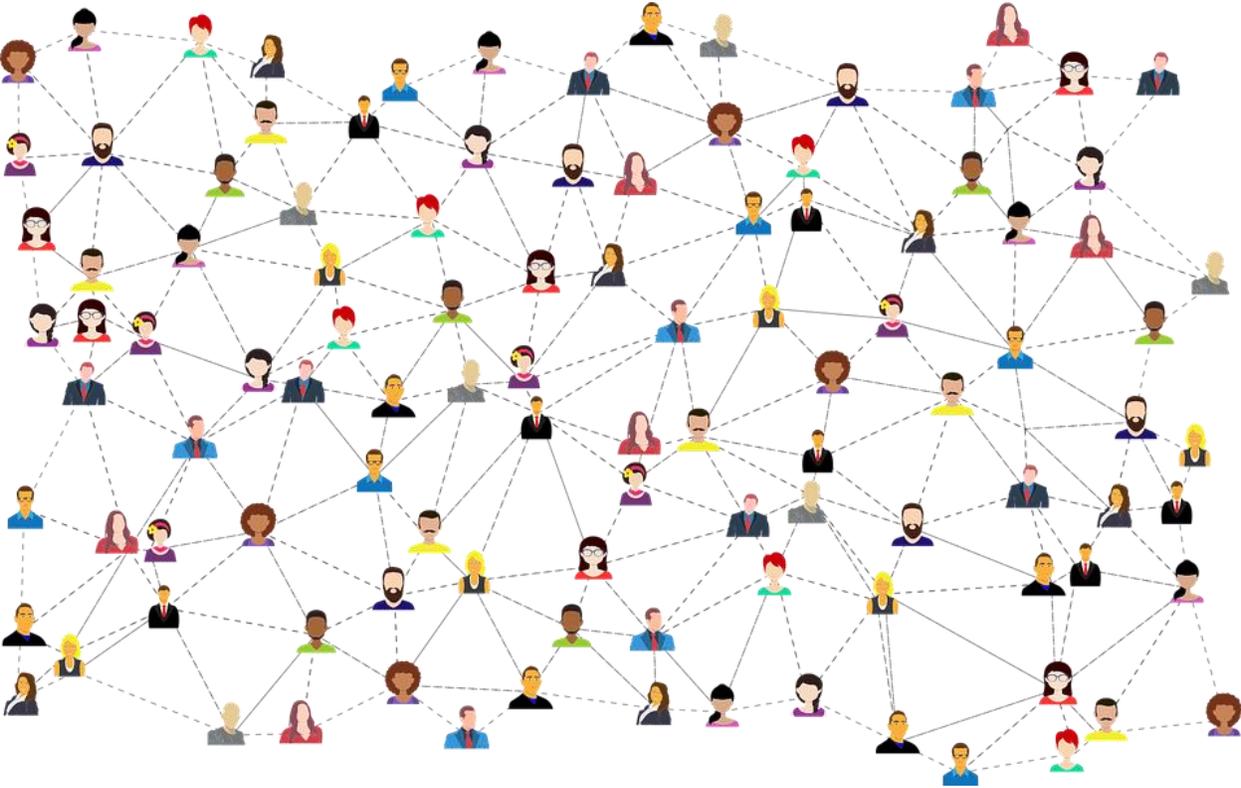


Dane County Broadband Task Force 2021 – 2022 Report



July 21, 2022



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Executive Summary

Broadband connection, expansion, and reliability is on the minds of people every day. The COVID-19 pandemic reinforced the importance of broadband access, as workers, students, and people of all ages rely on a good internet connection in order to work remotely, do banking, attend school, and attend healthcare appointments.

The Dane County Broadband Task Force was established in 2021 to study access and affordability of broadband in the rural areas of the County, and to make recommendations to the County Board about how to increase broadband access to those households that lack or have inadequate broadband access. The bigger issue for consideration by the Task Force was how to establish a coherent, powerful, and integrated broadband infrastructure that is adequate to meet the needs of workers, students, and households in the 21st century.

After listening to presentations about issues related to broadband expansion, extensive deliberation, and public input, the Dane County Broadband Task Force developed 31 recommendations to encourage and implement broadband expansion in Dane County.

The recommendations from the Task Force are comprehensive and expansive. They are meant to assure that the resources, expertise, and policy environment allow for expansion of broadband services to all households.

Internet service provider collaboration and infrastructure criteria

1. Hire a broadband coordinator (can be a consultant or County staff).
2. Work with the Internet Service Providers (ISPs) to complete the last mile and fill in the gaps.
3. Fund work of laying middle mile infrastructure (dark fiber) in select rural areas during road construction.
4. Recruit ISPs to lay fiber to premises in areas of greatest need, and provide funding match where possible.
5. Provide incentives to ISPs to create competition for them to better serve hard to reach areas.
6. Develop criteria for larger ISPs to extend coverage beyond subdivisions to households in proximity.
7. Study the potential for cooperative structures to develop middle mile infrastructure.
8. Establish a procedure and set criteria for evaluating and responding to external/private sector proposed partnerships for broadband expansion.

9. Research opportunities for the County to own fiber through intermediary entities (such as MUFN) with the potential of leasing back to ISPs.
10. Research whether it is possible to require that ISPs get a permit for infrastructure development, thus allowing for the County to collect information on new infrastructure.

Outreach, education, and alliance building

1. Conduct outreach efforts to municipalities about broadband.
2. Engage with Public Health officials and entities to expand telehealth using social determinants of health framework.
3. Advise towns and villages about broadband choices and costs. Provide recommendations for fiber infrastructure.
4. Identify contacts in surrounding Counties that are working on broadband expansion and establish relationships with them in order to have contiguous service.
5. Develop a public website that informs constituents about what ISPs operate in their area and what type of service they provide.

Interim methods to provide service

1. Lend devices (e.g., tablets) to those who cannot get access to ISP services.
2. Share information about the new Federal Affordable Connectivity Program in Towns, Villages, and Municipalities.
3. Build a catalog of the names of people to contact in Dane County about public wi-fi access, connection credentials, and hours for indoor use.
4. Test wi-fi and hotspot performance in Dane County at village centers and town halls to learn about reliability, speed, and distance limits. Publicize information about these locations to the public.
5. Provide instructions to the public for how to use smartphones as hotspots.

