

2022 GOVERNOR'S TASK FORCE ON
BROADBAND ACCESS



Wisconsin
Broadband Office

REPORT TO GOVERNOR TONY EVERS
AND WISCONSIN STATE LEGISLATURE



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EXECUTIVE SUMMARY

This is the second annual report of the Governor’s Task Force on Broadband Access. This year, the Task Force worked as Congress passed the Bipartisan Infrastructure Law (BIL), making a once-in-a-generation investment in broadband access, adoption, and affordability. Almost all of the recommendations from the first annual Task Force report still ring true, and the Task Force members believe that the goals and recommendations set within the first report should be advanced, as seen in the Policy recommendations. This year, the Task Force focused on gathering input from people and organizations that could inform the rollout of timely initiatives like the BIL programs and state programs.

The 2021 Task Force on Broadband report focused on five areas of concern in order for Broadband access to become broadly accessible, affordable, and adoptable.

The five areas were:

- Policy and Legislative
- Funding
- Data and Mapping
- Active Network Building and Community Alignment
- Digital Equity and Inclusion

This year, 2022, was more specific in focus. This second year of work, the Task Force focused on options for Wisconsin to leverage the many broadband planning initiatives around the state to the benefit of the state’s overall broadband goals. Task Force discussions coalesced around the *structural network advancements* necessary for local and regional planning work to be conducted, as well as a *tool kit* or resources that would benefit the work. Additionally, the Task Force focused on policy issues that may emerge as the state and national broadband landscape shifts in the coming years.

Similar to the first year’s work, the Task Force held up an equity lens up to all recommendations members brought forth. It is not enough to build the infrastructure if residents cannot afford or access the internet for bettering themselves and their communities. Additionally, Task Force members strongly voiced that the Tribal Nations of Wisconsin, who also have the objective to ensure broadband access is equitable on their lands, need support tailored to their communities.

This year’s Task Force discussions produced recommendations in three areas:

- Active Network Building and Community Alignment
- Resources for Planning and Action
- Policy

ACTIVE NETWORK BUILDING AND COMMUNITY ALIGNMENT

The landscape for broadband funding is vastly different now than it was in June 2021 when the first annual Task Force report came out, particularly due to the historic investments of the BIL. Given the unprecedented funding levels that will become available to connect Wisconsin, discussions took a new shape in our work this year. Task

Force members discussed where and how BIL funds could be beneficial to support planning efforts. The Task Force specifically focused on the process and strategies utilized by communities and regions to expand broadband access, affordability, and adoption by building human and financial capacity through partnerships, technical assistance, and planning. Thus, funding suggestions are found throughout the recommendations, and include the need for state funds to continue to be available, especially for those areas that are not eligible for BIL funds or to serve as a funding match in the BIL Broadband Equity, Access and Deployment (BEAD) program.

We can see examples of success in Broadband Expansion grant applications: those communities with documented need, which have done mapping and planning, and which have leadership in place to manage these complex projects are the communities that are receiving the grants. Many are developing countywide strategies that go further in preventing “connectivity islands.” We know there are local non-profits who are running robust digital equity projects for those they serve, but with more resources, they can expand their projects and their footprint. In order to proliferate this type of activity, systematic support of this work with cyclical funding is called upon in order to reach the communities that need guidance and support during this critical period of infrastructure buildout.

The recommendations took shape on how this community alignment could be achieved, by what has been experienced by the Task Force members in their own work in the field, along with thinking about how funding could support these relationships.

RECOMMENDATIONS

- Establish and support a coalition of willing, engaged broadband leaders to connect communities with providers, local and regional partners, planning and technical assistance opportunities, funding opportunities, and resources.
- Create pathways for community leaders and stakeholders to connect and network with ISPs and middle mile providers, including internet service providers (ISPs) not currently serving the community.
- Support the work of organizations and other stakeholders in broadband that have built trust with unserved and under-connected communities.
- Create and fund technical assistance programs to guide communities in developing broadband plans, navigating funding opportunities, and achieving their broadband goals and make these funds available to existing trusted organizations such as schools, libraries, nonprofits, higher education, and economic development organizations.
- Encourage and support coordination with tribal entities in broadband planning, resources deployment, and funding.
- Foster dialogue and interaction about broadband between municipal organizations, state agencies, federal agencies, and ISPs with the goal of improving deployment.
- Develop and improve outreach for the Affordable Connectivity Program (ACP) and similar internet discount and assistance programs. Seek to reduce administrative barriers and provide targeted enrollment supports.

RESOURCES FOR PLANNING AND ACTION

In order to unlock the benefits of Active Network Building, tools and resources must be secured and disseminated, along with training and support. These tools and resources will ensure that competitive, fiscally prudent projects are developed by those local or regional initiatives.

The Task Force discussed tools for such planning, as there is a shared responsibility between the provider and the community to be good partners in building relationships for these broadband initiatives. BEAD planning funds give the opportunity to disseminate resources for this work to communities. If there is a common tool that all communities can access for this work, providers and communities alike can make comparison of projects easier in the long run.

Given the timeline that the BEAD funding will be available, there needs to be a substantial amount of funding available for technical assistance that will truly create readiness. A comprehensive “playbook”, a clearinghouse for planning resources, and detailed examples and case studies should live in a central repository for continued learning during this upcoming period.

Additionally, the Task Force discussed a need for more tools to understand where middle mile exists in the state and how it can be expanded in areas that lack this element of broadband infrastructure. As you will read from the case study highlighting the New North regional broadband planning project, there were two elements to the report out: 1) county level plans including a broadband expansion plan that was delivered to each of the 18 counties and 2) a comprehensive regional plan, indicating the need for more middle mile for a more robust system. It is important to add that we are seeing county level plans emerging, which could be paired with or live within regional or statewide maps. The scale of the mapping solution brings to light the scale of the problem.

But preparation is only half of the work. Ongoing assessment, confirming the closure of access and adoption gaps, and identifying emerging needs should also be part of the designed outcomes and needs at the state level. One of the recommendations is to reflect on the first Task Force on Broadband Access report and continue to assess some of those clear markers — percentage of the state accessing certain speeds, for example. The Task Force members requested the formulation of dashboards that could make that tracking easy to review and easily accessible. This would have to be created and maintained, and with the expansion of planning funding through BEAD sources, this would be well received.

RECOMMENDATIONS

- Identify, study, and map current middle mile availability and needs to assist in local planning for last mile projects.
- Fund and support annual statewide mapping and data collection efforts (e.g., GEO software, Wisconsin Internet Self Report, Department of Public Instruction Digital Equity Surveys) that support stakeholder networks, physical infrastructure networking, and overall broadband planning efforts.
- Collect internet access data from all ISPs at household and business levels of granularity.
- Create a ‘playbook’ or ‘how-to’ guide to assist communities and local leaders in broadband and digital equity planning efforts. The guide should include best practices, success stories or case studies, mapping resources, and models that have worked in Wisconsin or are working well in other states.
- Develop data dashboards of where public funds (both state and federal) have been spent, have been awarded, or could be spent.
- Create broadband planning and implementation grants for regions and communities.
- Identify state and organizational agencies that are involved in broadband deployment, describe their roles, services, and resources. Create a resource map that can be used by communities and ISPs as they form stakeholder networks as part of broadband planning and deployment.

