initiative after receiving two major federal grants for broadband networks and education in five Wisconsin communities: the Chippewa Valley Region, Menominee Nation, Platteville, Superior and Wausau. WiscNet partners with UW Extension to grow more networks for Wisconsin. For more information on BCCB please visit http://broadband.uwex.edu/.



THE PEOPLE NETWORK

Keeping Connected

WiscNet online:

Main Website
http://www.wiscnet.net/

Blog
http://www.wiscnet.net/

My WiscNet
http://my.wiscnet.net/

Facebook
http://www.facebook.com/wiscnet

Twitter
http://twitter.com/wiscnet

Delicious
http://www.delicious.com/covelli/wiscnet

WiscNet connects people.

We create opportunities for our community to grow collaborations and share strategies.

We work together to articulate needs and then we build connections, advance strategies and create services that solve the real-world problems of our members.

A well-designed "people network" lets the people that our members serve and employ make simple and intuitive use of our most valuable resource: each other.

We aim to empower and foster the growth of the WiscNet community through the following opportunities:

- **Third Thursday Webinars**
  Monthly web conferences on topics related to networking and/or educational technology.

- **WiscNet Wire - The Blog**
  A regularly updated blog featuring articles on current trends in networking and education technology.

- **WiscNet Wire - The Newsletter**
  An e-mail newsletter designed to update our members on important news and events.

- **WiscNet Wire - The Podcast**
  A podcast series intended to help leaders in education connect with one another and share strategies.

- **Future Technologies Conference**
  Our annual meeting and conference offering sessions on important topics spanning our entire membership.

- **My WiscNet**
  A portal of network analysis tools.

- **Resource Sharing**
  A collection of reports and research results to inform and guide our members.

- **Pilot Opportunities**
  WiscNet works with members to develop new services. New services are created by the members, for the members in partnership with WiscNet staff.

BADGERNET & WISCNET

WORKING TOGETHER TO HELP WISCONSIN SCHOOLS

The following 273 K12 schools and districts rely on the BadgerNet and WiscNet partnership:

Albany School District
Algoma School District
Alma Center School District
Almond Bancroft School District
Amery School District
Antigo School District
Arrowhead School District
Ashwaubenon School District
Athens School District
Augusta School District
Bangor School District
Baraboo School District
Barneveld School District
Barron School District
Bayfield School District
Belleville School District
Belmont School District
Beloit Turner School District
Benton School District
Birchwood School District
Black Hawk School District
Boscobel School District
Bowler School District
Boyceville School District
Brighton School District
Brillion School District
Bristol School District
Burlington School District
Cambria Friesland School District
Cambridge School District
Cameron School District
Cashton School District
Cassville School District
Chequamegon School District
Chilton School District
Clear Lake School District
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Coleman School District
Colfax School District
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Cuba City School District
Cumberland School District
Darlington School District
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DeForest School District
Denmark School District
Dodgeland School District
Durand School District
East Troy School District
Eau Claire Catholic Schools
Edgar School District
Edgewood High School
Elcho School District
Elkhart Lake School District
Elkhorn School District
Ellsworth School District
Elmwood School District
Erin School District
FACES Springs Catholic Education System
Fall Creek School District
Florence School District
Fontana School District
Fox Point Bayside School District
Frederic School District
Freedom School District
Gillett School District
Gilman School District
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Jefferson School District
Kiel School District
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Lake Country School District
Lake Holcombe School District
Lake Mills School District
Lakeland Union High School
Laona School District
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Linn School District
Lodi School District
Lomira School District
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Manawa School District
Manitowoc School District
Maple Dale School District
Maple School District
Marathon City School District
Marathon County Special Education
Marion School District
Markesan School District
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New Richmond School District
Niagara School District
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North Lakeland Elementary
Northern Ozaukee School District
Northland Pines School District
Northwood School District
Norwalk Ontario School District
Oakfield School District
Oconto Falls School District
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Oregon School District
Osceola School District
Our Lady Queen of Peace School
Pardeeville School District
Parkview School District
Pecatonica School District
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Pewaukee School District
Phelps School District
Phillips School District
Pittsville School District
Plum City School District
Plymouth School District
Portage School District
Poynette School District
Prairie Du Chien School District
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Prairie School
Prentice School District
Prescott School District
Princeton School District
Pulaski School District
Randall School District
Raymond School District
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River Falls School District
River Ridge School District
River Valley School District
Riverdale School District
Rosholt School District
Royall School District
Rubicon School District
Sacred Heart School District
Sacred Heart School of Theology
Salem School District
Sauk Prairie School District
Sevastopol School District
Sharon School District
Shawano School District
Sheboygan Falls School District
Shiocton School District
Shullsburg School District
Siren School District
Solon Springs School District
Southern Door County School District
Southwestern Wisconsin School District
Spencer School District
Spring Valley School District
St Catherine's High School
St Croix Central School District
St Croix Falls School District
St Thomas Aquinas Parish School
Stone Bank School District
Stoughton School District
Stratford School District
Sturgeon Bay School District
Sun Prairie School District
Suring School District
Tigerton School District
Tomah School District
Tomahawk School District
Tomorrow River School District
Turtle Lake School District
Twin Lakes School District
Two Rivers School District
Union Grove Grade School
Union Grove School District
Unity School District
Verona School District
Wabeno School District
Washburn School District
Washington Island School District
Waterford Graded School District
Waterford Union High School
Waterloo School District
Watertown School District
Waukesha Catholic Memorial High School
Waunakee School District
Waupun School District
Wausaukee School District
Wautoma School District
Wauzeka School District
Webster School District
West Allis School District
West Salem School District
Westfield School District
Westosha School District
Westosha Special Education
Weyauwega Fremont School District
White Lake School District
Whitewater School District
Winneconne School District
Winter School District
Wisconsin Center for the Blind and Visually Impaired
Wisconsin Deaf School
Wisconsin Dells School District
Wisconsin Heights School District
Wisconsin Lutheran High School
Wittenberg School District
Wonewoc School District
Woodruff School District
Wrightstown School District
Xavier School District
CESA 1
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CESA 11
CESA 12

A majority of Wisconsin K12 schools rely on a combination of services from both BadgerNet and WiscNet to obtain fast and reliable broadband

WiscNet Board of Directors


FORWARD
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TO: Senate Committee on Agriculture, Forestry, and Higher Education

FROM: Terry Dawson, Legislative Committee Chair, Wisconsin Library Association

RE: Support for SB 375

Thank you, Senator Schultz and members of the committee, for the opportunity to testify in favor of SB 375.

My name is Terry Dawson, and as chair of the Wisconsin Library Association's legislative committee, I speak on behalf of our nearly 2,000 members and the many thousands of people who support libraries of all types in Wisconsin, and particularly for those who rely on libraries as their source of access to broadband telecommunications.

WLA urges you to recommend passage of AB 375 to delay until July 1, 2014 the restrictions on participation by the UW System in selling or providing telecommunications services. In particular, WLA feels the delay is necessary because of the potential impact on WiscNet's 450 members – many of whom are part of Wisconsin's library community: libraries in K-12 schools and institutions of higher education, as well as 95% of the state's public libraries. These institutions count on WiscNet for high quality, cost-effective Internet service to their students, faculty, staff and patrons. Based on data from the state Department of Administration's website, most Internet providers charge 4-5 times as much as WiscNet.

As you know, current law requires the Legislative Audit Bureau to complete a financial and performance of audit of the UW's relationship with WiscNet by January 1, 2013. This leaves only 6 months to respond to audit recommendations before the legislation goes into effect on July 1, 2013.

Speaking on behalf of our school members, one reason timing is so critical is that schools must submit applications for federal E-rate discounts well in advance to be eligible. For example, there are early 2013 deadlines for eligibility for the June 2013 through July 2014 E-rate funding year. Schools will likely need to know by February 2013 who their Internet provider will be and they need assurance that the provider will offer services through June, 2014. Extending this legislation to July 1, 2014, will give schools this assurance.

If the LAB audit requires changes to WiscNet's operations, structure or services, it will be important to give the WiscNet board and staff ample time to implement these required changes. Likewise, schools will need time to make certain they correctly complete their E-rate applications.

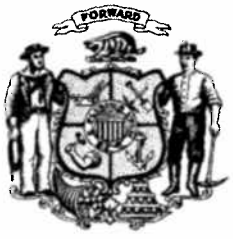
(MORE)

If I may digress just slightly, I do want to reference a January 17 press release from the Wisconsin State Telecommunications Association (WSTA). The WSTA claims that some supporters of this bill are making "misleading" statements that 90% of Wisconsin's libraries don't have broadband access at 4Mbps. Based on August 2011 data obtained directly from the Department of Administration's TEACH program, **97% of our libraries have less than 4Mbps.** Some libraries will receive additional TEACH subsidized bandwidth as a result of the recent BadgerNet contract extension but the great majority will likely still be under 4Mbps. (Ironically, 25% of our libraries have an additional broadband circuit from a local cable or phone company because the TEACH program does not have the budget to fund all library or school requests for more bandwidth.) Although higher speed access may be available, it comes at a substantially higher cost at a time when our publicly supported schools and libraries are making great efforts to maintain services in an environment of severe budget constraints.

In summary, on behalf of the Wisconsin library community, I urge the committee to recommend AB 375. We think this one year extension will be very helpful and we do not see any "downside" to passing this legislation.

Thank you for the opportunity to present the perspective of the Wisconsin Library Association on this important matter.

WISCONSIN STATE LEGISLATURE



Access Wisconsin

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Testimony to the Senate Committee

On Agriculture, Forestry and Higher Education

In Opposition to SB 375

Mark Weller, President

Access Wisconsin

Thank you, Mr. Chairman and committee members, for the opportunity to testify today. My name is Mark Weller. I am the President of Access Wisconsin, a company that is owned by 30 independent telephone companies that provide essential telecommunications services, both to their communities and to the State of Wisconsin's BadgerNet Network. I am here on behalf of those 30 telephone companies to oppose Senate Bill 375.