Funding and research

1. Identify funding opportunities from State & Federal Govt.
2. Assist communities to apply for multiple sources of grant funding for each project (combine resources from Dane County, PSC, Federal grants).
3. Work with Dane County to contribute funding toward PSC & Federal grants.

Advocacy

1. Increase funding for the PSC Broadband Expansion Grant Program.

2. Allocate State and County funding for staff positions dedicated to assisting municipalities with applying for grants.
3. Conduct outreach and training programs geared toward helping municipalities get ready to apply for grants.
4. Create accountability measures for internet service providers to:
 - a) submit speed data to the PSC on a regular basis,
 - b) provide granular service data to the PSC on scale smaller than census block,
 - c) provide advertised speeds to customers.
5. Provide authority to the PSC to require, in grant applications, that ISPs provide internet coverage to unserved 'neighbors' when applying to serve a concentrated area (e.g., new developments). This would extend routes in less densely populated areas.
6. Consider classifying the internet as a public utility to improve the quality of service and ensure access for all. This would enable ISPs to be regulated.
7. Change state law that restricts Counties and municipalities from serving as ISPs.
8. Implement 'dig once' ordinance throughout the state.

A more detailed consideration of this list of recommendations can be found on page 30-39.

Letter from Chair and Vice Chair

July 21, 2022

Dear Colleagues,

As the last two years have shown, having internet service in every home and business is essential to participating in daily life, yet, there are still too many that do not have access to service, or have extremely poor service.

The Dane County Broadband Task Force, with representatives from several backgrounds, has been meeting for the last year to learn about the barriers, success stories, and various options to improve broadband access in Dane County. Broadband expansion is a top priority at the federal, state, and local level in most areas of the country. The Task Force heard from experts in areas related to broadband expansion, as well as from the residents of Dane County.

This report with recommendations serves as a culmination of the year of work that was put in by the Task Force, staff, and members of the public. The discussion and action needs to continue, and the recommendations identified by the Task Force are a great place to begin. The work cannot stop until every residence and business in Dane County can utilize the internet in the way necessary to participate in the 21st century.

Sincerely,

Supervisor Melissa Ratcliff, Chair
Dane County Broadband Task Force

Supervisor Kate McGinnity, Vice-Chair
Dane County Broadband Task Force

Background

Importance of broadband in the 21st century

There has been awareness of the lack of broadband access in many rural communities long before the COVID-19 pandemic. When COVID-19 sent a large segment of the population home for school, doctors' appointments, work, banking, social interaction, and entertainment, the lack of reliable internet access became an even bigger barrier for people in rural areas - and in pockets of urban areas - to do every day functions. The pandemic underscored that something needs to change in order to improve access, affordability, and reliability of internet service.

According to the American Community Survey conducted by the U.S. Census Bureau, 85 percent of households nationwide have broadband with internet subscriptions. As such, a full 15 percent of U.S. households lack internet access.¹ Additionally, a great number of households that subscribe to an internet service are experiencing poor service, with low download and upload speeds, intermittent cut-offs from services, and transmission lag time.

There have been countless stories of families driving to library parking lots so their kids could participate in remote schooling. Even in Dane County, the seat of State Government and the location of the University of Wisconsin-Madison, rural communities proximate to Madison do not have reliable internet access.

The impact of the COVID-19 pandemic on small businesses will undoubtedly last for years, and the need for greater access to reliable broadband will continue to increase. For rural communities, broadband expansion can fuel economic development, provide opportunities for entrepreneurs and young people within their home community, and enhance the ability of businesses to rebound and flourish. Communities that lack viable broadband services could continue to see an outmigration of population and loss of community-based businesses.²

Purpose of Dane County Broadband Task Force

In 2020, the Dane County Board of Supervisors called for the creation of a Broadband Task Force (resolution 2020 RES-415) to collect data, research and explore various funding mechanisms, partner with stakeholders to identify where broadband access is

¹ <https://www.census.gov/content/dam/Census/library/publications/2021/acs/acs-49.pdf>

² Conroy, Tessa, Steve Deller, Matt Kures, Sarah Low, Jeffrey Glazer, Gail Huyke, & Christopher Stark. Jan. 2021. "Broadband and the Wisconsin Economy." University of Wisconsin-Madison Extension, The Wisconsin Economy Study Series No. 7. <https://economicdevelopment.extension.wisc.edu/files/2021/06/2021-01-07-Broadband-Report.pdf>

and is not, explore alternative solutions, and make recommendations to the County Board on the role of Dane County in facilitating the expansion of broadband services to residents. Participation in the Dane County Broadband Task Force (DCBTF) was outlined in the resolution, and members were assigned by the then Chair of the County Board. The DCBTF began meeting in July, 2021.

Goals of the Task Force

The challenge of delivering high speed internet across the entire County is immense, due to the high cost of establishing services, particularly in remote areas, and recognizing that current laws limit the authority of local governments. While the County, in partnership with local government and internet service providers, intends to develop broadband infrastructure to serve all households, businesses, and institutions, the inaugural Broadband Task Force was created with these initial goals:

- Develop a greater community understanding of Dane County's challenges related to high-speed, reliable and affordable internet access for the County as a whole;
- Prepare local partners in Dane County to have the background and knowledge to apply for various grants and funding to expand access to unserved and underserved areas of the county;
- Increase awareness of the issues those without reliable internet access face in day-to-day life including remote learning, remote work, and virtual health appointments.

Activities/Roles of the Task Force

As stated in the resolution, the Task Force was assigned the following activities:

1. Understanding the complexities of broadband access as it relates to improving access to those unserved and underserved in Dane County;
2. Collecting data points on under-served and vulnerable populations to determine if there is a greater percentage impacted by lack of access to reliable and affordable broadband;
3. Understanding the various funding mechanisms used for improving broadband access, to include state and federal grants, with the intention of identifying strategies, partners, and potential funding sources that will support the expansion of broadband services;

4. Partnering with various stakeholders to identify where access to broadband is and is not available;
5. Exploring alternative solutions to inadequate broadband service including but not limited to hot spots, satellite technology, and wireless service;
6. Making recommendations to the County Board on the role of Dane County in facilitating the expansion of broadband services to residents;
7. Holding two public hearings to hear from local officials and residents about challenges related to broadband.