POLICY

The federal Bipartisan Infrastructure Law, or BIL, also called the Investment and Jobs Act (IIJA) is set to infuse \$65 billion into the United States economy for broadband expansion. The inclusion of broadband in an infrastructure bill previously designed for transportation, roads, bridges, energy, and water is a milestone, recognizing broadband as vital infrastructure.

States are needing to evaluate policies and procedures around broadband in light of federal programming. A May 2022 report by the Government Accountability Organization (GAO) is calling for a strategy to address fragmentation, overlap and duplication by federal agencies. GAO found more than 100 federal programs administered by 15 agencies. Twenty-five programs have broadband as their main purpose, and several overlap because they can be used for the purpose of broadband deployment, planning infrastructure, making service affordable, providing devices, and building digital skills. Mapping services and streamlining policies can extend reach of programs and dollars intended to increase broadband capacity.

If Wisconsin is going to ensure affordable and reliable broadband access for all, it will be critical that Wisconsin continues to monitor and adjust its broadband policies.

The Task Force reaffirmed and strengthened its recommendation on middle mile construction. Lack of middle mile construction continues to exist in Wisconsin rural areas. Without grant dollars and cooperative agreement between middle mile and last mile providers, some areas of the state will remain unserved and underserved. It is also difficult for municipalities and providers to know who a potential partner could be because current middle mile maps are proprietary. The availability of middle mile funding through BIL could help alleviate some of the middle mile burden if Wisconsin takes a strategic approach to middle mile.

The Notice of Funding Opportunity (NOFO) released on May 14, 2022, by the National Telecommunications and Information Administration (NTIA) to apply for BEAD funding makes it clear that there will still be a strong need for Wisconsin to sustain its own State Broadband Expansion Grant Program. The requirement that applicants provide a 25% match and financial guarantee upon application may prohibit some providers, especially smaller providers, from accessing these federal funds. These smaller providers are often those covering unserved and underserved areas where it is not there to appeal to larger providers.

RECOMMENDATIONS

- Align state policy, coordinate, and maximize current and future federal funding.
- Continue advancing and reviewing the goals from the 2021 Task Force report and measure Wisconsin's current performance relative to those goals.
- Reduce barriers to permitting and construction, facilitating the expected timeline of broadband expansion plans.
- Ensure policies exist for sufficient, accessible and affordable middle mile infrastructure to connect all regions of the state.
- Align state consumer protection labeling to federal initiatives to increase transparency, decrease barriers for providers, and encourage consumer adoption.
- Sustain State Broadband Expansion Grant Program funding to leverage federally funded projects and support local projects not eligible for federal funding.
- Increase Wisconsin Broadband Office capacity (staff and resources) to ensure new federal funding directed to Wisconsin can effectively and efficiently achieve the highest possible level.

TASK FORCE MEMBERS

Governor Evers appointed members to the Task Force on Broadband Access to provide balanced perspectives, reflect individual's knowledge or expertise, or to represent an organization engaged in the expansion of broadband access, adoption, or affordability. The chair of the Task Force was Brittany Beyer, executive director for Grow North Regional Economic Development Corporation.

The Governor's Task Force on Broadband Access members include:

Brittany Beyer (Chair), Executive Director, Grow North Regional Economic Development Corporation

Robert Earl Baker III, Founder, RenderTech

Marta Bechtol, Executive Director, Educational Communications Board

Tom Boron, IT Director, Washburn County

Salvador L. Carranza, Founder, Latino Education Council of Dane County

Shannon Clark, CEO & General Manager, Richland Electric Cooperative

Lori Collins, President/CEO, SonicNet Inc.

Douglas Cox, Director of Land Management, Menominee Indian Tribe of Wisconsin

Emily Dittmar, Legislative Director, Wisconsin Educational Media and Technology Association

Andrew Faust, Senior GIS Analyst, North Central Wisconsin Regional Planning Commission

Celeste Flynn, Director of Government Affairs, Charter Communications

Matthew Gabrielse, President, Gabe's Construction Co., Inc.

Chris Her-Xiong, Executive Director/Principal, Hmong American Peace Academy

Justin Huebner, CEO and General Manager, Solarus

Gail Huycke, Community Development Broadband Outreach Specialist, University of Wisconsin-Madison, Division of Extension

Jose Martinez, Vice President, UAMOS

Chris Meyer, Director of Virtual Care and Telehealth, Marshfield Clinic Health System

Beth Meyers, State Representative (D-Bayfield)

Jeffrey Mursau, State Representative (R-Crivitz)

Brad Pfaff, State Senator (D-Onalaska)

Howard Marklein, State Senator (R-Spring Green)

Jean Pauk, Government Affairs Manager, TDS Telecommunications

Rachel K. Schemelin, E-Rate and Broadband Education Consultant, Wisconsin Department of Public Instruction

Brett Schuppner, General Manager, Reedsburg Utility Commission

Jennifer Shilling, Government Relations Manager, Dairyland Power Cooperative

Dr. Chet Strebe, Associate Vice President of Information Technology, Chief Information Officer, Northcentral Technical College

Chad Young, CEO/General Manager, Norvado

LETTER FROM PSC CHAIR, REBECCA CAMERON VALCQ



Broadband is an essential service – this fact cannot be overstated. People and organizations need access to high performance, affordable, resilient internet service in order to participate in modern society. Access to a high-speed internet connection and devices that can use that connection can unlock opportunities for communities across our state. Commerce, government, health care, education, tourism, agriculture all need fast, reliable, and affordable broadband to successfully reach their full potential. The lack of this critical service in some areas is holding our entire state back, and disproportionately impacts communities that are already at a social or economic disadvantage.

At the Public Service Commission, we house the Wisconsin Broadband Office (WBO). The WBO estimates that there are 650,000 of our fellow Wisconsinites without access to the infrastructure needed to bring 25 megabits per second download and 3 megabits per second upload (25/3) broadband into the home or business. Further, the WBO estimates that there are also 650,000 Wisconsinites who cannot afford broadband. Simply getting everyone access to 25/3 service may not be enough for Wisconsin residents to fully engage in all the benefits of broadband internet. Affordability and adoption (including broadband-capable devices and digital literacy) must be part of the solution.

As we saw with the COVID-19 pandemic, when school and work goes virtual, and children and parents are all video conferencing with their classrooms or employers at the same time, faster upload and download speeds are required to accommodate this increased usage. We need to focus on solutions that will last a generation. In the future, to ensure all continue to have access to high performance broadband, additional investment will be required to further improve the infrastructure and adapt to changes in how we use broadband.

Since Governor Tony Evers took office in 2019, Wisconsin has allocated or disbursed over \$289 million towards expanding broadband, including \$125 million allocated in June of 2022 and \$105 million in federal funding directed by the Governor for this purpose. In total, our investments have or are in the process of improving or expanding access to broadband infrastructure to 387,000 homes and businesses in our state. We've made tremendous progress in the past three years toward getting people access. Our work is ongoing but it is making a difference.