I am also here to vigorously oppose the unrelenting efforts of the University of Wisconsin to compete with the private sector in providing telecommunications. Government-subsidized competition is unfair to the businesses I represent and to the communities we serve. Government competition interferes with the private sector and with our markets. The Legislature recognizes that fact and has long had a law that says UW may not offer, provide or sell telecommunications to others. In the state budget, the Legislature clarified that law to explicitly say that the University cannot offer telecommunications to others through a third party, such as WiscNet. (Nearly all of WiscNet's employees are University employees.) Essentially, the Legislature said if UW continues to be part of WiscNet, WiscNet cannot serve others. If WiscNet separates from UW, it can serve whoever it wants. The Legislature also gave UW two years to comply with this provision.

But instead of taking this time given by the Legislature to prepare to implement this legislative mandate, UW has used the time to try to overturn it. UW may claim there is a crisis, but it is UW's failure to listen to the Legislature and to prepare for the law, and not the law itself, that is the problem.

The truth is, the 30 companies I represent are happy to compete with competitors in the private sector. They do so on a daily basis. But they take great offense at the idea that

entities using government employees or taxpayer funds can unfairly compete for their customers.

When we lose revenue from customers who turn to government-funded competition, that is revenue we will not have to invest in the infrastructure that our communities need. My companies are proud of the services and the infrastructure we provide in rural Wisconsin. But UW is not helping us serve rural Wisconsin, it is unfairly stealing the customers and revenue for investment. UW is hurting rural Wisconsin.

Our companies are also subjected to a constant barrage of false claims about our services by government employees who are marketing their own government-subsidized services. A recent example is a blog posted and circulated by UW-Extension which compared us to "a coalition of dirt road owners who use every legal trick in the book to make sure some communities are not touched by interstates."

In fact, my members have spent the past 20 years helping develop BadgerNet, a network that provides high-speed, highly reliable broadband transport services to schools, libraries, local governments and state agencies. The services are available anywhere in Wisconsin, no matter how rural. BadgerNet is a Department of Administration network using private sector services. BadgerNet serves more than 2,200 entities in every county and even on Washington and Madeleine Islands. The charges are the same no matter where a library or school district is located -- $100 per month if less than 5 Mbps or $250 for 5 to 100 Mbps. BadgerNet carries the state's most sensitive information, like health and tax and criminal records. It also provides distance education opportunities to hundreds of thousands of students every year. But the University, using our tax dollars, tells the world we are dirt road owners trying to ensure our communities are not touched by the telecommunications interstate, or that hospitals are still on dial-up, or that Wisconsin is below average in broadband access, or other false statements.

It is time to hold the University accountable. It is time to tell them to get out of the telecommunications business. It is time to say no to those who believe that government solutions are better than private sector solutions.

The University may tell you that it can only get access to Internet2 through WiscNet, and that research grants depend on it. If it is true that research grants depend on UW being part of WiscNet, then the solution seems clear. UW should tell its employees that staff WiscNet that serving UW is more important that serving others. It does not mean UW should continue providing telecommunications to others through WiscNet.

You may alsohear claims from school districts or libraries that currently use ISP, or Internet Service Provider services from WiscNet, that they are facing financial disaster if they switch to a private sector provider. In fact, in the typical school district, the difference is more likely to be $500 or $600 per month, but that is BEFORE applying the federal E-rate discount, which averages more than 50% in Wisconsin. Ending taxpayer-subsidized ISP

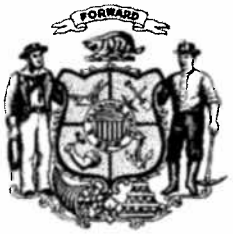
services is not a financial disaster for its users, but it will help companies like ours invest in local jobs and infrastructure.

In addition to ISP services, schools and libraries need broadband transport services. Those are the services already available through BadgerNet. Again, those services are available for $100 or $250 per month, no matter where a school or library is located.

In conclusion, it is time to stop the university from unfairly competing with the private sector. It is time to stop harming rural Wisconsin by stealing the revenues we need to investment in our communities. I urge you to reject the calls for delay and to tell the University to comply with the law.

Thank you again for the opportunity to testify. I am happy to answer any questions.


WISCONSIN STATE LEGISLATURE


FORWARD

UNIVERSITY OF WISCONSIN Colleges

UW Extension

Senator Schultz and committee members,

Thank you for this opportunity to give testimony in support of Senate Bill 375.

We are here because the 2011-13 budget requires the Legislative Audit Bureau to conduct a comprehensive audit of the University of Wisconsin System's use of broadband services and its relationship with WiscNet. The law requires the audit "examine issues of statutory compliance, competition, cost shifting, financing, collaboration, and access when considering the current structure and possible recommendations going forward." It is likely that such an extensive audit of complex issues will produce findings and recommendations that will significantly impact how the UW System meets its critical research and educational needs for high-speed and high-capacity broadband and data transport across key networks. The Legislative Audit Bureau audit is due Jan. 1, 2013, and the current legislation requires the relationship between UW System and WiscNet to sunset 6 months later, on July 1, 2013.

For the University, SB 375 is important because it provides one key factor: Time. A one-year extension needed to take action on the findings of the upcoming Audit.

- After the audit is completed (Jan. 1, 2013), all parties involved will need to digest, explore and respond to audit determinations and recommendations.

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Without this bill, there would only be 6 months to take action, and that is not enough time.

- UW–Madison in particular needs to operate without limits to its participation in critical consortia such as: Internet2, BOREAS, and other IT-related organizations and continue to serve as an engine for research, development, and economic growth in Wisconsin. UW's $1 billion research enterprise and the thousands of high-tech, high-paying jobs in UW's Research Park depend on this connectivity. This research concern goes beyond the Madison campus to impact Milwaukee, Green Bay, La Crosse, Stout, Eau Claire, Oshkosh, Fond du Lac, Richland Center, River Falls, and the other UW system institutions.
- **If the Legislative Audit Bureau** recommends significant structural changes to the current relationship between UW System and WiscNet, we will need appropriate time to implement the recommendations in the right way to avoid any threat to our ability to meet our research and educational needs. We will likely need to set up new organizations, relationships, and structures in order to secure the services we may need to replace. This will take time. This is a scenario we do not anticipate but one that we must be prepared to address.

As we have all learned, **the issue of broadband is complicated.** We too easily can get into battles about a host of definitions; even just saying the word broadband conjures up different pictures for different people, different meanings for different institutions. **Frankly, we all need to put an end to what might be called "a war of words"** and work together to find the right solution for Wisconsin.

Last summer we entered into productive discussions with some telecommunications organizations representing more than 90 telephone companies in the state at the direction of Senator Moulton and Representative Vos. Bill Esbeck, Executive Director of the Wisconsin State Telecommunications Association, and I are in constant communication. I know that he and his organization believe that we don't need any more time. However, the audit hasn't even begun. We know that full **due diligence** will be applied to this audit, and only ask for reasonable time to respond in the same thoughtful, methodical fashion. So I have proposed to Bill that we enter into discussions again **and work together** towards a win-win solution.

SB 375 will give all of us **the time that we need** to focus on what is best for Wisconsin – **public and private sectors working together for the best solutions**.

So the request is simple and straightforward: a one-year extension following the legislative audit to properly review, react and adjust to audit findings.

We believe that the one-year extension provided in SB 375 will ensure that we are dealing with this important issue in the most thorough way possible — with the goal that Wisconsin **communities remain strong and grow** through the innovation that can only come with this critical infrastructure in place.

I welcome any questions you have.

1/19/12 9:41 AM


FORWARD
E PLURIBUS UNUM

WISCONSIN
FARMERS UNION

Thank you for this opportunity to testify on SB 375, relating to the University of Wisconsin's participation in WiscNet.

I am testifying today to emphasize two points:
First, that Wisconsin lags behind other states when it comes to high-speed internet access in rural areas; and Second, that it doesn't have to be this way. The high-speed internet service provided by rural telecommunications cooperatives proves that it is possible to extend internet service to rural residents efficiently and effectively.

The attached maps paint a picture of the unfortunate state of high-speed internet access in our rural communities. In many counties in Wisconsin, less than 30 percent of farms have access to high-speed internet. That means that they are using dial-up – yes, dial up – not only for personal communications, but also to run businesses and manage websites. This situation is unacceptable.

It is important to realize, however, that some rural communities do benefit from access to high-speed internet, and those are the communities that are served by rural telecommunications cooperatives. One of our members who lives in Prairie Farm, in the Chibardin service area, has high-speed internet, while her friend 25 minutes away in Wheeler only has access to dial-up. Likewise I can think of two of our members in Sauk County – the family in La Valle has high-speed internet, while the family in Loganville does not. I talked to another young couple recently who attempted to start a direct-marketing operation from a farm they were renting near Reedsburg. Having an up-to-date website was an essential part of their direct marketing operation, but it was costing them $100 to have satellite internet because they had no high-speed option through their local provider. They have since moved to La Farge, where the local cooperative provides high-speed internet for less than $50 per month.

These communities are not significantly different in terms of population density. The only difference is that the coops are working in the interests of their members, whereas the private companies are working in the interests of Wall Street investors. It is possible to provide high-speed internet to rural households, and still operate in the black.

This relates to SB 375 because it is important to make the distinction how rural individuals access the internet in different communities. In areas served by telecommunications coops, people are getting onto the internet at home. But in those broad swaths of rural Wisconsin that are not served by coops, rural residents are heavily dependent upon local libraries and schools to gain access to the internet. Wisconsin Farmers Union urges this committee to craft a solution that supports the good work that rural telecommunications cooperatives are doing, while holding the for-profit providers accountable to do what the coops have proven is possible – bringing this vital communication link to rural residents.