Members of the Dane County Broadband Task Force

Public Works and Transportation Committee Member:

Dane County Board Supervisor Melissa Ratcliff (District 36) - Task Force Chair

UW Extension Committee Member

Dane County Board Supervisor Kate McGinnity (District 37) - Task Force Vice-Chair

Public Works and Transportation Committee Member

Dane County Board Supervisor Dave Ripp (District 29)

Representative from a healthcare provider in Dane County

Bill Dickmeyer, Regional Service Manager – IT UnityPoint Health- Meriter

Representative from a school district in Dane County

Michelle Jensen, Deerfield School District Administrator

Individual with an economic and/or agricultural perspective

Cathy Sutter, Fertile Ridge Dairy

Representative from a Town Board

Deana Zentner, Chair of Town of Rutland

Representative from Dane County senior focal point

Joyce Tikalsky, Stoughton Area Senior Center's Commission on Aging and Stoughton; City Council Alderperson

Representative from an internet/broadband provider

Andrew Hoyos, Hoyos Consulting

Representative from a youth community-based organization

Dr. Sarah Ghee, Boys and Girls Club of Dane County

At-large members

James Danky

Peter Weil

Dane County Executive or designee

Todd Violante, Dane County Planning and Development Director

President of the Dane County Towns Association (DCTA), or their designee

Renee Lauber, Executive Director

President of the Dane County Cities and Villages Association, or their designee

President Bob Wipperfurth

Presentations to the Task Force

The Task Force heard several presentations throughout the first year of work. Below is a list of presentations and any corresponding presentation.

July 20, 2021

Broadband Introduction

Dr. Tessa Conroy, UW Extension

<https://dane.legistar.com/View.ashx?M=F&ID=9674893&GUID=470D0737-E5A4-4F22-B5F5-FB5A7332F017>

August 5, 2021

County Authority and Funding Possibilities

Dave Gault, Dane County Corporation Counsel

<https://dane.legistar.com/View.ashx?M=F&ID=9765380&GUID=806BD410-2105-4032-A6D6-2F07C82AA0D7>

Map Coverage and Surveys

Colter Sikora, Jaron McCallum, and Milena Bernadinello, WI Public Service Commission

<https://dane.legistar.com/View.ashx?M=F&ID=9765382&GUID=B27BE5C9-CCFA-48F0-B2DA-C4C075A37A3B>

<https://dane.legistar.com/View.ashx?M=F&ID=9765386&GUID=FE407118-71F6-4F89-B903-4ECE16FD20D5>

September 2, 2021

Grant funding opportunities

Carrie Springer, Dane County Legislative Lobbyist

<https://dane.legistar.com/View.ashx?M=F&ID=9767683&GUID=703C05F1-DF51-47B1-8412-CBA9DCA56AD5>

Survey Research Introduction

Sharon Lezberg, UW Extension

<https://dane.legistar.com/View.ashx?M=F&ID=9801470&GUID=9C6C093B-4F88-44ED-BB6C-9C08D926B64C>

Grant Requirements

Alyssa Kenney and Jaron McCallum, WI Public Service Commission

<https://dane.legistar.com/View.ashx?M=F&ID=9801177&GUID=24FE722B-F7A3-46D2-8EEB-0C9635134880>

October 7, 2021

Town of Vermont – Understanding how one community champion worked to get broadband

John Hallick, Town of Vermont

December 2, 2021

MadREP speed test/Mapping Effort

Gene Dalhoff, Madison Region Economic Partnership (MadREP)

Technology Options Defined

Alex Andros, Dane County Planning and Development

<https://dane.legistar.com/View.ashx?M=F&ID=10364158&GUID=368DBDB1-F1BE-41FF-A815-04EB49CD388B>

January 6, 2022

Middle Mile

Griselda Aldrete and Kathryn Wilhelm, Alliant Energy

<https://dane.legistar.com/View.ashx?M=F&ID=10413828&GUID=10785DC6-2DF3-49A9-8BAA-7E64B03F0BA9>

February 3, 2022

Overview of final rule from Department of Treasury regarding ARPA funds and Broadband

Chuck Hicklin, Dane County Controller

<https://dane.legistar.com/View.ashx?M=F&ID=10541770&GUID=FB9F408D-BC88-451D-94E3-44D20D13809E>

March 2, 2022

Door County Broadband Engineering Study

Ken Pabich, Door County Administrator

April 7, 2022

Marathon County Broadband Task Force Overview

John Robinson, Marathon County Supervisor and Noor Hassan, Marathon County Department of Administration

Work of other local governments

Local, state, and the federal government all seem to be working on tackling broadband expansion. In the State of Wisconsin, the Broadband Task Force heard from three units of government related to their work on broadband expansion: Marathon County, Door County, and the Town of Vermont. Representatives from each shared their challenges and successes as they work to expand access in their area.

Marathon County

Broadband Task Force;

<https://www.co.marathon.wi.us/Government/CountyBoard/TaskForces/BroadbandTaskForce.aspx>

Marathon County Broadband Update

<https://board.countyofdane.com/documents/Broadband-Update-for-GWPP-02.02.22.pdf>

Door County

Door County has completed an Engineering Assessment

<https://livedoorcounty.org/wp-content/uploads/2021/11/Broadband-Infrastructure-Engineering-Assessment-Report-Executive-Summary-11-5-21-1.pdf>

Door County Broadband Coordinator

<https://doorcountypulse.com/door-county-fills-broadband-coordinator-position/>

State of Wisconsin Governor's Task Force on Broadband

<https://psc.wi.gov/Documents/broadband/2021%20Governors%20Task%20Force%20on%20Broadband%20Access.pdf>

From the past chair of the Town of Rutland, "Most survey respondents were not satisfied with their internet, either with performance or the cost. People want better internet options but are unwilling to pay more than ~ \$30-50 for it. The community is having trouble attracting younger residents and families."

Technologies

The type of Internet connection plays the key role in availability, speed and performance. The Task Force researched various technologies to understand how they work and the pros and cons of each connection type. They are as follows:

Digital Subscriber Line (DSL)

The connection to the internet runs through phone lines. Unlike dial-up however, where it would disrupt your connection with a call, you can use your internet without having to worry about an incoming call disrupting your connection. Asymmetrical (A)DSL is primarily for residential users & Symmetrical (S)DSL is typically used by businesses.