While simple access to infrastructure is important, that access doesn't help if the service is too expensive for people to afford. As part of the Bipartisan Infrastructure Law, the Affordable Connectivity Program (ACP) is making it more affordable for people in Wisconsin to obtain broadband service. Governor Evers and I have worked hard to promote the program to bring broadband within reach for our state's residents. For many, ACP is the difference between kids accessing their schoolwork from the safety and ease of their home or from the backseat of a car outside of a fast food restaurant. As I write this, more than 212,000 of our friends and neighbors have participated in the program and brought down the cost of service to where they can now participate in the benefits of broadband.

We've made tremendous strides in connecting our state. But the Governor and I know that this is not the time to take the foot off the gas pedal. We're looking ahead at federal broadband funding from the Bipartisan Infrastructure Law and the Digital Equity Act. We're working to leverage hundreds of millions of dollars of this federal funding to connect every community.

Governor Evers and I have made expanding broadband in Wisconsin a major priority. This Task Force report is part of the effort. I want to thank the tireless efforts of the Task Force members for their labor. I'd also like to thank the Wisconsin Broadband Office for their support of the Task Force. Our collective work will continue until all in Wisconsin are connected and can participate in the benefits of broadband internet.

Sincerely,

A handwritten signature in black ink, appearing to read "Rebecca CV", written in a cursive style.

Rebecca Cameron Valcq

Chairperson, Public Service Commission of Wisconsin

LETTER FROM TASK FORCE CHAIR, BRITTANY BEYER



It has been an incredible honor to chair the Governor's Task Force on Broadband for the past two years. The period of work this Task Force has conducted thus far, summer of 2020 through summer of 2022, has occurred during an acceleration and maturation of *interest* and *tools* available to address broadband access and adoption issues. This increase in capacity and interest, coupled with the emergence of investment in broadband infrastructure from Governor Evers and the federal government, will truly set the state on its rightful path into the 21st Century. As we have said many times, COVID truly revealed some of systemic issues that hinder true personal and community

prosperity, and equitable Broadband access certainly stands high on that list. I applaud the Governor for placing the focus on this issue at the right time.

In my conversations with many communities, associations, elected officials, and regional supports around the state, many are learning the details of this important issue of broadband as they go along. Not everyone has had the luxury of sitting in the area as an expert or was tasked with rapid learning, nor do they have the time. Given the possibility of broadband planning funding to a degree not seen before, it is important to concentrate on the *tools* that are necessary reaching the hands of decision makers.

The heightened interest in solving this issue, from local on up to federal agencies, is crucial at this point. All levels of our governmental leadership need to be aware of the issue, and they need to be pursuing the broadband resources necessary to close any gaps. The private sector partners on the Task Force voiced true need to look at the policies that will come into play given the shifting landscape. Therefore, the state leadership *must* focus on the long-term guidance needed for this piece of infrastructure that will only become more important for personal and community success.

Like the first cycle of this work, equity has come up in our conversations many times over. Maintaining an equity lens is incredibly important in this work. If we are simply building out broadband infrastructure without thinking about how certain barriers (whether they are economic, age, ability, language, location, or others) affect access, we are not doing our job. The insistence that the "unusual suspect" is at the table for decision making is lifted for that reason. Making sure to have as wide a perspective as possible weighing in on decisions, and making sure they feel welcome and equal at the table, will make a difference.

There were plenty of areas of exploration that were simply not possible to explore within the time we had together this year. This report should give the Public Service Commission and the Broadband Office plenty to ponder in its five-year strategy connected to BIL funding sources. I look forward to seeing how Wisconsin uses this moment in history to become the 21st Century leader it is meant to be.

Forward-

A handwritten signature in black ink that reads "Brittany Beyer".

Brittany Beyer

Chair, Governor's Task Force on Broadband

ACKNOWLEDGEMENTS

We would like to acknowledge several individuals for their participation and effort in making this Task Force a success.

Thank you to our guest speakers, including:

- **Danielle Jones**, Director of Rural Initiatives, Wisconsin Economic Development Corporation
- **Gerard Klein**, Director, City-County Information Technology Commission, Marathon County
- **Dan Dargel**, Network Architect, UW-Platteville
- **Joe Ruth, Legal Counsel**, Wisconsin Towns Association
- **Toni Herkert**, Government Affairs Director, League of Wisconsin Municipalities
- **Benya Kraus**, Co-Founder & Minnesota Executive Director at Lead for America
- **Karen Stettler, Roy Fried, and Jim Hentges** from the Town of Cross in Buffalo County

And thank you to:

Kristin Runge, Ph.D., Communication Research Specialist at the University of Wisconsin-Madison, Division of Extension for her help with facilitation, exploration, and coordination of Task Force meetings.

Wisconsin Broadband Office and other Public Service Commission of Wisconsin staff for their work on Task Force meetings and this report, including: **Milena Bernardinello, Kathy Endres, Laura Fay, Alyssa Kenney, Tara Kiley, Catherine Kittle, Dennis Klaila, Jason Kuhn-Medina, Matthew Marcus, Jaron McCallum, Kristy Nieto, Jennifer Smith, Colter Sikora, and Rory Tikalsky.**

TASK FORCE PROCESS AND METHODOLOGY

The Governor's Task Force on Broadband Access (Task Force) was established by Governor Tony Evers in Executive Order #80 on July 14, 2020, and he appointed its members. The Task Force's charge was:¹

"Advise the Governor and Wisconsin State Legislature on broadband actions and policy, including strategies for successfully expanding high speed internet access to every residence, business, and institution in the state; initiatives for digital inclusion; and pathways to unlocking and optimizing the benefits of statewide, affordable access to broadband for all communities in Wisconsin"

The 2022 Task Force focused on recommendations to support active network building and community alignment, as articulated on pg. 42 of the 2021 report:²

"Wisconsin can support the significant number of local communities seeking to expand broadband access, affordability, and adoption and at time lacking the human, financial, or technical resources needed to pursue a project or plan. Partnerships, coalitions, programs, and resources that could support communities pursuing broadband access, affordability, and adoption should be considered."

This follow-up to the initial report began with a facilitated Task Force process in January 2022 and concluded in June 2022. The work of the Task Force was coordinated by a five-member team which included Task Force Chair and Executive Director of Grow North, Brittany Beyer, the State Broadband and Digital Equity Director, Alyssa Kenney, the Office of Broadband Strategic Initiatives Coordinator, Jaron McCallum, UW Extension Broadband Specialist and Professor of Community Development, Gail Huycke, and UW Extension Community Economic Development Specialist, Dr. Kristin Runge, who served as Task Force facilitator. The coordination team met weekly to plan the meeting agenda, invite speakers, assign work to the Task Force, identify potential resources useful to the Task Force, and monitor progress towards Task Force goals.

¹ <https://evers.wi.gov/Documents/EO/EO080-BroadbandTaskForce.pdf>

² <https://psc.wi.gov/Documents/broadband/2021%20Governors%20Task%20Force%20on%20Broadband%20Access.pdf>

A total of seven Task Force meetings and two office hours work sessions were held. From January to early June, each meeting theme focused on a different aspect of active network building. From mid-May to June, meetings focused on identifying and refining recommendations. Prior to each meeting during the information gathering phase of the Task Force (February through early May) members reviewed and responded to a series of advance preparation questions focusing on different aspects of active network building. These answers were collected via an anonymous Qualtrics survey, summarized, and then reviewed at each meeting. After an initial draft of recommendations in early May, the Task Force members were asked to rate each potential recommendation. The ratings were then used as the basis for discussion when Task Force members refined recommendations. The two office hours work sessions were held to prepare documents needed to write the 2022 Task Force report.