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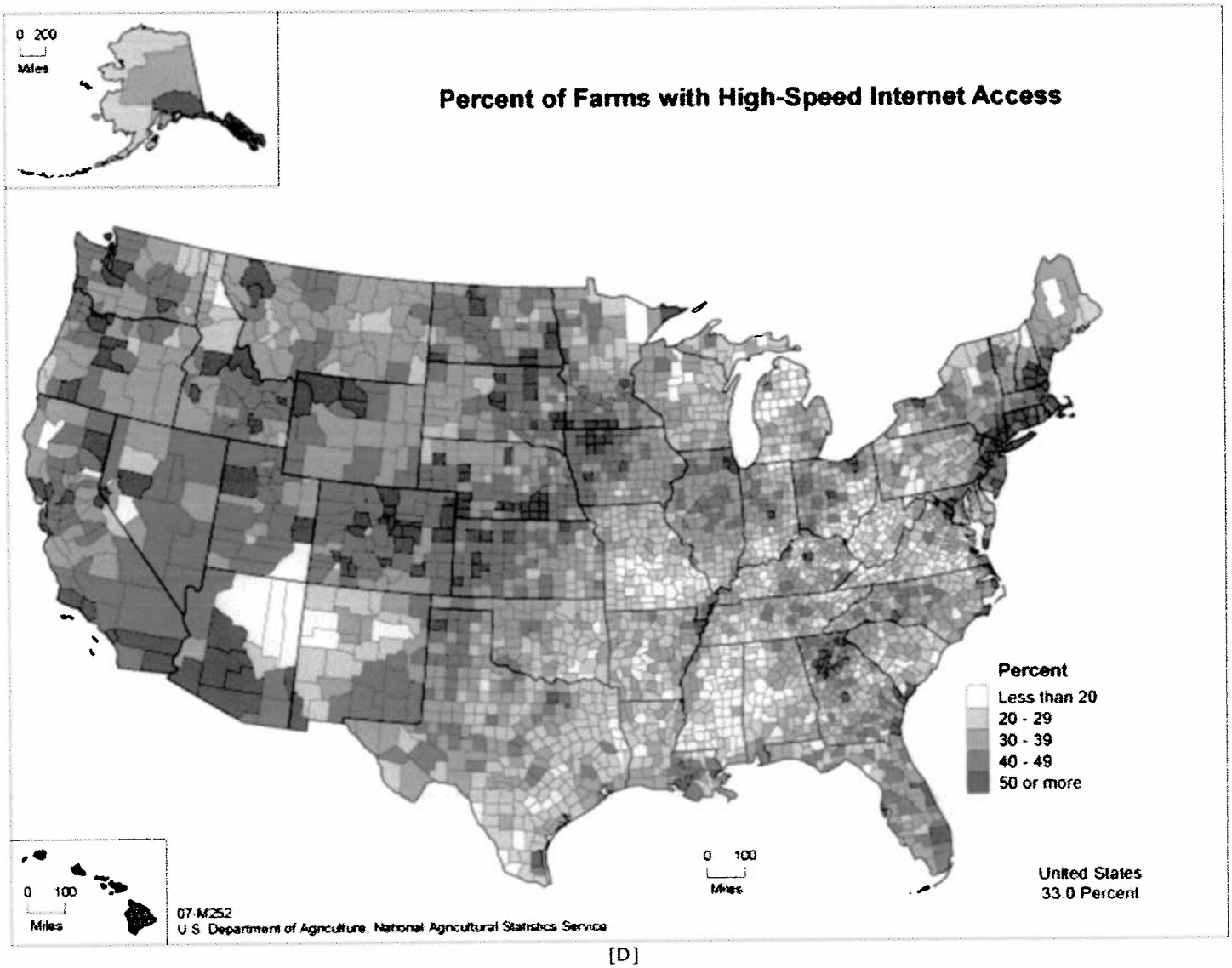
2007 Census Publications

Ag Atlas Maps, Farms

Percent of Farms with High-Speed Internet Access



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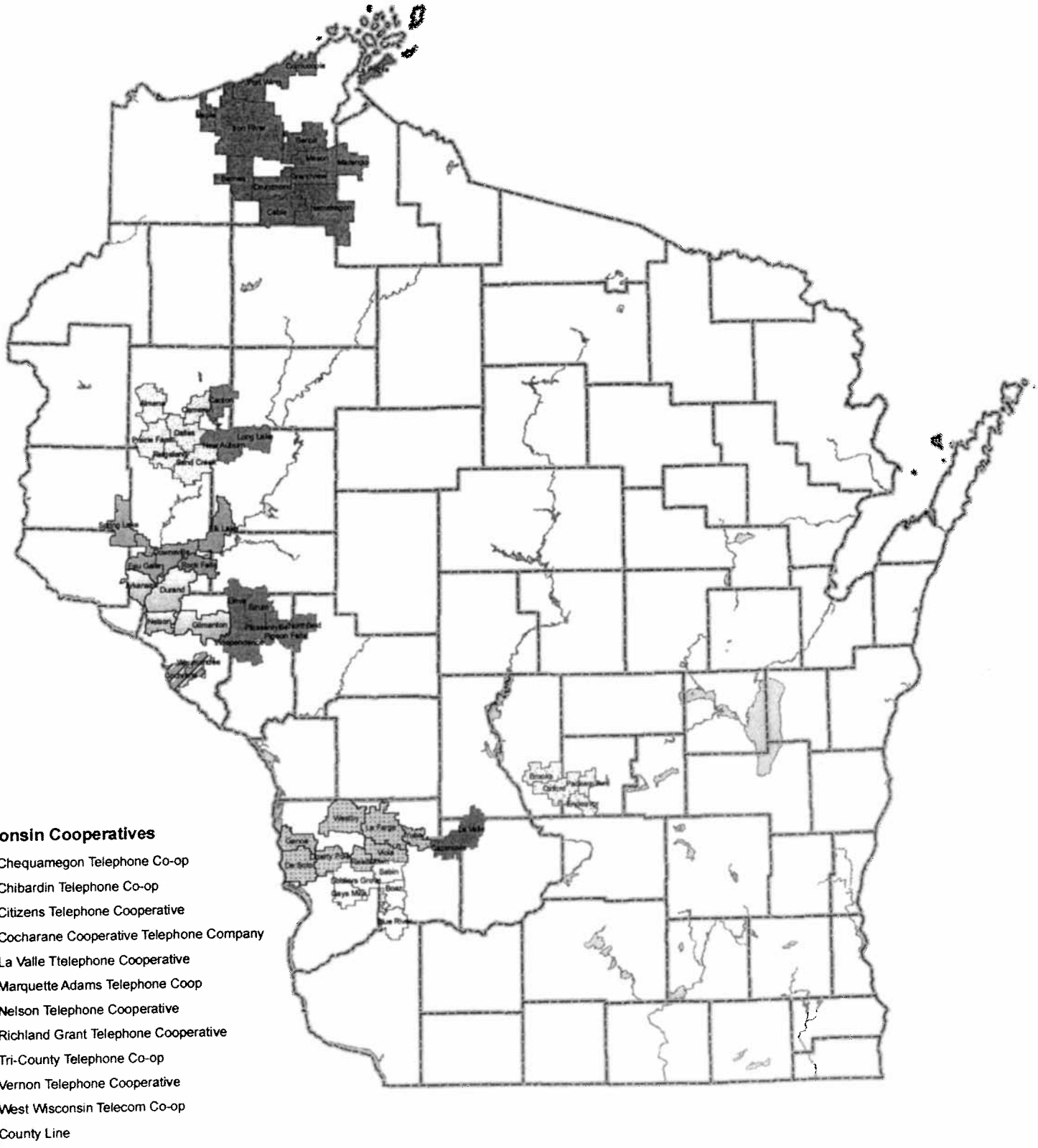
Wisconsin Cooperatives
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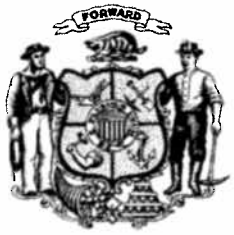
Chibardin Telephone Co-op
Citizens Telephone Cooperative
Cocharane Cooperative Telephone Company
La Valle Ttelephone Cooperative
Marquette Adams Telephone Coop
Nelson Telephone Cooperative
Richland Grant Telephone Cooperative
Tri-County Telephone Co-op
Vernon Telephone Cooperative
West Wisconsin Telecom Co-op
County Line

WISCONSIN STATE LEGISLATURE



School and Library Broadband and Internet Access in Wisconsin: A Background Paper

(Previous version August 30, 2011; updated January 17, 2012.)

Bob Bocher, Technology Consultant
(608-266-2127; robert.bocher@dpi.wi.gov)
Wisconsin Department of Public Instruction

January 2012 Update: The most substantive changes to the previous version of August 2011, relate to: (1) references on pages 2-4 to extending the current BadgerNet contract; and (2) reference on page 9 to the legislation supported by the telecommunication carriers against efforts by the UW, WiscNet and several other entities to expand access to affordable broadband to public sector institutions.

Recent events related to the education and library communities' access to broadband and Internet services have elicited numerous questions on why this has become such a contentious issue in our state. This paper attempts to answer some of these questions by providing background information on how our schools and libraries get their broadband and Internet access. This is a relatively in-depth review. Those interested in a more concise comparison of the claims by the telecommunication carriers and counter claims by the University of Wisconsin (UW), can view the summary provided by UW-Extension.[1] The two appendices at the end of this paper provide further information.

Broadband and Internet access play a critical role in educating our students and in providing for the information needs of library patrons. Therefore, the Department of Public Instruction (DPI) has a vested interest in ensuring that our schools and libraries have sufficient broadband and Internet access at an affordable cost. In this regard, it has been—and continues to be—DPI's position that: (1) schools and libraries need the latitude to select the broadband and Internet providers of their choice, and (2) they should have a variety of providers from both the private and public sectors to choose from. Recent attempts by the private sector to eliminate the public/not-for-profit sectors limit school and library choice.

At a high level, this is a classic debate on the role of the private and public sectors in the provision of an essential service. While DPI believes there is room for both sectors, we also think there is a need for an open, above board discussion on this issue. Recent attempts by the private sector to eliminate the public/not-for-profit sectors do not foster this needed dialogue.