Pros: Accessible to those in rural communities. Reliable and relatively affordable.

Cons: Slow speed

Cable Internet

Cable Internet uses the same coaxial connections as cable TV. It is one of the most common types of Internet connections, and is often bundled with home phone service and TV packages. Most providers offer a variety of speed options.

Pros: Fast and readily available. It does not have the full speed potential and reliability of fiber optic service, but it's much more widely available. For the most part, it is one of the more affordable internet connection types.

Cons: Speed reliability can be a concern because coaxial cables are susceptible to network congestion and slowed speeds, especially during peak usage times.

Fiber-optic

The internet connection comes into the home via fiber-optic cable which uses pulses of light along thin strands of glass or plastic to transmit data. Fiber optics support speeds and reliability that are superior to other connection types. Upload speeds, which are especially important when working and learning from home, are also significantly faster with fiber-optic service.

Pros: Fast and reliable. It has been becoming more affordable over time.

Cons: Availability is limited. Laying enough fiber-optic cables to connect entire cities and regions is a huge logistical challenge. Service providers' expansion into underserved areas has been slow, and as a result, according to the FCC, it is only available to around 45% of US households and primarily those in urban areas.

Fixed Wireless

Fixed wireless requires installation of a fixed receiving or antenna that picks up a signal transmitted from a nearby wireless hub. Because it requires a direct line of sight to receive the strongest signal, the antenna should be placed in an area with a clear view of the sky. Although traditionally a rural internet option, fixed wireless is expanding into metro areas in which providers send signals to entire buildings such as apartment complexes.

Pros: A good option for communities that lack the resources needed for DSL. The equipment to be installed is smaller than a satellite dish, and prices are much better than satellite plans.

Cons: The connection can be distorted if there are hills, trees, buildings or other obstructions nearby. Additional towers are required.

Mobile/ Cellular Internet

Mobile internet is mostly designed for mobile phones, but as the technology improves and speeds increase, especially with the emergence of 5G, mobile connections are becoming more practical for home internet use. A cell phone provider sends signals in all directions, (most of which are picked up by cell phones) but in the case of home internet a router receives those signals and turns them into a home connection.

Pros: Speed. As technology improves speed will increase, especially with the emergence of 5G.

Cons: Most available to those living in a city or another area with strong cellular infrastructure. For price it is likely to find only one plan option, which is a flat rate for whatever speeds are available at your address.

Satellite

Satellite internet uses a dish to connect with geostationary (remaining stationary in relation to a fixed point on the surface of the earth) satellites orbiting far overhead. If you have a clear view of the southern sky, there is a good chance that there's a satellite provider capable of delivering an internet connection to your home. A provider will have to install a satellite dish on the roof of your home or in the ground facing southward. It's best suited for those living in rural areas without access to other options, especially since bad weather and other obstructions could affect your service in ways that are beyond your control.

Pros: Because it does not rely on ground-laid infrastructure line cables, cellular towers or line-of-site antenna connections, satellite internet is the most widely available type.

Cons: Currently, satellite internet is the most expensive internet connection type. Prices range by speed and data allowances. Increased competition in the industry will likely bring prices down for the consumer. More companies are working toward getting into the market, for instance, Amazon's Project Kuiper.

Broadband Over Power Lines (BPL)

BPL is the delivery of broadband over the existing low- and medium-voltage electric power distribution network, providing internet to homes using existing electrical connections and outlets. Speeds are comparable to DSL and cable modem speeds.

Pros: Because electrical lines are installed virtually everywhere, alleviating the need to build new broadband facilities.

Cons: It is an emerging technology that is available in very limited areas.

Drones

A drone tethered 100-200 feet above the ground expands existing cell phone service tower internet connections. Here in Wisconsin, the Northland Pines School District used state funds to conduct a 6-month pilot of using this technology, tethering a drone 200 feet off the ground.

Pros: Provides flexibility not available with permanent structures, allowing a targeted response to the internet needs of a community.

Cons: Very new technology so not widely available.

Mapping Challenges

Many decisions regarding grants and broadband improvements are based on maps that were created by the Federal Communications Commission (FCC). While it is important to have a standardized method of mapping internet access, these maps are inadequate in that they are based on ISP self-reported service areas. FCC has determined broadband coverage by counting an entire census block as served if a provider reports that it offers service to at least one location in the census block.³

Task Force members heard comments from experts and the public lamenting the inaccuracies of these maps. When grant decisions are made based on these maps, many households remain unserved. The true story is that several communities within Dane County are underserved (e.g., have unreliable and slow internet service), and that there are numerous areas - pockets, gaps, and edges - that are fully unserved.

The Wisconsin Public Service Commission (PSC) provides a map of broadband access that is updated with information as declared by internet service providers through data collection by the PSC and FCC.

The map in Figure 2 of Dane County, as updated on February 22, 2022 shows presumed coverage in Dane County.

Efforts to collect reliable coverage data have increased (locally and nationwide) to improve understanding of where sufficient broadband service is available. Internet service providers and research institutes (such as MLab) have developed tools to measure internet speed and connectivity data. There is widespread recognition that the maps are insufficient, and federal efforts to mandate improved maps have been enacted.

There's chaos regarding competition: some areas have several providers; others have only 1. The Task Force should address the issue of increasing competition so that they'll get better service."
– Survey Respondent

What could improve the maps?

- 1) Intentionally collected, crowd-sourced, continuously updated data, such as that collected by the [New North, Inc.](#), an economic partnership for 18 Counties in the northeast region of Wisconsin, is vastly improving the maps available. In South-Central Wisconsin, the Madison Region Economic Partnership (MadREP) is

³ U.S. Government Accountability Office. "Broadband: FCC is Taking Steps to Accurately Map Locations That Lack Access" GAO-21-10447. Sept. 28, 2021. <https://www.gao.gov/products/gao-21-104447>

replicating the effort by the New North, and crowd-sourcing data using this speed test and mapping tool: <https://madisonregion.org/test-your-speed/> . The goal is to collect thousands of data points in order to better identify gaps in service.

- 2) The 2020 Broadband Deployment Accuracy and Technological Availability Act (Broadband DATA Act) has required the Federal Communications Commission (FCC) to create a location fabric - a dataset of all locations or structures in the U.S. that could be served by broadband. The purpose is to improve the granularity and precision of FCC's broadband deployment mapping and to assess where households still lack access to broadband.⁴
- 3) Many advocates would like to see requirements that ISPs provide data about the actual locations they are serving, and with which technologies.