Meetings were designed with an appreciation of the complexity of the issue and to provide room for diverse viewpoints. In the first portion of each meeting the Task Force heard presentations from invited guest speakers on topics relevant to the day's topic. In the second portion of each meeting, Task Force members engaged in a facilitated discussion related to both the day's presentations and the pre-work that was assigned via Qualtrics. Discussions were designed to capture Task Force member knowledge and were structured such that participants initially met as small groups before discussing as a whole group. Public Service Commission (PSC) staff members served as facilitators during the small group discussions, recording comments and input onto a publicly viewable Google document that served as a temporary workspace. The Google documents were downloaded for preservation, and then used as a resource during the writing of recommendations.

Due to the ongoing nature of the COVID-19 pandemic, the Task Force continued to meet virtually in its second year as it had during its first year. Meetings were conducted via Zoom, and a link was made available as part of the publicly posted agenda. As with the first year of the Task Force, virtual meetings provided both affordances and challenges. Meeting virtually allowed participation across wider geographies, and allowed Task Force members a greater degree of ease in fitting meetings into their regular schedules. Meeting virtually also allowed members of the public to observe and comment without the burden of travel. Challenges did occur, however. As with the first year of meetings, there were instances when faltering broadband connectivity impaired participation. Additionally, virtual meetings did not provide the opportunity for Task Force members to chat informally as would normally occur during an in-person meeting.

PRESENTATIONS TO THE TASK FORCE

January 2022

- Task Force orientation
- Review of the charge to the Task Force

February 2022

- Remarks by Public Service Commission Chairperson Rebecca Cameron Valcq
- Public Records Law Training
- Active Network Building and Community Alignment

March 2022

- Wisconsin Economic Development Corporation Broadband Connectors Pilot Program Summary
- National Telecommunications and Information Administration Building Capacity through Broadband Projects
- Current Regional Broadband Activities via the nine Regional Economic Development Organizations and Regional Planning Commissions

April 2022

- League of Wisconsin Municipalities and Wisconsin Towns Association
- National Digital Extension Education Association
- American Connection Cohorts run by Lead for America

May 2022

- Infrastructure Investment and Jobs Act Updates from Wisconsin Broadband Office
- Town of Cross (Buffalo County)

June 2022

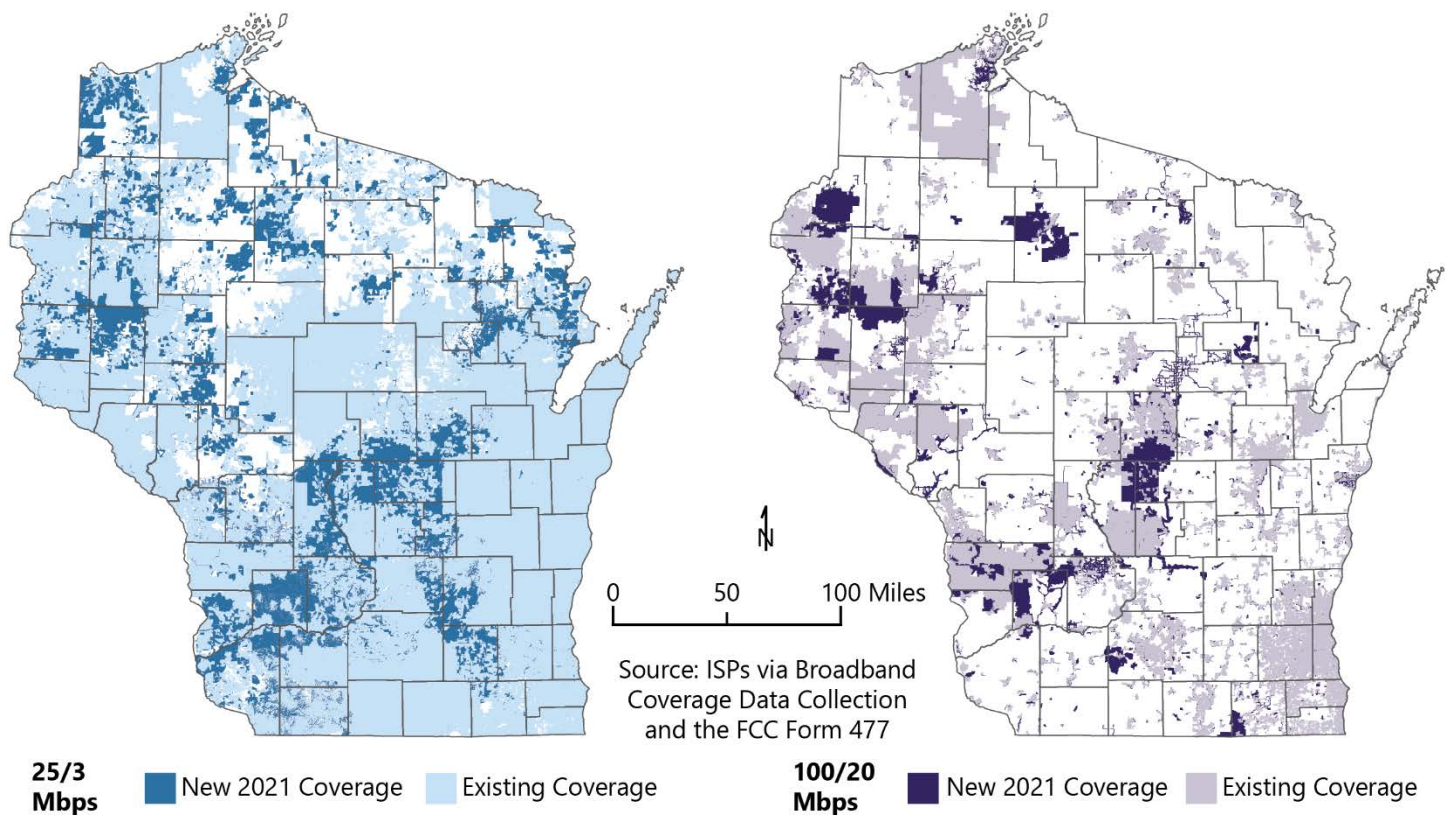
- Group work related to recommendations

CURRENT STATE OF BROADBAND ACCESS

In the [2021 Broadband Deployment Report](#), the Federal Communications Commission (FCC) estimated that 6.8% of the population in Wisconsin (or 394,000 people) lack access to at least one fixed, terrestrial broadband service with a speed of 25/3 megabits per second (Mbps) or better, compared to the national average of 4.4%.³ Of those 394,000 people, 385,000 are in rural areas, which accounts for 21.8% of rural residents in Wisconsin lacking access, compared to the national rural average of 17.2%. In addition, these estimates are likely underreported due to the FCC's Form 477 coverage data reporting mechanism, which was used for these estimates. It is also important to note that the FCC has not released a 2022 Broadband Deployment Report and that the 2021 report, and subsequent figures, were released in January of 2021 and reflected in the last report.