The Historical and National Perspective

The recent dispute regarding what entities can or should provide broadband and Internet services in Wisconsin is not a new issue nor are efforts by the private sector to restrict the public sector's provision of these services. Over a decade ago the telecommunication carriers in the state lobbied to get legislation passed to restrict municipalities from providing telecommunications and broadband services. They finally succeeded in 2004.[2] The DPI opposed this legislation because it restricted broadband choice. In 2005 the telecommunication lobby was again successful in getting legislation passed that limited the UW to providing telecommunication services only for its campuses or to carry out its mission.[3] This issue is also not unique to Wisconsin. The *National Broadband Plan,* released by the Federal Communications Commission in March 2010, identified eighteen states that have some statutory restrictions on the public sector providing

[1] Access Wisconsin (http://accesswis.com), an organization which represents many of the state's smaller telecommunication carriers, has issued a number of statements articulating its position. The UW-Extension has countered some of these statements at http://broadband.uwex.edu/blog/2011/06/access-wisconsin-bccb-counterpoints.
[2] See 2003 Wisconsin Act 278 at http://legis.wisconsin.gov/2003/data/acts/03Act278.pdf.
[3] See 2005 Wisconsin Act 25, p. 167, section 36.11(49) at http://legis.wisconsin.gov/2005/data/acts/05Act25.pdf.

telecommunications or broadband services.[4] However, most of the restrictions in the various states prevent municipalities from providing these services to the private sector (e.g., businesses, residential households). This is an important distinction in understanding the current debate in Wisconsin where the telecommunication carriers are attempting to prohibit a *public sector entity* (i.e., UW) from assisting in the provision of broadband and Internet services to *other public sector entities* (e.g., schools, libraries).

BadgerNet and WiscNet

To understand the school and library broadband and Internet landscape in Wisconsin, it is necessary to have a basic understanding of BadgerNet, the state's broadband network, and WiscNet, the state's largest not-for-profit Internet service provider.

BadgerNet (and TEACH)

In 1993, then-Governor Tommy Thompson established a Blue Ribbon Telecommunications Task Force which was charged with developing a vision for a statewide telecommunications network for educational institutions and government agencies. This task force set the foundation for creation of the BadgerNet network in 1995.[5] As of January 2012, BadgerNet connected 2,033 customer sites throughout the state with a breakdown as follows:

- 992 (49%) are TEACH subsidized sites (TEACH is explained below)
- 981 (48%) are state government agency sites
- 60 (3%) are other sites (e.g., counties, UW campuses)

As these statistics show, 97% of BadgerNet sites are those that TEACH subsidizes or are state agency sites which are required to use the network.[6] Very few other public sector agencies use BadgerNet, likely because for most it is too expensive.

BadgerNet provides broadband circuits and distance education video networking. *It does not provide Internet access*[7] and it does not serve private businesses or residential households. The state does not "own" BadgerNet's circuits or its other networking infrastructure. Rather, at its inception, it was decided to outsource the network to a consortium of telecommunication carriers with AT&T (then Ameritech) as the prime vendor. Since 1995 DOA has undertaken several BadgerNet procurements and contract updates. The latest update was initiated in March 2011 when DOA opened negotiations with AT&T to extend the current contract to November 2016.[8] Both parties signed this extension in November 2011. A major change is significant cost reductions of about 50% in the higher bandwidths above 20Mbps. Unfortunately, the reductions are only about 20% in bandwidths at 20Mbps or less. The lack of significant reductions in lower bandwidths has had a negative impact on libraries as explained below.

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[4] See Chapter 8, page 153 of the NBP at http://www.broadband.gov/plan/. Also for a good review of this issue, see the March 2011 publication *Publically Owned Broadband Networks* at http://www.newrules.org/sites/newrules.org/files/cmty-bb-map.pdf.

[5] For more information on BadgerNet, see http://www.doa.state.wi.us/section_detail.asp?linkcatid=308&linkid=119&locid=155. The BadgerNet Advisory Council advises DOA on network issues. Bob Bocher serves on the council.

[6] The TEACH subsidy goes directly back to the carriers who provide the BadgerNet circuits. State agencies can seek permission from DOA to have another broadband provider.

[7] A number of Internet service providers (ISPs) offer Internet access on BadgerNet. When BadgerNet started, WiscNet was grandfathered in because it was already providing Internet access to most colleges and universities. The carriers that provide the BadgerNet circuits also provide Internet access and DOA has a contract for Internet access from several other ISPs too. See http://www.doa.state.wi.us/subcategory.asp?linksubcatid=1307&linkcatid=308&linkid=119&locid=155.

[8] The contract was to expire in November 2012. Negotiations started in March after DOA turned down a federal stimulus grant to bring fiber connectivity to 467 schools and libraries on BadgerNet that still had old copper circuits. The grant is referenced later in this paper.

From the K-12 school and library perspectives, no discussion of BadgerNet is complete without reference to the TEACH program.[9] TEACH (*T*echnology for *E*ducational *Ach*ievement) subsidizes access to BadgerNet for "educational agencies" as defined in state statutes (§16.99(2g)). These include school districts, private K-12 schools, public libraries, private academic institutions, and technical colleges. It is important to note that TEACH usually subsidizes only one circuit per education agency. Because most school districts have multiple schools, they are then responsible for funding the circuits needed to link their other schools to the BadgerNet circuit, which is often located at the high school. In most districts the BadgerNet circuit then connects to an Internet service provider for district-wide Internet access. (For typical school and library system wide area network topologies, see the WAN explanation in Appendix B.) However, very few of the other schools in a district use BadgerNet because without a TEACH subsidy, it is too costly.[10] (See section on Broadband Affordability below.)

TEACH pays the carriers approximately $24 million annually in subsidies for its 992 sites. TEACH funding comes from two sources: 1) $16.8 million annually is from the state Universal Service Fund, [11] and 2) $8-10 million annually is from the federal E-rate program.[12] Consumers pay for both funds as surcharges on their phone bills. DPI supports the TEACH subsidy because it provides substantial discounts to school districts and libraries. Here are two examples of this discount:[13]

- A library with a 3Mbps circuit pays $1,200 annually to TEACH but the annual BadgerNet contract cost is $9,952.80. TEACH pays $8,752.80 of this—a subsidy of 88%.
- A school with a 100Mbps circuit pays $3,000 annually to TEACH but the annual BadgerNet contract cost is $29,766. TEACH pays $26,766 of this—a subsidy of 90%.

While the TEACH funding sources have increased somewhat over the past several years, the increase has not kept up with school and library demand for higher broadband speeds. As a result, TEACH reached its budget limit in March 2011 and temporarily halted the funding of school and library requests for more bandwidth, pending the signing of the BadgerNet contract extension. The reduced bandwidth rates in the contract extension gave TEACH some budget latitude and in November it again started processing school and library requests for more bandwidth. In just two months (i.e., by mid-January 2012) TEACH processed over 550 requests for bandwidth

> The FCC has set a minimum broadband threshold at 4Mbps. Over 95% of our public libraries have less than 4Mbps and thus, based on the FCC definition, most libraries do not have broadband. Many households have more bandwidth than our libraries.

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[9] The legislature created TEACH in 1997 as an independent agency with multiple programs including telecommunications access, wiring loans and grants to school districts. Since 2004, it has been part of DOA and has narrowed its focus to a telecommunications access program which subsidizes video and broadband circuits on BadgerNet. For more information see http://www.teachwi.state.wi.us.

[10] One reason BadgerNet costs are higher is because they are postalized, which means they are the same statewide. This is advantageous in rural areas, but results in bandwidth costs in urban areas that are often higher than other competing providers. Cable companies in particular have been very aggressive in offering bandwidth at lower costs than BadgerNet.

[11] An additional $1.054 million in state Universal Service funds subsidizes access to BadgerNet for several UW campuses. (Background: Forty-eight states have some type of state Universal Service program. In nine states, including Wisconsin, this program helps subsidize school and library broadband costs. The state programs often complement the federal Universal Service program, which includes the E-rate. For more information see http://republicans.energycommerce.house.gov/Media/file/PDFs/2011usf/ResponsetoQuestion2.pdf.)

[12] TEACH applies for E-rate funding for every K-12 school and library on BadgerNet. The E-rate program provides discounts to schools and libraries for telecommunication services (e.g., voice, broadband), Internet access and local networking. It is funded at $2.3 billion annually from the federal Universal Service Fund. Wisconsin schools and libraries receive about $35 million annually from the E-rate and TEACH is the largest recipient. Not all TEACH E-rate funding goes to fund school or library bandwidth on BadgerNet; some of it is used to pay off the interest on wiring loans from a previous TEACH program. In addition, several years ago DOA took $5 million in E-rate and moved it into the general fund to help reduce the state's budget deficit.

[13] The TEACH subsidized rate chart is at http://teach.wisconsin.gov/category.asp?linkcatid=2603&linkid=619&locid=85.

increases.[14] Unfortunately, even with the lower circuit costs in the contract extension, TEACH does not have the funds to increase all of the libraries that still have a very minimal 1.5Mbps circuit to a slightly less minimal 3Mbps.[15] Because of chronic shortages in the TEACH budget, dating back over the past 6-8 years, 25% of Wisconsin's public libraries have an additional broadband circuit provided by a local cable company or a local telecommunications carrier. (It is ironic that the local carrier providing the BadgerNet circuit is very often the same carrier providing the additional broadband circuit.)

Because TEACH has limited funds it must prioritize school and library requests for more bandwidth. Priority is primarily determined by bandwidth usage logs showing if a school or library has reached their circuits' capacity. However, usage data obviously cannot measure Internet-based services *not* offered because of limited bandwidth. For example, some libraries block or restrict access to sites offering video content because streaming video requires more bandwidth than the library has. For schools, this form of bandwidth self-censorship is an impediment to student learning because, like libraries, there are sites and services students (and teachers) want to use but cannot. All parties involved find the need to restrict access to content and the bandwidth allocation process frustrating.

> Some of our requests for increased bandwidth were denied because the data didn't support an increase. This is correct, but it's because our libraries are not now offering some services, like having large computer classes or videoconferencing because of their limited bandwidth. It's a frustrating 'Catch-22' type of situation. —Gus Falkenberg, Technology Coordinator, Indianhead Library System.

WiscNet

The UW and several private colleges and universities founded WiscNet in 1990, five years before BadgerNet. It is a not-for-profit, member-based cooperative that provides Internet access and a host of other services.[16] At its beginning, WiscNet was a diverse association of public and private institutions which included the UW campuses and eight other private colleges and universities. Since its founding, WiscNet grew to over 450 members including the technical college campuses, school districts, libraries, and state and local governments. WiscNet does not serve private sector businesses or residential households. When BadgerNet was created in the mid-1990s, very few telecommunication carriers provided Internet access. WiscNet, which then served primarily academic institutions, expanded its services to include K-12 schools and libraries.[17] Currently, just over 70% of the state's school districts and 95% of its public libraries are WiscNet members. Over 80% of schools and libraries use BadgerNet for their broadband connection to WiscNet. Therefore, BadgerNet and WiscNet are complementary services, not competitors.