⁴ Ibid.

Limitations of State Law

At the June 2, 2022 Broadband Task Force meeting, Carrie Springer, Dane County Legislative Lobbyist presented the following information and advocacy recommendations regarding Wisconsin laws limiting broadband expansion.

Wisconsin state statute contains numerous limits to local government participation in providing broadband service for residents. State statute 66.0422 outlines what is and isn't allowed when it comes to broadband expansion efforts by local governments. As stated in the Governor's Task Force on Broadband Expansion report: – "Wisconsin is one of three states with three identified barriers (funding barriers, competition barriers and bureaucratic barriers) which make it functionally impossible for a municipality to build and provide broadband service to its citizens at a price its citizens can afford."

State statute 66.0422 is part of chapter 66 of the state statutes on general municipality laws. The broadband rules fall under the subchapter of regulation, specifically regulation of video services, telecommunications, and broadband facilities. Other types of regulations in this subchapter include things like mobile tower siting, local solar and wind permits, and local weapons regulations.

The section of this chapter dealing with broadband regulation is the result of two different bills during two different legislative sessions. Both bills (2003 Act 278 and 2007 Act 42) were bipartisan and members supporting that bill in both parties continue to serve in the legislature. The most recent legislative session did not make any changes to this section and the only bill on broadband that passed this session outside of funding for expansion grants at the Public Service Commission (PSC) was SB 365, which was vetoed by the governor. In his veto message the governor said he vetoed the bill because it would have put into statute a new definition for "unserved" based partly on speed rates that could get outdated quickly and because it set up a procedure that would allow internet service providers to block expansion grants for up to two years if they stated they already intend to provide service in that area sometime in those two years. This would have potentially shifted even more power to service providers than current law.

This legislative history combined with the state's large investment in the current set up through the PSC expansion grant program means the legislature is unlikely to make major changes to the law. Given this reality, an advocacy approach that doesn't attempt to repeal or dramatically remake the current structure would gain stronger bipartisan support.

The report issued last June by the Governor's Task Force on Broadband Access has a number of policy recommendations, including the recommendation that current

public/private partnership remains the top priority. The report recommends that in areas where no private partner is available, policy barriers should be removed to allow publicly owned broadband infrastructure - but only in cases where this does not compete with private businesses. The report called for removal of “any restrictions that disallow individuals from approving bonds or levies to build out broadband infrastructure and service” for those areas where there are no ISP partners available. While the report recommends allowing these local efforts, the legislature is unlikely to change the levy limits to allow this.

The report further recommends eliminating the usual required reporting process, because it costs too much for most communities, and replacing it with a reporting tool from the PSC. The governor’s Rural Development Report also mostly called for changes that work within the current framework such as creating a method to hold providers accountable for the service they claim to provide. The burden is currently on consumers to prove they aren’t getting the advertised speed.

As a point of clarification, Wisconsin state laws allow municipalities to own and operate broadband networks, but only if the subscribers of the service can fully fund it. In other words, the general population cannot help pay for it, meaning taxpayers may not subsidize the service. The process of getting to a municipal owned service is laid out in the statute as well; however, it is quite involved. Any municipality that wants to go down this road needs to do a feasibility study, hold public hearings, notify internet service providers of the intent to build it, and allow any internet service providers operating within that municipality a chance to say they are considering offering service in that area within the next nine months.

Most local governments don’t have the time, staff, or resources to go this route. Advocating for state resources to help municipalities navigate the public/private partnerships encouraged by the state to bring service to their area with an internet service provider would be a good place to put advocacy efforts next session.

ARPA Funds Summary

At the August 5, 2021 Broadband Task Force meeting, Dave Gault, Dane County Corporation Counsel's Office provided an overview on County authority as it relates to ARPA Funds. His presentation is linked here:

<https://dane.legistar.com/View.ashx?M=F&ID=9765380&GUID=806BD410-2105-4032-A6D6-2F07C82AA0D7>

Of note is the specification that any new service must aim to provide 100 Mbps download and at least 20 Mbps upload (with 100Mbps upload preferred). Fiber optic investment is encouraged due to its scalability. The current definition of adequate broadband service is 25 mbps download or 3 Mbps upload.

At the February 3, 2021 Broadband Task Force meeting, Chuck Hicklin, Dane County Controller provided an overview of the U.S. Treasury Department final rules on ARPA funds. His presentation is linked here:

<https://dane.legistar.com/View.ashx?M=F&ID=10541770&GUID=FB9F408D-BC88-451D-94E3-44D20D13809E>

Federal Infrastructure Bill

The Bipartisan Infrastructure Deal allocates \$65 billion to expand broadband in communities across the U.S. These funds are meant to create more low-cost broadband service options, subsidize the cost of service for low-income households, and provide funding to address the digital equity and inclusion needs in our communities.

The Bipartisan Infrastructure Deal gives the National Telecommunications and Information Administration (NTIA) responsibility for the following broadband programs:⁵

- \$42.45 billion in grants to states (including the District of Columbia and Puerto Rico), and territories focused on funding high-speed broadband deployment to households and businesses that currently lack access to such services.

⁵ U.S. Department of Commerce. "Fact Sheet: Department of Commerce's Use of Bipartisan Infrastructure Deal Funding to Help Close the Digital Divide." Nov. 10, 2021. <https://www.commerce.gov/news/fact-sheets/2021/11/fact-sheet-department-commerces-use-bipartisan-infrastructure-deal-funding#:~:text=The%20Bipartisan%20Infrastructure%20Deal%20allocates,inclusion%20needs%20in%20our%20communities>

- \$2 billion for Tribal broadband grants, which is more than double the funding for NTIA's existing Tribal Broadband Connectivity Program.
- \$2.75 billion to fund Digital Equity.
- \$1 billion for middle-mile connections to build a high-speed backbone for communities, businesses, and anchor institutions.

Data Collection

Survey

The Dane County Broadband Task Force contracted with the Survey Research Center, a research organization at the University of Wisconsin-River Falls, to conduct a survey of a statistically representative sample of the rural population of Dane County. The survey focused on two general zones - the northern region and the southern region, with exclusion of the urban core.