The Task Force recognizes that these FCC figures are likely significantly underreported relative to the reality Wisconsinites are experiencing on the ground. According to estimates in a study performed by [BroadbandNow](#), 670,592 Wisconsinites lacked access to a fixed 25/3 Mbps service.⁴

Despite a considerable number of Wisconsinites still lacking service, a sizable amount of locations in Wisconsin have received improved service over the past year. The below change maps show areas that have had their service levels improve to 25/3 Mbps and 100/20 Mbps speeds.

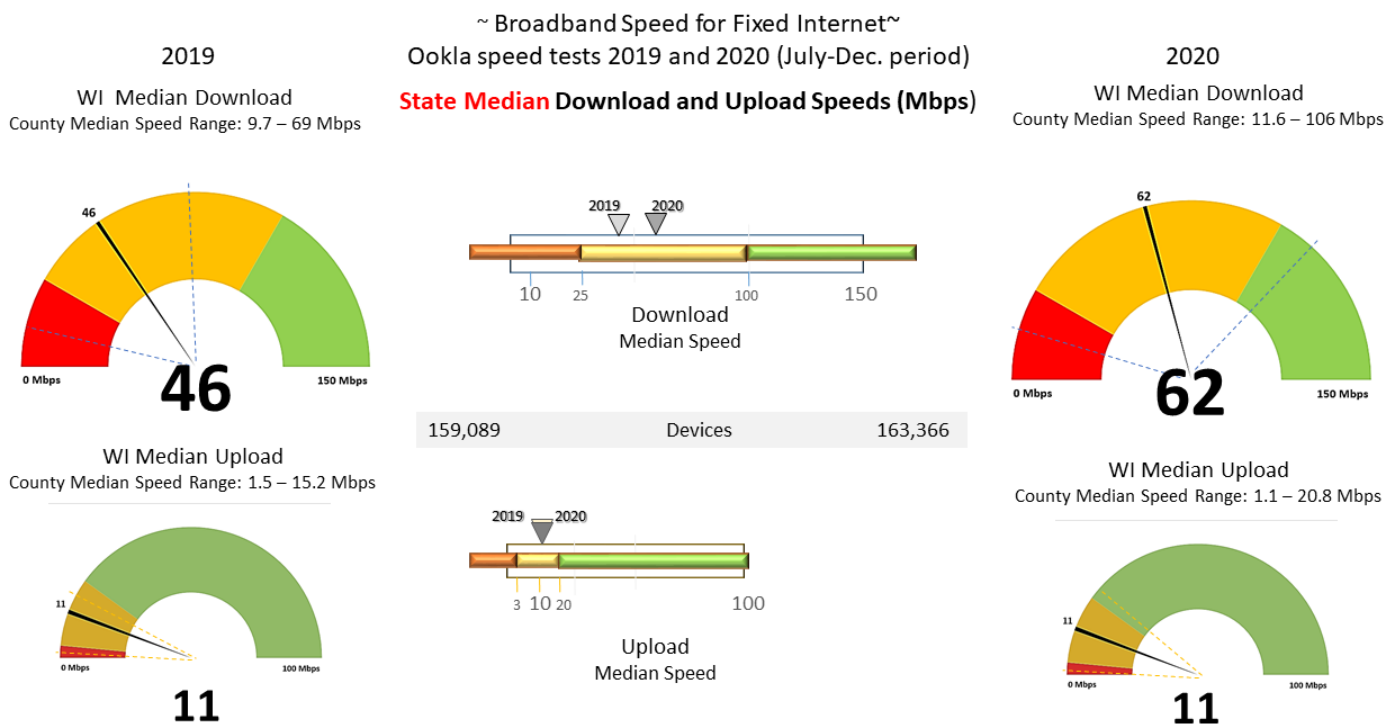


³ Broadband Progress Reports of the Federal Communications Commission [Broadband Progress Reports | Federal Communications Commission](#), <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/fourteenth-broadband-deployment-report>

⁴ "BroadbandNow Estimates Availability for all 50 States: Confirms that More than 42 Million Americans Do Not Have Access to Broadband" | <https://BroadbandNow.com>

As the number of unconnected and unserved Wisconsin residents has been decreasing, Wisconsin’s download speeds have been increasing from 2019 to 2020, according to Ookla speed test data. Wisconsin’s median download speed in 2019 was 46 Mbps and rose to 62 Mbps in 2020, an increase of 35%. Wisconsin’s median upload speed remained at 11 Mbps in the same time period. More Wisconsin residents have access to broadband and their internet speeds are increasing.

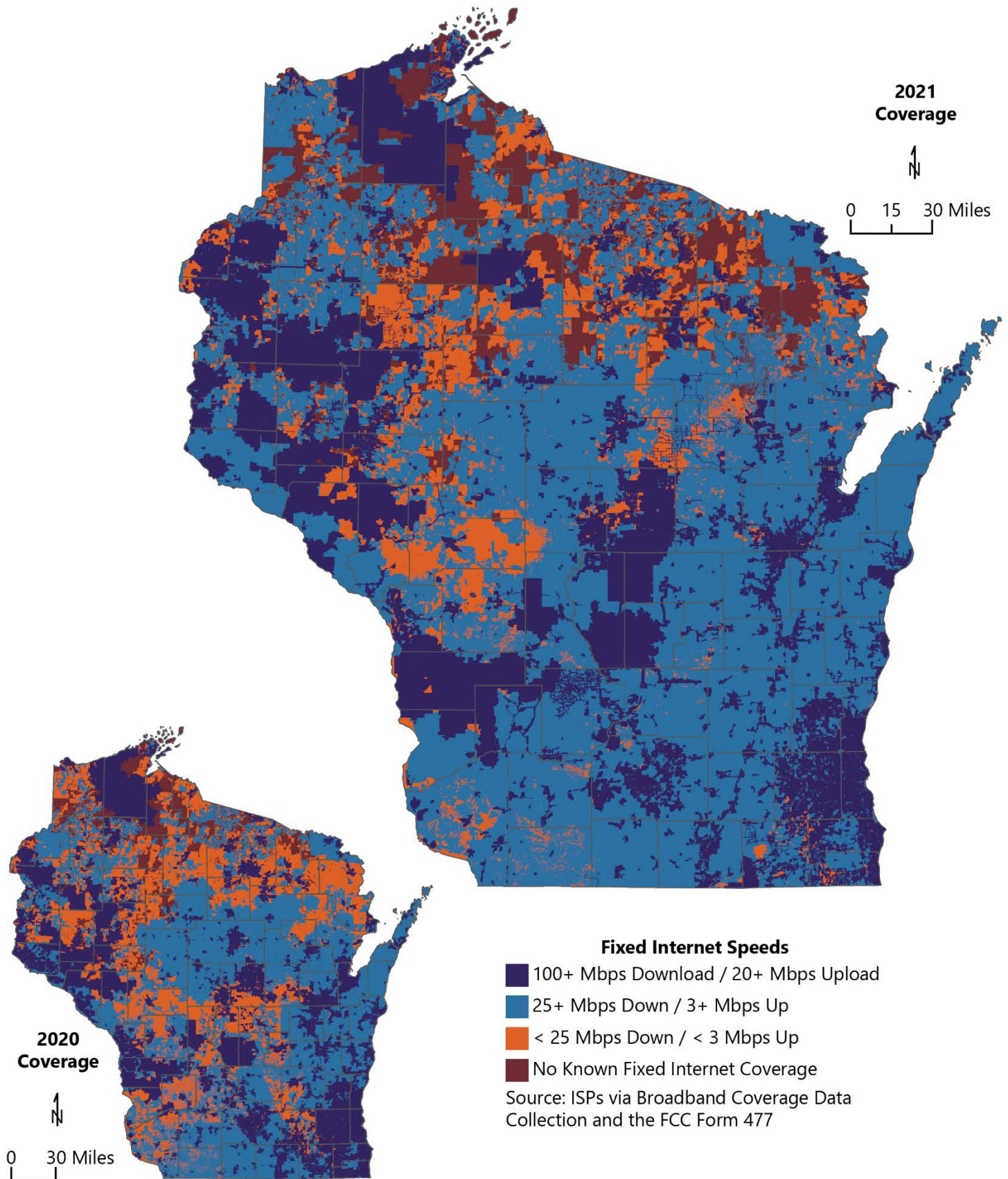
A similar trend has occurred at the county level, with the overall range of county median speed levels also increasing. In 2019, the lower county median download value was 9.7 Mbps and increased to 11.6 Mbps in 2020. In that same time period, the higher county median download value increased from 69 Mbps to 106 Mbps. Similarly, the higher county median upload value increased from 15.2 Mbps to 20.8 Mbps. However, the changes in median speed didn’t occur in the same direction across all counties. The 2020 county median shows a larger range between lower and higher speed for both download and upload, as some counties saw an increase in speed, while others saw a decrease.