Most Internet providers charge their customers based on how much bandwidth they use: The more bandwidth used, the higher the cost. WiscNet charges schools based on student enrollment, and charges library systems based on their percentage of state aid. Thus schools and libraries can increase their bandwidth to any level and their WiscNet costs remain the same. This is important because some school districts and library systems using BadgerNet for their broadband will see an increase up to 100Mbps as a result of the BadgerNet contract extension. And from a more general perspective, the demand for ever greater bandwidth will likely continue. WiscNet was able to eliminate bandwidth as a cost factor because its cooperative model allows it to leverage the aggregate demand of its 450 members to negotiate very low costs for Internet access service and other services too (e.g., filtering). Its many partnerships with other state and national advanced research and education networks further enhance its purchasing power.

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[14] See the TEACH website for more information on the process to request a bandwidth increase.

[15] Before the latest round of bandwidth increases, 50% of libraries had just a 1.5Mbps circuit on BadgerNet. TEACH cannot fund all library requests for bandwidth increases because the lower speed circuits were only reduced by 20% in the new contract extension vs. a 50% reduction on higher bandwidths used by schools.

[16] While a not-for-profit, WiscNet has a close relationship with UW-Madison, which is its biggest member. For example, its employees are UW-Madison employees and WiscNet contracts for services and pays for technical and network support from the UW-Madison's IT division. For a history of WiscNet, see http://www.wiscnet.net/the-history-of-wiscnet. A list of its services is at http://www.wiscnet.net/services. WiscNet is governed by an eleven member board of directors, elected by its members. Bob Bocher serves on the WiscNet board.

[17] Until 1995, the National Science Foundation controlled the Internet backbone and access was restricted primary to research and academic institutions.

Broadband Affordability

The holy grail of broadband is to have *sufficient bandwidth at affordable costs*. What is sufficient can often be determined by reviewing bandwidth usage data. What is affordable is more subjective and it is often an issue of bandwidth costs competing with costs for other school and library essential services in an environment of diminished budgets. Because BadgerNet reaches all communities in the state the issue is not access to sufficient bandwidth, rather, *it is access to sufficient bandwidth at an affordable cost.* In seeking affordable broadband capacity outside of BadgerNet there are several alternatives and options[18] that schools and libraries use. For example:

- The Brown County Public Library uses the county's own fiber network to connect its main library in Green Bay and most of its branch locations in other areas of the county.
- Some of the schools and libraries in the Oshkosh, Neenah and Menasha areas get their broadband from FoxNet, a community area network (CAN) founded in the late 1990s.
- The Milwaukee school district and the Milwaukee public library get their broadband from Time Warner Cable.[19]
- Over 120 school districts and libraries currently get some or all of their broadband from Charter Communications. For example, Menominee Public Library recently dropped its 1.5Mbps BadgerNet circuit ($100/month with TEACH subsidy; $460.90 without) and now has a 16Mbps circuit from Charter for $88/month. (This is ten times the capacity at one-fifth the BadgerNet contract cost.)

From an academic perspective, the UW system has worked with other providers to obtain broadband for some of its campuses outside of BadgerNet. This is done primarily to save money and to have more control over network deployment and management. If all UW campuses used BadgerNet they would pay approximately $13 million more each year for bandwidth than they are currently paying.[20]

The need for affordable access to significant broadband capacity—and the inability of BadgerNet or the commercial sector to always meet this need—has resulted in an interest among community anchor institutions[21] to be more proactive in addressing their broadband needs. This, in turn, has sparked more interest in the development of community area networks (CANs).[22] CANs are not new and several have existed for over a decade, including FoxNet (referenced above) and the Chippewa Valley Internetworking Consortium (CINC).[23] Established in 1999, CINC has over 70 miles of fiber connecting more than 150 community anchor institutions in the Eau Claire area. (CINC does not serve for-profit businesses or residential households.) While CINC owns all of its own optical fiber facilities, it connects to all major telecommunication carriers in the Chippewa Valley area including AT&T, CenturyLink, and Charter. CINC members purchase a number of services from these carriers too. Furthermore, both initial and ongoing fiber construction projects are often shared between CINC and the carriers to the mutual benefit of both. As its FAQ states:

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[18] For more details on bandwidth options and the E-rate, see the DPI paper Bandwidth Options and the 2012 E-rate Application Cycle.

[19] In part because of BadgerNet's postalized rate structure (see note #10), its bandwidth costs in urban areas are not competitive. Also, in some areas of the state carriers that are part of BadgerNet will offer schools and libraries bandwidth at costs lower than the BadgerNet contract costs.

[20] See http://broadband.uwex.edu/blog/2011/06/access-wisconsin-bccb-counterpoints. The two largest campuses (Madison, Milwaukee) have need for very high capacity bandwidth and neither is on BadgerNet. At any given time UW-Madison has 4Gbps in Internet traffic coming into or leaving campus, with peak bandwidth usage of more than 20Gbps. Under WiscNet's cost model the campus does not pay any extra for this peak usage, or "bursting".

[21] Community anchor institutions include schools, higher education, libraries, municipal government, other public sector entities and not-for-profit organizations that have a community service mission.

[22] CANs can be viewed as modern day "cooperatives" where community anchor institutions with common interests and issues pool their resources to address those interests and issues. Related to this, the interest in CAN's has stimulated discussions among community anchors about the sharing of other services too.

[23] The CINC FAQ is at https://cinc.uwec.edu/CINC_FAQs.pdf.

CINC is a role model community area network that utilizes inter-governmental agreements and memorandums of understanding. As a community area network with minimal fees (for fiber locates, support and network maintenance), the broadband speed and connectivity greatly exceeds that of any private provider. Unlike other models, CINC members own and direct their future.

For the past several years the development of CANs has been of particular interest to UW-Extension (UWEX). As part of its public service mission,[24] UWEX has a long history of promoting local community and economic development. As access to sufficient and affordable broadband has become essential to such development, the UWEX has an obvious interest in helping ensure that our community anchor institutions have such access.[25] This interest took on greater importance with passage of the American Recovery and Reinvestment Act (ARRA, the federal stimulus act) in February 2009. This act included $4.7 billion in competitive grants to provide broadband to unserved areas of the country and to improve broadband in underserved areas. In Wisconsin several grants were submitted, and subsequently awarded, to address broadband access by community anchor institutions in underserved areas. Here are brief summaries of these grants:[26]

- *BadgerNet Fiber Grant:* Submitted by DOA, this $23 million grant was to bring fiber to 467 schools and libraries on BadgerNet that still had old, limiting copper circuits.[27] The grant would have provided school districts and library systems with 100Mbps for $250/month, and each library 20Mbps for $100/month (subsidized by TEACH). The grant was awarded in February 2010, but citing "irreconcilable federal regulatory hurdles" DOA—in agreement with the carriers—declined the grant in February 2011.[28]

> "The carriers fully supported a decision by the administration to return the $23 million federal grant. This decision cost Wisconsin a great opportunity to provide fiber broadband to all schools and libraries on BadgerNet." –Superintendent Tony Ever's June 6, 2011, letter to the school and library communities.

- *Metropolitan Unified Fiber Network (MUFN).* Submitted by the UW System, this $5 million grant will deploy more than 100 miles of fiber in the greater Madison area. It will provide high-capacity broadband to 100 anchor institutions at speeds up to 10Gbps. The grant was awarded in March 2010.
- *Building Community Capacity Through Broadband.* Submitted by UWEX, this $30 million grant will focus on building CANs in three communities (Platteville, Superior, Wausau) and enhancing the existing Eau Claire area (CINC) CAN. These CANs will connect 182 anchor institutions with high-speed broadband at very affordable costs. While ongoing costs will vary by CAN and are still under discussion, it is likely that many sites will be able to get 1Gbps for less than $10,000/annually. (The current BadgerNet cost for 1Gbps is $139,824/annually.) The UW is partnering with CCI Systems, a commercial telecommunications carrier.[29] WiscNet will use its engineering expertise to assist in building these CANs. The grant was awarded in August 2010.
- *Building Community Capacity Through Broadband – Sustainable Broadband Adoption (SBA).* Submitted by UWEX, this $2.4 million dollar grant will focus on education and marketing efforts to help

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[24] In part, its mission states, "UW-Extension supports the University of Wisconsin System mission by providing strong leadership for the university's statewide public service mission." Dating from over one-hundred years ago Wisconsin pioneered the university extension movement, which is a cornerstone of the Wisconsin Idea. See http://www.uwex.edu/about/uw-extension-mission.html.

[25] As the UW has become more involved in responding to community interest in CANs the telecommunication companies claim that it is violating the statutory restrictions passed in 2005. This is the legal rationale for the lawsuit filed by Access Wisconsin against the UW on July 22. This is addressed in more detail below.

[26] For more information on ARRA broadband funding and the grants briefly described here, see the DPI's website at http://dpi.wi.gov/pld/arrabbfunding.html.

[27] Copper circuits have a bandwidth limitation of about 10Mbps-20Mbps. Above this range fiber optic cable is the preferred medium. Fiber, with its almost unlimited capacity, builds for the future.

[28] See the DOA letter to the federal grant agency at http://dpi.wi.gov/pld/pdf/bcngrantdeclined.pdf. In addition to rejecting the grant, the letter extols the virtues of providing broadband over legacy copper circuits.

[29] When writing the grant the UW released a bid seeking partnerships with any telecommunication carrier, including Access Wisconsin members. Only CCI responded.

communities understand the benefits of broadband and to increase broadband subscribership levels with private providers. The grant was awarded in August 2010.

The three UW grants will provide broadband and Internet service to community anchor institutions, not private businesses or residential households. However, an important purpose of the grants—from both the UW and national perspectives—is to encourage public-private partnerships. To further this purpose, telecommunication carriers will have access to the fiber installed as part of the grants to provide services to the private sector. And even while the carrier's lawsuit (see below) was still pending, several rural telecommunication carriers expressed interest in access to the fiber. From a national perspective, sharing fiber and interconnecting to other carriers' networks is a grant requirement. It was this requirement that DOA cited as "irreconcilable federal regulatory hurdles" when it declined the BadgerNet fiber grant.[30] The UW and CII did not find the regulatory hurdles too difficult to overcome.