Random Sample Survey Targeted Areas: The survey targeted areas of Dane County believed to be underserved by internet service providers (ISPs), primarily rural towns and villages. For the purposes of the study, the greater Madison area was excluded from the study (this area includes the Cities of Fitchburg, Madison, Middleton, Monona, Sun Prairie, Verona and surrounding areas). Additional towns and villages were excluded from the study when both American Community Survey (ACS) data and Federal Communications Commission (FCC) data indicated high broadband availability.

As mentioned earlier in this report, during the course of Task Force deliberations it became apparent that FCC data (used by the Public Service Commission to develop maps of broadband access) is inaccurate and incomplete, and greatly overstates the extent of broadband coverage. As the survey was intended to improve on the maps by identifying areas of broadband coverage gaps, respondent addresses were collected in order to map areas with inadequate or no service.

The random sample survey was supplemented with an open access survey, which was made available to other residents of Dane County, and promoted by members of the Task force. The additional responses on internet availability and speeds will allow the Dane County Planning Department to develop more nuanced maps than those available through the PSC, in order to delineate areas of no or limited service.

Broadband is currently defined as at least 25 MBps (transfer of “megabits per second”) of download speed and at least 3 Mbps of upload speed (Federal Communication Commission-FCC). This threshold had been considered adequate for browsing the internet, receiving and sending email, streaming videos, and playing basic online games. However, as was evident during the first years of the Covid-19 pandemic, this level of broadband is insufficient for households with multiple users and increased need for connectivity for work, school, medical access, and entertainment.

About 40% of survey responses from the statistically representative survey report download speeds of 20 Mbps or less, and another 40% report upload speeds of less than 5 Mbps. Given the current definition of broadband (above), it can be inferred that at

least 40% of residents of rural Dane County do not have access to broadband internet. The actual proportion of residents without adequate access is likely much higher. Additionally, of those respondents who indicated having internet access at home, over one-third of residents expressed dissatisfaction with their internet service. The primary reason for dissatisfaction with internet service was that the services are too expensive, followed by the second most common response that services are too slow. Upwards of one-fourth of respondents also indicated that service was unreliable.

Respondents to the open-access survey, on average, were more likely to be dissatisfied with internet availability and services, even while upload and download speeds were slightly higher for those who took the open access survey. Respondents were dissatisfied with the cost and speed of services, and advocated for more options when choosing a provider (e.g., more competition).

Data Collection on existing broadband speeds

MadREP Speed Test

Recognizing that with faster broadband service, businesses will be better equipped to operate, thus improving economic development in the region, the Madison Region Economic Partnership (MadREP) has initiated work to expand broadband access.

MadREP developed a website and public information campaign to crowd-source speed tests from the public. With enough self-reported data, the maps will more accurately identify those areas that are underserved. The data will be used to pursue funding for broadband infrastructure improvements through state and federal grants. The data from the speedtest is not from a random sample; hence the need for large numbers of resident responses. MadREP and Dane County will share research data.



"With the state spending all this money to bring [high speed internet] to rural areas, and all the companies certainly taking the money, no one will bring it to me" – Survey Respondent

Communications & Public Participation

Communications & Outreach

The Task Force developed several communications efforts to inform the public about its work throughout the year, including:⁶

Please work to make sure these rural pockets obtain adequate broadband coverage so that all residents of Dane County can work and get educated in a way that provides a minimum of adequate equal broadband access." – Survey Respondent

- 1) Dane County Broadband Task Force website

<https://board.countyofdane.com/initiatives/Broadband-Task-Force>

- 2) Broadband in Dane County overview video https://youtu.be/zTnEKzvP_Lw
- 3) A letter to Dane County school districts requesting information
- 4) A letter to Dane County municipalities in collaboration with Dane County Cities and Villages Association and the Dane County Towns Association
- 5) Various communications to constituents regarding public hearings, survey dissemination, and speed test participation
- 6) Presentations by Task Force Members/County Board Supervisors
 - Town and Village Boards
 - Dane County Towns Association
 - Dane County Cities and Villages Association
- 7) Press releases
 - March 19, 2021 – Resolution Introduced to Create Dane County Broadband Task Force <https://countyofdane.com/PressDetail/10819>
 - June 15, 2021 – Dane County Broadband Task Force Named <https://countyofdane.com/PressDetail/10863>
 - August 4, 2021 – Dane County Broadband Task Force to Hear Presentations on
 - County Authority and Mapping at August Meeting <https://countyofdane.com/PressDetail/10885>
 - February 1, 2022 – Dane County Broadband Task Force to Hold Public Hearings, Ask for Resident Input <https://countyofdane.com/PressDetail/10985>
 - March 16, 2022 – Dane County Broadband Task Force Asks Members of the Public to Complete Broadband Survey <https://countyofdane.com/PressDetail/11027>

⁶ Communication pieces can be found in Appendix x...

- May 20, 2022 – County Board Supervisor Melissa Ratcliff Introduces Resolution to Extend Dane County Broadband Task Force
<https://countyofdane.com/PressDetail/11074>

Public Participation

The Task Force solicited public comment via public input meetings and requests for email comments. Additionally, the survey (both the random sample and the open access surveys) provided several opportunities for respondents to provide comments. The Task Force used public input to better understand the challenges rural residents face in accessing internet services.

As the public input process occurred during the covid-19 pandemic, the Task Force was limited in the number of options available to seek comment from the public.

Where typically the Task Force members may have offered local input sessions and/or solicited comments via meetings at libraries, senior centers, and other public spaces, this Task Force opted to use virtual venues to collect input. Task Force members recognize that there is irony to this decision, in that residents who do not have access to the internet most probably would have difficulty accessing a virtual meeting. Nevertheless, public health and safety was our priority.

During the public input period, we received 31 unique e-mail correspondences. In addition, we were sent results from a survey conducted by the Town of Dunn, which had 41 responses. During the two public input sessions, we heard from 20 unique individuals. Comments from the public input sessions and those collected via the Task Force Survey and from surveys administered independently by Towns provide testimony that is helpful in grant applications.

Comments from the public input were recorded and groups according to type of comment received. The comments mainly fell into three main categories of restricted service (further details and examples follow):

1. People who lived in an unserved 'island' or gap area, surrounded by housing developments with better service;
2. People who lived on rural roads where only a portion of the road was serviced, and the ISP was unwilling to extend service; and

"I am once again about to be underserved and have been ignored again as a new subdivisions in my area will have services and I will not." – Survey Respondent

3. People who subscribed to an internet service provider (typically receiving DSL or cable service; with occasional comments about fixed wireless or satellite service) but who received very inadequate service at a high price.