Source : NBAM – BroadbandUSA Community Report – WI December 2020 and 2019

WISCONSIN'S

IMPROVING BROADBAND COVERAGE

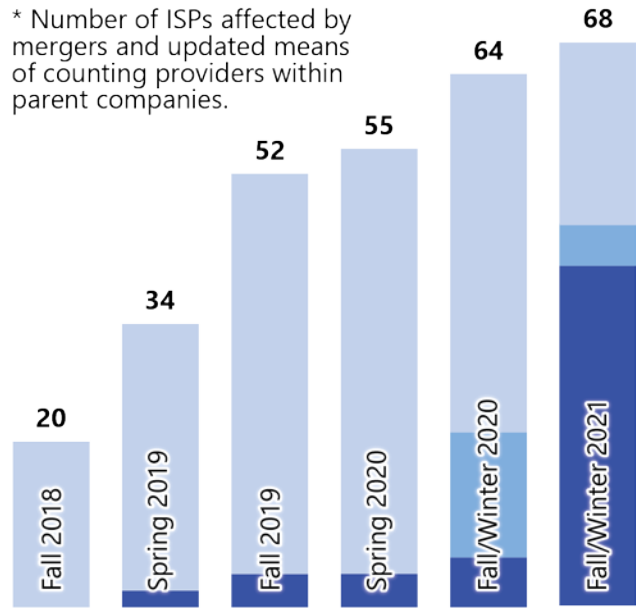


Quality broadband coverage data is at the heart of gathering accurate figures for unserved and underserved Wisconsin residents. To that effect, the PSC's Wisconsin Broadband Office (WBO) has long been leveraging its relationships with ISPs across the state in an effort to gather more accurate broadband coverage data. The Wisconsin Broadband Office's Broadband Coverage Data Collection program is a voluntary program where providers can submit data to be included in the [Wisconsin Broadband Map](#) (WBM). This program was launched as a partial solution to the longstanding and well documented issues with the FCC's Form 477 data collection. With the FCC's new [Broadband Data Collection](#) program launched and updated, more granular maps expected later this year, those issues with the old Form 477 data collection are expected to be reduced. Efforts at the Wisconsin Broadband Office will be made to work in sync with new process at the FCC so as not to create extra burden for data submitters, while ensuring the state has the best data available for decision-making.

95 - 105
Estimated Residence-Oriented ISPs
in Wisconsin w/Fixed Internet*

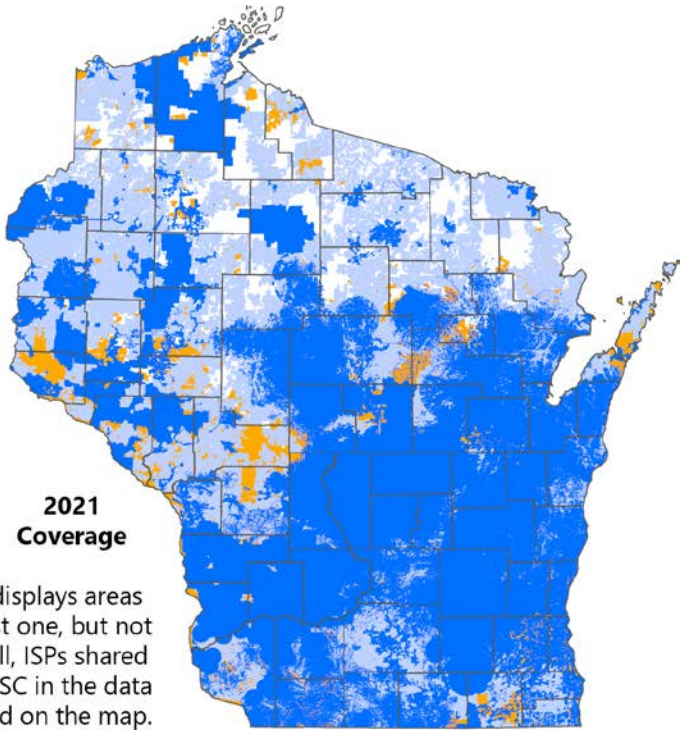
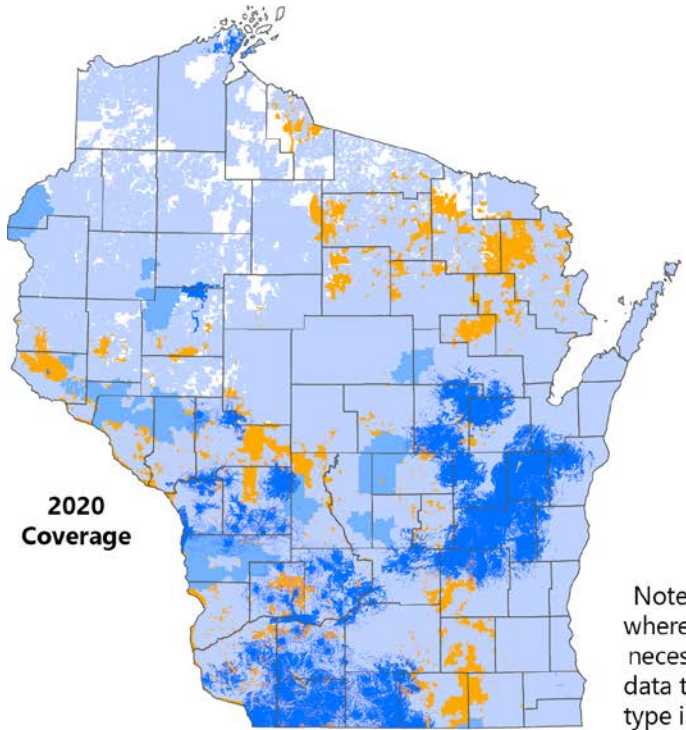
91
ISPs w/Fixed Internet on WBM
(Fall 2021/Winter 2022 Update)

* Number of ISPs affected by mergers and updated means of counting providers within parent companies.