The federal Recovery Act also directed the Federal Communications Commission (FCC) to develop the nation's first *National Broadband Plan* (NBP, referenced on page 2). One of the plan's major goals is to ensure that community anchor institutions—including schools and libraries—have affordable access to 1Gbps broadband service. Furthermore, chapter 8 in the plan recognizes the expertise of state research and education networks, like WiscNet, and it recommends that they expand their services to connect other community anchors.[31] Thus the UW and WiscNet's interest in developing CANs dovetails with the recommendations in the *National Broadband Plan*. Until the availability of ARRA's broadband grants and completion of the plan, the federal government relied primarily on the telecommunication carriers to meet the nation's broadband needs. If the carriers successfully addressed this need, there would be no need to look for other options.

Recent Developments

The move to broadband threatens the telecommunication carriers' historic reliance on income from plain old (voice) telephone service (POTs) because people are canceling their landline phone service in favor of cell service and broadband voice services, like Skype.[32] Thus the carriers realize that broadband is a major source of their future business and they will take whatever actions necessary to protect that business. In this regard the carriers have long viewed the UW and WiscNet as inappropriately intruding in their market, and the CAN grants significantly increased the carrier's angst. Access Wisconsin expressed its concern in a June 7, 2011, press release: "We take great offense at the idea that taxpayer money should be used to subsidize a government agency such as UW-extension to duplicate and compete with our services. This is wasteful and inappropriate."[33] Access Wisconsin also states that in some small communities the school district is the carrier's largest customer—implying that the district should feel some type of obligation to remain a customer even if it means paying more for less service.

> "Our K-12 schools and libraries exist to educate our children and address the information needs of the public. They do not exist to guarantee the profitability of any private sector firm nor do they exist to guarantee the viability of any not-for-profit firm."
>
> –Bob Bocher, DPI.

[30] The WBAA did not want to be required by the grant to lease fiber to their competitors or to make the required interconnects. According to the federal grant administrator, nationwide the broadband grants have resulted in over ninety different interconnection agreements between telecommunication carriers and other providers.

[31] For example, the NBP recognizes that R&E networks have networking engineering expertise and procurement experience in the provision of broadband and Internet access. Internet2 has initiated a U.S. Unified Community Anchor Network (UCAN) program to help leverage the expertise of the R&E networks to assist other community anchors to get affordable broadband. See http://www.usucan.org.

[32] AT&T stated this succinctly in a December 2009 filing with the FCC: "With each passing day more communications services migrate to broadband, leaving plain-old telephone service (POTS) as relics of a by-gone era. With an outdated product, falling revenues, and rising costs, the POTS business is unsustainable for the long run." See http://fjallfoss.fcc.gov/ecfs/document/view?id=7020354032.

[33] See http://thewheelerreport.com/releases/June11/0607/0607accesswis.pdf. In relation to taxpayers subsidizing a service, Access Wisconsin does not mention that its members and other carriers receive $24 million annually in TEACH subsidies or that in 2010 Wisconsin carriers received $131 million in direct federal telecommunication subsidies. Both subsidies are ultimately paid by taxpayers.

In an attempt to protect their market by legislation the telecommunication carriers—as they did in 2004 and 2005—again successfully lobbied the legislature to take action. As a result, in early June 2011 the Joint Finance Committee (JFC) passed a motion—with no public hearing, notice, or input—to amend the biennial budget bill as follows:

1. Prohibit the UW from participating in the three broadband grants.
2. Prohibit the UW from providing telecommunication services, including Internet and broadband, to any other entity when such services are available from a carrier.
3. Prohibit the UW from having any relationship with any entity that provides telecommunication services, Internet or broadband unless that entity only provides these services to the UW.[34]
4. Require the Legislative Audit Bureau to conduct a program and financial audit of the UW's use of telecommunication services and its relationship with WiscNet.

> "This legislation will end over fifteen years of fostering a cooperative and collaborative association between higher education, PK-12 schools and libraries. We need to continue fostering such associations, not eliminating them."
> – Superintendent Tony Ever's June 6, 2011, letter to the school and library communities.

After considerable objections from the UW, the CAN grant participants and the broader education and library communities—and including the citizens who utilize these institutions—the final budget bill that passed allows the UW to proceed with its grants and it requires the Legislative Audit Bureau to complete its audit by January 1, 2013.[35] The bill also delays the imposition of prohibition #3 above until July 1, 2013. This date is only six months after completion of the audit. On January 9 legislation was introduced to extend this date to July 1, 2014. This one year extension will provide all parties, including WiscNet and its 450 members, with sufficient time to review fully and possibly implement any audit recommendations. DPI and the library and education communities support this legislation; the carriers oppose it.

During the June debate several legislators encouraged the UW and the carriers to try and reconcile their differences and the parties did meet once in early July. However on July 20, Access Wisconsin filed a lawsuit in Dane County court against the UW, WiscNet, CCI Systems and the state Department of Transportation.[36] This halted any further conversations. In their suit the carriers claimed the UW's participation in the broadband grants violates the statute (§36.11(49)) prohibiting the UW from providing telecommunication and broadband services outside of its own campuses or mission. The UW very much believes it is acting wholly within the law.[37] There were several preliminary hearings and on November 11 the court determined the UW had the statutory authority to participate in the broadband CAN grants and it dismissed the suit.[38] The carriers have not appealed and work on the grant projects is moving forward.

For Further Information

If you have any comments on this paper or for further information, please contact: Bob Bocher, 608-266-2127; robert.bocher@dpi.wi.gov.

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[34] While targeted at severing the WiscNet – UW relationship, taken at face value this language would likely have prohibited the UW from getting Internet access or even basic voice phone service.
[35] See pages 194 and 520 in the budget act (2011 Act 32) at http://legis.wisconsin.gov/2011/data/acts/11Act32.pdf.
[36] The suit sought to enjoin the Department of Transportation from providing to the grant recipients the rights-of-way permits along highways needed for the long-haul fiber routes.
[37] See the June 9, 2011 memo from the UW's legal counsel at http://wire.wiscnet.net/wp-content/uploads/2011/06/Letter-from-UW-System-Legal.pdf. Note that in the 2011-13 budget act (2011 Act 32) this statute changed from §36.11(49) to §36.585(2).
[38] See the UWEX statement on the lawsuit's dismissal at http://broadband.uwex.edu/blog/2012/01/statementonwisconsinbroadbandlawsuitdismissed.

Appendix A:

Glossary

Below are some brief definitions or descriptions of several key terms, programs and parties referenced in this paper.

- *Access Wisconsin:* An association representing mostly the state's smaller telecommunication carriers. Access Wisconsin members, along with larger carriers like AT&T, provide the broadband circuits and requisite network infrastructure for BadgerNet. Access Wisconsin members are part of the WBAA (see below).
- *BadgerNet:* Statewide broadband network provided under a Department of Administration (DOA) contract by a consortium of telecommunication carriers known as the WBAA (see below). AT&T is the prime vendor. 97% of BadgerNet sites are either heavily subsidized by TEACH or are state agency sites, which must use BadgerNet.
- *Broadband:* The speed or the capacity of the connection. Using the highway analogy, high speed broadband is analogous to a multi-lane freeway and low capacity is a narrow path. The FCC has set a broadband benchmark of 4Mbps. Internet providers use a customer's broadband connection to provide access to content (e.g., email, web, video), access to Internet-based (cloud-based) applications and services, etc.
- *Community Anchor Institutions (CAI):* Refers to schools, higher education institutions, libraries, municipal government, and other not-for-profit organizations that have a community service or outreach mission.
- *Community Area Network (CAN):* A consortium of community anchor institutions that pool their resources to provide high-speed broadband and Internet services at affordable costs. The collaboration and cooperation that CANs foster often results in the sharing of other services and resources too.
- *E-rate:* A program from the Federal Communications Commission that provides K-12 schools and public libraries with 20% - 90% discounts on their telecommunications and Internet costs. (See http://www.usac.org/sl.)
- *TEACH:* Part of DOA, TEACH spends $24 million annually in subsidizing access to BadgerNet for school districts, private K-12 schools, public libraries, private academic institutions and technical colleges. The subsidy comes from the state Universal Service program and the federal E-rate program.
- *WBAA – Wisconsin BadgerNet Access Alliance:* The consortium of over seventy telecommunication companies that provide, under contract to DOA, the circuits and underlying networking infrastructure for the BadgerNet network.
- *WiscNet:* A not-for-profit membership organization that provides Internet access and many other services to community anchor institutions—mostly higher education, K-12 schools and libraries.

Appendix B:

School and Library Internet Bandwidth on BadgerNet

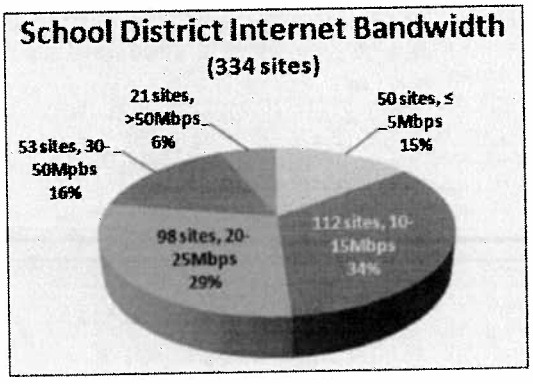
(August 2011)

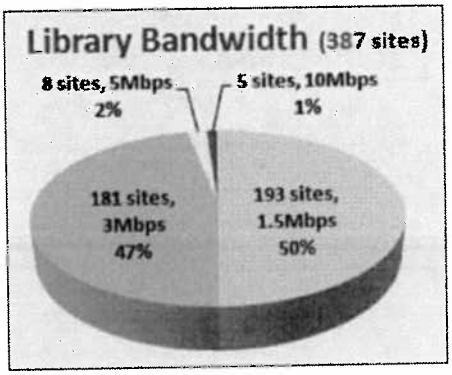
January 2012 Update: The statistics in the pie charts below are from August 2011 and do not reflect the 550 school and libraries that have received bandwidth increases from the TEACH program since early November. These statistics will be updated in February when TEACH completes its latest round of bandwidth increases.