Additional comments concerned the various arrangements that households had to make in order to cobble together enough internet to enable at-home work or schoolwork, and frustration with the current market-focused practices that have failed to provide sufficient internet service to all residents at an affordable price.

Categories of Restricted Service

- 1) Islands of unserved customers (gaps in coverage): We heard from long-time residents in rural communities who were unable to get internet service even when households in contiguous new housing developments were being provided with higher speed and higher quality internet service. Internet service providers (ISPs) were unwilling to provide legacy homes with internet even if the lines were going by these homes.

Example: resident who lives in a 'black hole' of service near Lake Kegonsa, but is surrounded by landline broadband users.

Example: resident who is in a 'bubble' of unreliable internet, where they can see fiber cables nearby being put in to serve the Village of Marshall.

- 2) People on rural roads where only a portion of the road was being served. Similar to above, numerous residents stated that they lived in areas where they could see workers laying cable or fiber lines, or which their neighbors had access to, but which they could not access. Others indicated that there were towers in the vicinity, which due to topography or tree cover, they could not access. Several times we heard that when residents reached out to the ISPs to request that they extend coverage, these households were told that they would have to cover the cost of extending that service (citing costs to households between \$15,000-\$60,000). Residents expressed frustration at being in close proximity to a service zone but being shut out from that service.

Example: Neighbors in the Town of Sun Prairie who circulated a petition to get Charter to install fiber to home, and were told it would cost them \$30,000 to do so.

Example: A resident in the Town of Dunn spoke about a road where there is service at both ends of the road but not the middle; the households without service were told that they would have to pay \$50,000 to get connected.

- 3) Quality and price of service: Practically all public comments indicated that the service they received was very slow, intermittent, and costly. Many residents resorted to the best viable service option they could pick up in their area (often DSL, less frequently cable, dish, or fixed wireless). Many respondents stated that they were using their cell service due to lack of suitable internet. Others reported very slow speeds at high monthly rates.

Throughout the public comment and e-mail, residents expressed the sense of being left behind, of not being competitive in the 21st century. Several officials mentioned the problem that young people could not be attracted to the community without broadband availability. Residents expressed concern about whether they would be able to sell their homes; a few respondents indicated that they would have to move to a different area if they were not able to improve their internet service. These issues should be of concern to anyone concerned about the health and vitality of rural areas, as population ex-migration is a concern for economic development in these rural communities.

Recommendations

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
Internet service provider collaboration and infrastructure criteria				
1. Hire a Broadband Coordinator (can be a consultant or County staff).	To be determined	To be determined		
2. Work with the Internet Service Providers (ISPs) to complete the last mile and fill in the gaps.	Included in the current RFP for engineering study; Funding will have to be continued by the County after ARPA funds are expended	July 2022- July 2023 engineering study August 2023 - Dec. 2024 implementation	Engineering consultant would identify gaps; Broadband Coordinator implements recommendations and assists local communities; liaison with ISPs	

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
<p>3. Fund work of laying middle mile infrastructure (dark fiber) in select rural areas during road construction.</p>	<p>Pilot project included in 2022 budget: \$270,000 for 3 miles of conduit on Hwy M (as a reference point)</p>	<p>To be determined</p>	<p>To be determined</p>	
<p>4. Recruit ISPs to lay fiber to premises in areas of greatest need; provide funding match.</p>	<p>To be determined</p>	<p>After recommendations from Engineering study; before 2024</p>	<p>Consultant identifying areas of greatest need</p>	
<p>5. Provide incentives to ISP providers to create competition for them to better serve hard to reach areas</p>	<p>Unknown – needs clarity</p>	<p>Unknown</p>	<p>Unknown</p>	<p>X</p>

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
Internet service provider collaboration and infrastructure criteria	Internet service provider collaboration and infrastructure criteria	Internet service provider collaboration and infrastructure criteria	Internet service provider collaboration and infrastructure criteria	Internet service provider collaboration and infrastructure criteria
6. Develop criteria for larger providers to extend coverage beyond subdivisions to households in proximity	Included in Engineering Assessment RFP	To be determined	To be determined based on Engineering Study	
7. Study the potential for cooperative structures to develop middle mile infrastructure.	Included in Engineering Assessment RFP	To be determined	To be determined based on Engineering Study	X

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
<p>8. Establish a procedure and set criteria for evaluating and responding to external/private sector proposed partnerships for broadband expansion.</p>	<p>Included in Engineering Assessment RFP</p>	<p>To be determined</p>	<p>To be determined based on Engineering Study</p>	
<p>9. Research opportunities for the County to own fiber through intermediary entities (such as MUFN) with the potential of leasing back to ISPs.</p>	<p>To be determined</p>	<p>To be determined</p>	<p>County staff conduct research</p>	<p>X</p>
<p>10. Research whether it is possible to require that ISPs get a permit for infrastructure development, thus allowing for the County to collect information on new infrastructure.</p>	<p>To be determined</p>	<p>To be determined</p>	<p>Collaborative research with Engineering Assessment consultant and County staff</p>	

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
Outreach, education, and alliance building				
1. Conduct outreach efforts to municipalities about broadband.	No costs identified	Now – in the next 6 months	Task Force members, community partners, County staff	
2. Engage with Public Health officials and entities to expand telehealth using social determinants of health framework.	No costs identified or costs to be determined	Now – in the next 6 months	To be determined	Build alliances, in order to build the case for towns/villages to commit funding (for improved delivery of health care services)
3. Advise towns and villages about broadband choices and costs: recommendation for fiber infrastructure.	Information to be available following Engineering Assessment No costs identified	Now – in the next 6 months	Engineering Assessment consultant	

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
<p>4. Identify contacts in surrounding Counties that are working on broadband expansion and establish relationship with them in order to have contiguous service.</p>	<p>No costs identified</p>	<p>Now – in the next 6 months</p>	<p>County staff working with MadREP</p>	
<p>5. Develop a public website that informs constituents about what ISPs operate in their area and what type of service they provide.</p>	<p>Information to be available following Engineering Assessment</p> <p>No costs identified</p>	<p>Now – in the next 6 months</p>	<p>Information requested by Engineering Assessment RFP</p>	