Submitted Data Type, by Provider

■ Geospatial ■ Geospatial & Tabular ■ Tabular



Note: Map displays areas where at least one, but not necessarily all, ISPs shared data to the PSC in the data type indicated on the map.

Best Available Submitted Data Type, by Area

0 50 100 Miles

■ Geospatial ■ Mixed Geospatial & Tabular ■ Tabular ■ Tabular from FCC □ No Coverage

Source: ISPs via Broadband Coverage Data Collection and the FCC Form 477

MIDDLE MILE CONSIDERATIONS

Later in this report, the Task Force makes several recommendations relating to middle mile infrastructure. In general, the Task Force believes that better coordination of construction and use of middle mile routes within the state could lead to a more efficient use of scarce fiber resources. Below are some challenges and opportunities related to the coordination and construction of middle mile facilities.

Middle Mile Network:

A middle-mile network is the physical infrastructure that connects between the internet backbone and the facilities of the last mile internet provider. A middle-mile broadband network does not connect to individual retail customers.

There are a few general points that can be made about middle mile fiber internet routes and the fiber-optic cables that are buried alongside roads. First, not all of the fiber-optic cable buried in the rights-of-way along rural roads provides internet connectivity to the areas that the fiber route transits. Among the variety of uses, inter-city fiber routes can carry telecommunications toll traffic, telecommunications signaling traffic, cable television programming, and mobile commercial wireless traffic backhaul. Fiber routes designed for these other purposes are often built without access points or traffic aggregation points that are necessary to connect nearby service locations to an internet service provider. In part, it may be a matter of cost. A fiber route without the access points and fiber capacity to connect locations along the path of the fiber route may be less expensive. But it is also true that the carriers that design and build those fiber networks typically do so to address a known set of existing and potential purposes, and rarely share that fiber network resource with competitors.

Second, several providers design fiber routes with a large amount of spare or unused capacity. For example, the 911 network uses a significant fiber network to ensure continuous operation in all circumstances. That system is typically engineered to operate at well below 50% capacity during peak traffic. A combination of spare capacity on channels in use, unused fiber strands in a cable, and multiple routes connecting traffic provide a measure of system security or resiliency. Resiliency is a desirable network feature that facilitates uninterrupted service when a cable is cut during road construction or during an adverse weather event. As a result, a significant portion of the private fiber network that has been built is not available for alternative uses even though it may appear to be unused or underused at a particular point in time.

Third, a middle mile route that provides a connection between the larger nation-wide internet system and data centers on the one end, and the local systems connecting individual subscribers at the other end, is an expensive undertaking compared to other fiber routes and other internet technologies and applications. In areas with greater population density, the cost of that backbone network can be passed to internet users as part of the monthly service charges. In areas of the state with low population density, the expense of a connecting middle mile network cannot be passed to subscribers without creating a very high monthly bill.

Finally, the distinction between middle mile and last mile routes is often imprecise. Middle mile connections and last mile connections are often found in the same construction projects. A middle mile project may strengthen the capacity or operating parameters of an existing local internet system, or it may be a critical component for future last mile projects. An out of date or inadequate middle mile connection can be a choke point that limits the speed and capacity of an otherwise excellent last mile broadband service available at the

local level. Thus, the service issues with middle mile and last mile connections overlap, and a provider will often address both in order to achieve the desired broadband product.

In sum, because middle fiber routes are privately-owned, expensive, and often tailored to specific applications, coordination of construction to capture efficiencies and thereby reduce the construction costs for all users is rarely an available option. Construction of fiber routes is undertaken by an individual service provider to address a known set of existing and potential purposes. In some instances, a service provider could lease dark fiber or sell a service providing transport of a communications service. There is no law or rule that prevents one provider from sharing its fiber network resource with competitors. But at best, this means that fiber networks are not designed and built for use by multiple competitors at rates that would place each competitor on an even footing.

In the current FY 2022 Broadband Expansion Grant round, the Commission invited applicants to propose grant applications that include middle mile fiber routes. A middle mile route that included some public funding could potentially reach underserved areas of the state under terms that provided for a measure of sharing of available fiber access. The Commission did receive some grant applications that proposed middle mile fiber routes and awarded 11 projects constructing middle mile. The experience of the current grant round may produce ideas on how to best coordinate the build out of shared-use fiber-optic networks in future grant proceedings.

ON THE HORIZON: FEDERAL FUNDING FOR INFRASTRUCTURE, ADOPTION, AND EQUITY

Recent authorizations of funding at the federal level have elevated opportunities for states to implement broad-reaching efforts to meet broadband access, affordability, and adoption goals. Under federal coronavirus relief legislation (the Coronavirus Aid, Relief, and Economic Security [CARES] Act, the American Rescue Plan Act [ARPA] and subsequently the Bipartisan Infrastructure Law [BIL]), funding is being allocated to individuals to support broadband affordability, and states for investment in broadband access and adoption. BIL – also referred to as the Infrastructure Investment and Jobs Act (IIJA) – is the largest infusion of federal dollars for state broadband initiatives to date and will have far reaching impacts for the state of Wisconsin.

In 2021, Governor Evers allocated \$100 million in ARPA State and Local Fiscal Recovery Funds to broadband access. The Commission awarded grants for 83 broadband expansion projects across the state with these funds. BIL provides \$65 billion nationally to connect all Americans to high-speed broadband internet that is affordable and reliable. BIL created several programs that support broadband planning, infrastructure, and adoption for states. Wisconsin will administer funding under the Broadband Equity, Access & Deployment (BEAD) program and Digital Equity Act (DEA) programs. BIL also provides funding to the National Telecommunications Information Administration (NTIA) and U.S. Department of Agriculture (USDA) for federally administered broadband programs, as described below. For funding available under BIL, planning and implementation at state and federal levels are starting in earnest, with funding being allocated generally from 2023 through 2028.

BROADBAND EQUITY, ACCESS & DEPLOYMENT PROGRAM

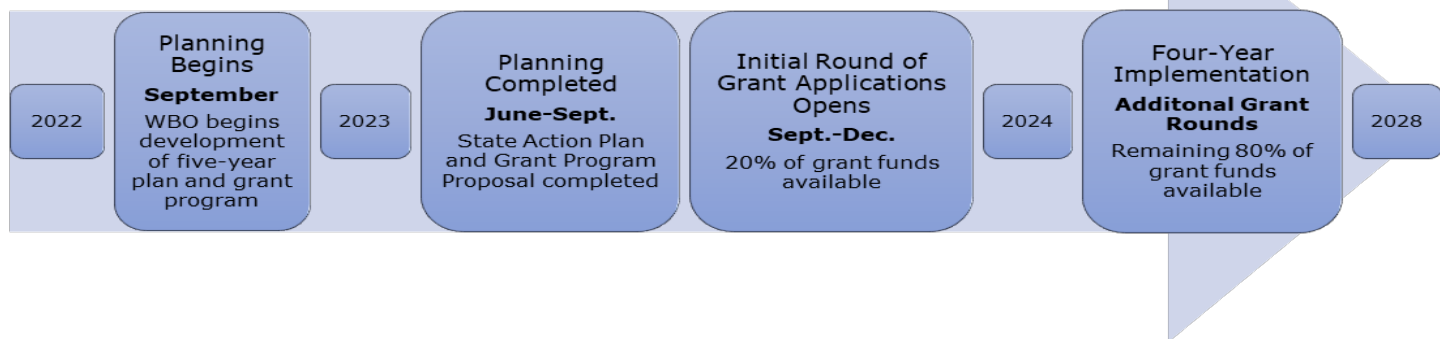
The Broadband Equity, Access and Deployment (BEAD) program is the largest funding program in BIL that provides \$42.5 billion in funding to states for building broadband infrastructure and increasing adoption of reliable internet. Wisconsin's allocation will be determined through a formula based on the state's proportion of locations lacking access to broadband service, calculated using FCC maps, which are not yet complete. However, based on currently available data, Wisconsin could expect an allocation of approximately \$700 million to \$1.2 billion under BEAD.