Below is information on school and library Internet bandwidth speeds on BadgerNet. Also provided are explanations on how bandwidth is used on BadgerNet. The bandwidth statistics are from the TEACH program and are accurate as of July 2011. If you have any questions on this information, contact Bob Bocher, DPI, 608-266-2127, robert.bocher@dpi.wi.gov. If you have questions on the TEACH program, contact TEACH at 608-261-5054, teach@wisconsin.gov.

Note the following:

- These data represent only public library and K-12 public school district bandwidth for Internet access. Other TEACH customers (e.g., private K-12 schools, regional library systems, higher education) are not included.
- For a small number of districts the bandwidth shown may be only the bandwidth to a specific school, not the entire district. (See the WAN information below for the network topology most libraries and school districts have.)
- Approximately 25% of libraries have additional Internet access via a local cable or phone company. This is often used for public access workstations and wireless Internet access. The chart below does not include this added access.
- The 50% of libraries at just 1.5Mbps is particularly distressing. In a survey the American Library Association conducted in November 2010, 54.6% of libraries nationwide reported they had adequate bandwidth but this figure was just 34.7% for Wisconsin libraries.[39] (Most residential households have greater than 1.5Mbps.) The FCC has set a broadband benchmark of 4Mbps[40] and 97% of Wisconsin libraries fall below this benchmark. In addition, Goal 4 in the National Broadband Plan states that community anchor institutions should have affordable access to at least 1Gbps of broadband by 2020.





[39] The complete report is at http://www.ala.org/ala/research/initiatives/plftas/2010_2011/index.cfm. Wisconsin data are on p. 86 of the State Summaries report.

[40] In July 2010, the FCC stated, "We benchmark broadband as a transmission service that actually enables an end user to download content from the Internet at 4 Mbps." This benchmark is targeted at household Internet access. Community anchor institutions need much more bandwidth than the average household. See p.8 in the *Sixth Broadband Deployment Report* at http://transition.fcc.gov/Daily_Releases/Daily_Business/2010/db0720/FCC-10-129A1.pdf.

The bandwidth on BadgerNet is the same in both directions (bi-directional). For example, if a school has 20Mbps to the Internet this means there is 20Mbps coming into the school from the Internet (referred to as "downstream") and 20Mbps from the school out to the Internet ("upstream"). With basic web surfing there is much more downstream traffic vs. upstream. However for some applications or services, like voice over IP (VoIP) or interactive video, downstream and upstream traffic can be similar. This is important because some bandwidth options, like cable or DSL, often have limited upstream bandwidth.

In addition to basic Internet access, bandwidth on BadgerNet can be used for several different purposes as described below. Many schools and libraries use a combination of these depending on what services or applications they need.

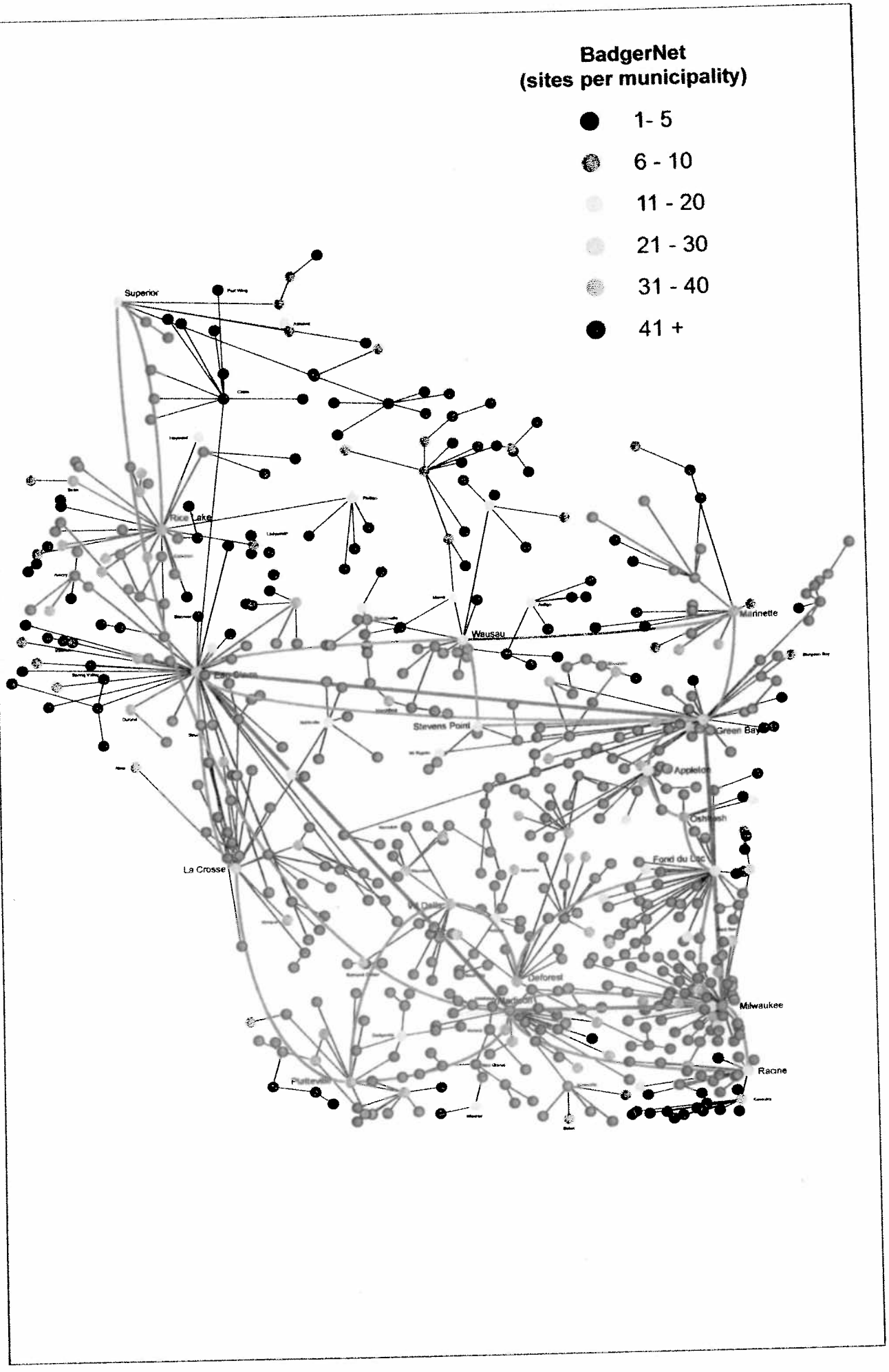
- *HPLL:* High priority – low latency. This is used when a particular service or application requires priority (e.g., high Quality of Service–QoS) over other types of services or applications. For example, in schools HPLL is often used for voice over IP (VoIP) and for classroom video. Libraries often use HPLL to ensure that transactions from their integrated library system (online catalog and automated circulation system) are given preference over generic Internet access. When the bandwidth reserved for an HPLL service is not needed, it can be used for other purposes. HPLL is only used within the BadgerNet network. That is, no packets with an HPLL marker are transmitted to the public Internet.

- *ITP:* Internet transport. This is used for regular (generic) access to the Internet. No special treatment is accorded this bandwidth. It uses the Internet's standard "best effort" protocols to deliver information in a timely manner.

- *Video:* This is the traditional interactive, full motion classroom video that school districts and other education institutions have been using for many years. Interactive video of this type requires high QoS and to help ensure this the service uses a dedicated 6Mbps bandwidth per video site. When the 6Mbps is not being used for video, it is not available for other purposes. Most of these sites are part of a regional video network affiliated with WADEN (Wisconsin Association of Distance Education Networks, http://www.uwex.edu/disted/waden).

- *Video Bridging:* This is often used for mobile classroom video where the equipment is on a rolling cart. When the bandwidth reserved for bridging is not needed, it can then be used for other purposes. (To help ensure high QoS, video bridging uses HPLL.)

- *WAN:* Wide area network. This is most often used to connect individual schools to a district central site. Libraries use this to connect individual libraries to a regional library system headquarters. The district or library system then aggregates all the school/library WAN sites and connects to the Internet via the district's or library system's ITP bandwidth. This is often referred to as a "hub-and-spoke" arrangement where individual schools/libraries are the spokes and they all connect to a central "hub" which is a district central site (e.g., high school, district office) or the regional library system headquarters. This central, aggregated BadgerNet circuit must have the capacity to accommodate the all of the individual BadgerNet WAN circuits coming from each school or library.


BadgerNet
(sites per municipality)
1- 5
6 - 10
11 - 20
21 - 30
31 - 40
41 +
Superior
Rice Lake
Wausau
Marinette
Stevens Point
Green Bay
Appleton
Oshkosh
Fond du Lac
La Crosse
Mt Dellon
Deforest
Milwaukee
Racine
Platteville


FORWARD

Keep It Local - Use Wisconsin Firms

create a fertile business environment

FACT SHEET

ISSUE

The use of Wisconsin engineering companies provides employment for state residents, contributes property and business taxes to help support state and local programs, and encourages the development of technologies that benefit economic growth.

Government cannot create businesses, but it can create fertile conditions for growth by building a strong business environment. Government can help state businesses grow by utilizing Wisconsin consulting engineers efficiently.

KEY POINTS

- Wisconsin's public infrastructure needs are far greater than state government's internal capacity to deliver. This is where Wisconsin engineering firms are vital assets. Effective use of public agency staff and private sector companies for the most efficient use of limited resources is the answer to the significant funding challenges facing government today.

- High quality teams of engineers, planners, architects, scientists, and other related professional technical staff are available in the private sector to complement state government agencies by providing expertise, state-of-the-art technology, and experience necessary to complete high quality projects in an efficient, cost effective manner.

ACTION REQUESTED

- Support a state budget that encourages the use of Wisconsin engineering companies to complement state agency work.

- Support the use of engineering companies to assist in the management of special programs and initiatives.