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
Interim methods to provide service				
1. Lend devices (e.g., tablets) to those who cannot get access to ISP services.	Some cost to purchase devices & provide contract to service provider	Within 12 months	County staff to research costs and ability to do this	X
2. Share information about the new Federal Affordable Connectivity Program in Towns, Villages, Municipalities.	Staff time for research and coordination	Now – in the next 6 months	Task Force members, community partners, County staff	X
3. Build a catalog of the names of people to contact in Dane County about public wi-fi access, connection credentials, and hours for indoor use.	Staff time for research and coordination	Within 12 months	To be determined	Build relationships with other entities such as the Dane county Library Service

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
<p>4. Test wifi and hotspot performance in Dane County at village centers and town halls to learn about reliability, speed, and distance limits. Publicize information about these locations to the public.</p>	<p>Staff time for research and coordination</p>	<p>Within 12 months</p>	<p>To be determined</p>	<p>X</p>
<p>5. Provide instructions to public for how to use smartphones as hotspots.</p>	<p>Staff time for research and coordination</p>	<p>Within 12 months</p>	<p>To be determined</p>	<p>X</p>

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
Funding and research				
1. Identify funding opportunities from State & Federal Govt.	Staff time for research and coordination	Ongoing	Broadband Coordinator	
2. Double up with grant opportunities for each project (combine resources from Dane County, PSC, Federal grants).	Costs to be determined	Ongoing	Broadband Coordinator	
3. Work with Dane County to contribute funding to applications for PSC and other grants.	County contribution from ARPA or federal infrastructure money; Beyond these funds, County would have to develop a fund	Ongoing	Broadband Coordinator	

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
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Advocacy: The following are legislative initiatives or advocacy campaigns that the Task Force and associated organizations should support

1. Increase funding for the PSC Broadband Expansion Grant Program.		Ongoing	Task Force members	Advocacy campaign
2. Allocate State and County funding for staff positions dedicated to assisting municipalities with applying for grants.	~ \$100,000 per position (estimated cost to entity supporting each position)	Ongoing	Task Force members	Advocacy campaign
3. Conduct outreach and training programs geared toward helping municipalities get ready to apply for grants.	Incorporate this task with either existing staff positions or with newly created position (above)	Ongoing	State and municipal staff members with knowledge of grant programs, in coordination with the PSC	Advocacy campaign

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
<p>4. Create accountability measures for internet service providers to:</p> <ul style="list-style-type: none"> a) submit speed data to the PSC on a regular basis, b) provide granular service data to the PSC on scale smaller than census block, c) provide advertised speeds to customers. 	<p>Cost of monitoring and implementing this recommendation unknown</p>	<p>Ongoing</p>	<p>Task Force for advocacy; PSC for implementation</p>	<p>Advocacy campaign</p>
<p>5. Provide authority to the PSC to require, in grant applications, that ISPs provide internet coverage to unserved 'neighbors' when applying to serve a concentrated area (e.g., new developments). This would extend routes in less densely populated areas.</p>	<p>None</p>	<p>Ongoing</p>	<p>Task Force for advocacy; PSC for implementation</p>	<p>Advocacy campaign</p>

Recommendation	Potential Costs Identified	Timeline	County role/ Who takes next step on recommendation	Task for Dane County Broadband Access and Affordability Task Force
6. Consider classifying the internet as a public utility to improve the quality of service and ensure access for all. This would enable ISPs to be regulated.	Unknown	Ongoing	Task Force Members	Information and advocacy campaign
7. Change state law that restricts Counties and municipalities from serving as ISPs.	Unknown	Ongoing	Task Force Members; Towns Association; Cities & Villages Association (statewide)	Information and advocacy campaign; Outreach to State and Federal leaders
8. Implement 'dig once' ordinance throughout the state.	Unknown	Ongoing	Task Force Members; Towns Association; Cities & Villages Association (statewide)	Information and advocacy campaign

Next Steps

The Dane County Broadband Task Force has recommended that the work of the Task Force continue. Pending approval from the Dane County Board of Supervisors, the Task Force will be extended until the end of 2024 to work on the recommendations created in the first year, establish partnerships, and dive more deeply into access and affordability issues. Many of the recommendations of the Task Force are long-term, high-investment ideas that will take many years of careful, thoughtful work and collaboration to put into place.

Dig Once Pilot

A pilot project was included in the 2022 budget to lay conduit when doing a County highway project. The amendment includes \$270,000 to provide funding for design and installation of conduit for potential future installation of broadband networking cable along three miles of county highways where needed and feasible during the reconstruction process.

In rural areas, directional boring is the standard method of installing underground communications cable. However, in some instances, it may be advantageous to install conduit during a highway reconstruction project to facilitate expansion of broadband infrastructure. The pilot project is meant to test the feasibility of doing so.

<https://dane.legistar.com/View.ashx?M=F&ID=9922288&GUID=DF1E5F04-D7AE-43F2-B9B7-4936DDEB941E>

Engineering Assessment RFP

The Task Force determined that a professional broadband infrastructure engineering assessment will provide technical information that will help the county be successful at improving broadband service throughout Dane County. Other counties in Wisconsin have done similar studies and Dane County will benefit from doing the same. The broadband engineering assessment study will provide the information needed to analyze, select and implement the best solutions to improve broadband across the entire county.

The goals of the engineering assessment are to:

- understand what is currently available, including where the existing infrastructure serves, what the capacity is and who owns the infrastructure;
- identify voids or deficiencies in service; and

- recommend options for providing service in both the short and long term.

While assessing the current environment, the consultant will integrate results of the survey conducted for Dane County by UW-River Falls. The survey, which included speed testing, contains data that will be integral to identification of gaps in service, allowing Dane County to build a more accurate broadband service map.

In addition to providing technical information, the engineering assessment consultant will serve as a 'broadband coordinator' managing the interaction between all stakeholder groups to coordinate and develop the broadband fiber network in Dane County. This includes helping local communities in project development and grants, as well as working with Internet service providers (ISPs) in coordinating public private partnerships and assistance with grant funding. It is recognized that pursuing funding for broadband expansion requires expertise and resources that are beyond the capacity of individual small municipalities, especially rural towns.