ACEC
American Council of Engineering Companies of Wisconsin

the business voice of the Wisconsin consulting engineering industry

The American Council of Engineering Companies of Wisconsin represents 71 premier engineering firms, with more than 140 offices across Wisconsin. Founded in 1958, our member firms employ nearly 3,500 engineers, architects, planners, geologists, soil scientists, hydrologists, surveyors, and other professionals. For more information, visit www.acecwi.org or contact us at 608-257-9223.


FORWARD

USAC
Universal Service Administrative Company
Helping Keep Americans Connected

E-RATE DISCOUNTS FOR SCHOOLS AND LIBRARIES

The E-Rate Program - or, more precisely, the Schools and Libraries Universal Service Support Mechanism - provides discounts to assist most schools and libraries in the United States to obtain affordable telecommunications and Internet access. Four service categories are funded: Telecommunications Services, Internet Access, Internal Connections Other Than Basic Maintenance, and Basic Maintenance of Internal Connections. Discounts range from 20% to 90% of the costs of eligible services, depending on the level of poverty and the urban/rural status of the population served. Eligible schools, school districts and libraries may apply individually or as part of a consortium.

The E-Rate Program supports **connectivity** - the conduit or pipeline for communications using telecommunications services and/or the Internet. The school or library is responsible for providing additional resources such as the end-user equipment (computers, telephones, and the like), software, professional development, and the other elements that are necessary to realize the objectives of that connectivity.

The E-Rate Program is one of four support mechanisms funded through a Universal Service fee charged to companies that provide interstate and/or international telecommunications services. The Universal Service Administrative Company (USAC) administers the Universal Service Fund at the direction of the Federal Communications Commission (FCC); USAC's Schools and Libraries Division (SLD) administers the E-Rate Program.

This document summarizes the process schools and libraries follow to apply for and receive E-Rate Program discounts. Each of the steps in this process - preparing a technology plan, opening the competitive process (Form 470), seeking discounts on eligible services (Form 471), confirming the receipt of services (Form 486), and invoicing for services (Forms 472 and 474) - is covered in more detail below. However, this document is not intended to be a substitute for form instructions or the guidance materials posted on the SLD section of the USAC website.

The Technology Plan Shows How Technology Will Improve Education or Library Services

The first step for many schools, school districts, and libraries that intend to apply for E-Rate Program discounts is to prepare a technology plan. This plan sets out how technology will be used to achieve specific curriculum reforms or library service improvements. It guides planning and investment - both for E-Rate funds and for the other resources needed to take advantage of technology.

A technology plan designed to improve education or library services must contain the following components:

- Clear goals and a realistic strategy for using telecommunications and information technology
- A professional development strategy to ensure that staff know how to use these new technologies
- An assessment of the telecommunication services, hardware, software, and other services needed
- An evaluation process that enables the school or library to monitor progress toward the specified goals.

Before discounted services begin, a SLD-certified technology plan approver must approve their technology plans. Applicants can locate SLD-certified approvers by

using a search tool available on the website. However, applicants who seek discounts only for Telecommunications Services and/or Internet Access need not prepare technology plans.

The FCC Form 470 Opens a Competitive Process for the Services Desired

After the technology plan has been developed and the applicant has identified the products and services needed to implement the plan, the applicant submits to the SLD a Form 470, Description of Services Requested and Certification Form, either online or on paper. The SLD posts completed forms on the website to notify service providers that the applicant is seeking the products and services identified.

Applicants must wait at least 28 days after the Form 470 is posted to the website and, if applicable, at least 28 days after a Request for Proposal (RFP) is publicly available and consider all bids received before selecting the service provider to provide the services desired. In addition, applicants must comply with all applicable state and local procurement rules and regulations and competitive bidding requirements. A complete description of the requirements associated with the Form 470 can be found in the Form 470 Instructions.

- An applicant cannot seek discounts for services in a category of service on the Form 471 if those services in those categories were not indicated on a Form 470.
- The Form 470 MUST be completed by the entity that will negotiate with potential service providers.
- The Form 470 cannot be completed by a service provider who will participate in the competitive process as a bidder. If a service provider is involved in preparing the Form 470 and that service provider appears on the associated Form 471, this will taint the competitive process and lead to denial of funding requests.
- The Form 470 applicant is responsible for ensuring an open, fair competitive process and selecting the most cost-effective provider of the desired services.
- The applicant should carefully consider whether to receive discounts on bills or reimbursements for services paid in full.
- The applicant must save all competing bids for services to be able to demonstrate that the bid chosen is the most cost-effective, with price being the primary consideration. As with all documents that may be requested as part of an audit or other inquiry, such bids should be saved for at least five years after the last date of service delivered.

Note that once an applicant has signed a multi-year contract in a prior funding year pursuant to a posted Form 470, it need not submit a new Form 470 to be eligible to apply for discounts on the services provided under that multi-year contract for future funding years.

After the SLD has successfully posted a Form 470 to the website, the SLD sends the applicant a **Form 470 Receipt Notification Letter** that provides important information, including the "Allowable Vendor Selection/Contract Date," the earliest date the applicant can select a service provider, execute a contract, and submit a complete Form 471.

The FCC Form 471 Seeks Funding for Eligible Services Competitively Bid

Having selected the service provider, the applicant is ready to complete the Form 471, Services Ordered and Certification Form - the actual request for funding. Because the amount of funding available each year is capped at $2.25 billion (indexed for inflation) and demand in most years has significantly exceeded funds available, FCC rules prescribe a filing window during which all Forms 471 that are filed are treated as if simultaneously received. (Applications that are not filed

within that timeframe likely will not receive funding.) Once the filing window opens, the applicant can submit the Form 471 either online or on paper.

The Form 471 is used to calculate the discount percentage to which the applicant is entitled. In general, the E-Rate Program discount is based on the percent of the local school district population eligible for the National School Lunch Program. The Form 471 also lists the individual funding requests, which must be separated by service category and service provider.

- ALL window filing requirements - as stated in the Form 471 Instructions - MUST be met in order for an application to be considered with all others received in that timeframe.
- Schools and libraries are required to pay the non-discount portion of the services for which they receive discounts.
- Funding requests should be limited to the cost of eligible services to be delivered to eligible entities for eligible purposes. If 30% or more of the services in a request are ineligible, the entire request will be denied.
- There are a number of important certifications on the Form 471. Applicants should be sure they can truthfully and correctly make these certifications. The SLD checks the accuracy of the certifications made by applicants and denies funding if one or more of the certifications are found to be untrue. False statements on the Form 471 (and other FCC forms) can result in civil and/or criminal liability.
- The Form 471 cannot be processed without the required attachment(s), which must contain detailed information about the products and services ordered so that the SLD can verify eligibility.
- The Form 471 Receipt Acknowledgment Letter provides important information to the applicant and the service provider, including a summary of the data from the Form 471.

The Funding Commitment Decision Letter Contains SLD Decisions on Funding Requests

Once the Form 471 has been reviewed, the SLD issues one or more Funding Commitment Decision Letters (FCDLs) to both the applicant and the service provider, setting out its decisions for each funding request. If an applicant believes any of its funding requests have been incorrectly reduced or denied, the applicant can appeal the decision(s), either to the SLD or to the FCC. Appeals must be RECEIVED OR POSTMARKED no later than 60 days after the date of the SLD decision letter.

The FCC Form 486 Tells SLD that Delivery of Services Has Begun

In order to help the SLD ensure that it pays service providers only for services that have actually been delivered, the applicant submits the Form 486, Receipt of Service Confirmation Form, listing each separate funded request for which the delivery of services has begun. However, applicants who have confirmed that delivery of services will begin in July of the Funding Year may be able to file the Form 486 early (on or before July 31 of the Funding Year). The Form 486 also tells the SLD that the applicant's technology plan - if required - has been approved, and informs the SLD of the applicant's status of compliance with the Children's Internet Protection Act (CIPA). Funding may be reduced if the Form 486 is received or postmarked after the deadline listed later in this document.

The Invoice (FCC Form 472 or FCC Form 474) Tells SLD to Pay the Service Provider

The SLD must receive an invoice in order to pay the discount amount on services for which funds have been committed. If applicants receive discounts on their bills from service providers, the service providers must submit the Form 474, Service Provider Invoice Form, to receive payment for the discounts they have provided. If applicants wish to request reimbursement for services for which they have already paid in full, they must submit the Form 472, Billed Entity Applicant Reimbursement Form. The SLD bases the billing mode for each funding request - discounting or

reimbursement - on the first type of invoice it processes for payment. Note that payment will not be made on a Form 472 or a Form 474 received or postmarked after the deadline listed later in this document. Receipt of discounts or reimbursements completes the E-Rate process.

Retention of Records and Audits

Applicants MUST maintain their records for at least five years after the last date of service delivered to be able to comply with audits and other inquiries or investigations. USAC and the FCC visit a sample of applicants to ensure services have been delivered in compliance with FCC rules.

How to Get More Information

All of the concepts covered in this overview are discussed in more detail on the website at www.usac.org/sl. Specific information on completing the individual forms can be obtained by downloading the forms and instructions from the website. In addition, the Reference Area of the website contains information on deadlines, sample letters, frequently asked questions, and other useful documents. The SLD Client Service Bureau is also available to answer questions by telephone, fax or e-mail during normal business hours:

Telephone: 1-888-203-8100
Fax: 1-888-276-8736
E-mail: Use the "Submit a Question" link on the SLD website

E-Rate Program Timetable and List of Deadlines

Form or Event	Deadline or Dates
Funding Year	July 1 through the following June 30 (non-recurring services through the following September 30)
Form 470	Posted at least 28 days before the filing of the Form 471, keeping in mind (1) the timeframe for compliance with all competitive bidding requirements and (2) the Form 471 application filing window opening and closing dates
Form 471 window	Early November to early February preceding the start of the Funding Year (exact dates for each funding year will be posted on the website)
Form 471	Received or postmarked no later than 11:59 PM EST on the day of the close of the Form 471 application filing window (exact date will be posted on the website)
Form 486	Received or postmarked no later than 120 days after the date of the Funding Commitment Decision Letter or 120 days after the Service Start Date, whichever is later
Form 472 / Form 474	Received or postmarked no later than 120 days after the date of the Form 486 Notification Letter or 120 days after the last date to receive service, whichever is later
Appeals	Received no later than 60 days after the date of the SLD decision letter