The Governor has designated the PSC as the administrator of the BEAD program. Funding will be allocated to the PSC in stages and awarded to eligible applicants through a competitive process estimated to begin in late 2023 and continue through 2028.

BEAD prioritizes fiber internet technology to connect *unserved* locations that have either no internet or speeds below 25/3 Mbps, and secondly prioritizes *underserved* locations with less than 100/20 Mbps. Thereafter, other eligible uses include connecting community anchor institutions lacking 1 Gbps broadband capacity and digital equity and adoption efforts. For more details and resources visit NTIA's [BEAD program website](https://broadbandusa.ntia.gov/broadband-equity-access-and-deployment-bead-program).⁵

⁵ <https://broadbandusa.ntia.gov/broadband-equity-access-and-deployment-bead-program>

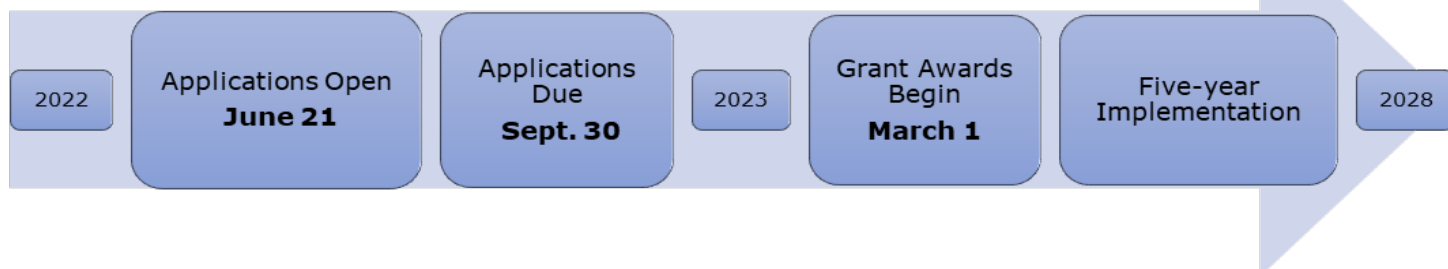
Estimated Broadband Equity, Access, and Development Program Timeline



ENABLING MIDDLE MILE BROADBAND INFRASTRUCTURE PROGRAM

The Enabling Middle Mile Broadband Infrastructure Program is a \$1 billion competitive grant program that will be administered by NTIA to expand middle mile internet infrastructure across the country. Middle mile refers to high-capacity fiber internet lines that carry data between local networks that connect to households (“last mile”) and large-scale national networks (“backbone”). Applications for middle mile grant funding are open now and are due September 30th, 2022. Grants will be awarded no earlier than March 1st, 2023, and the program will run through 2028. For more details and application instructions, visit NTIA’s [Enabling Middle Mile Broadband Infrastructure Program website](#).⁶

Estimated Enabling Middle Mile Broadband Infrastructure Program Timeline



BROADBAND RECONNECT LOAN AND GRANT PROGRAM

The ReConnect Loan and Grant Program is an existing program administered by USDA to fund construction, equipment, and facilities for the expansion of high-speed internet access in rural areas. BIL allocated an additional \$2 billion in funding for this program. BIL also directs \$74 million to the USDA’s Rural Utilities Service (RUS) for the Rural Broadband Access Loan and Loan Guarantee program, which also supports the development of broadband infrastructure in rural areas. USDA has not yet released guidance for the next grant and loan application cycles. For more details visit the [USDA’s program website](#).⁷

⁶ <https://broadbandusa.ntia.gov/enabling-middle-mile-broadband-infrastructure-program>

⁷ <https://www.usda.gov/reconnect>

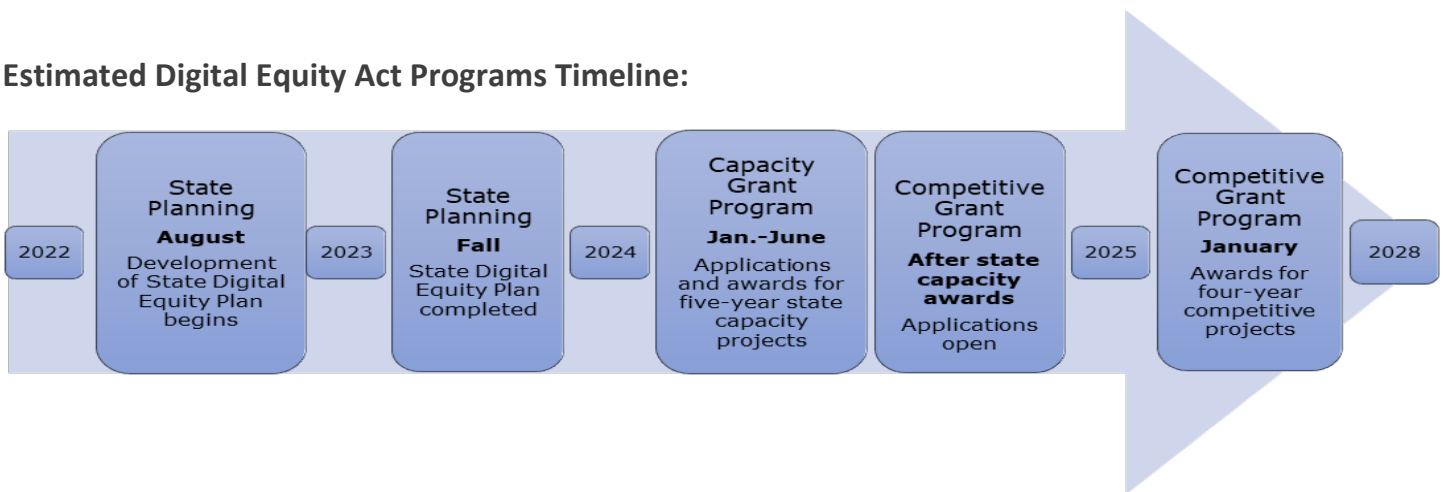
TRIBAL BROADBAND CONNECTIVITY PROGRAM

The Tribal Broadband Connectivity program is an existing \$1 billion program administered by NTIA that is receiving an additional \$2 billion in funding from BIL to bring high-speed internet to tribal lands. The program is currently processing applications and awards from the previous grant cycle. For more information visit BroadbandUSA.ntia.gov.⁸

DIGITAL EQUITY ACT PROGRAMS

The Digital Equity Act (DEA) consists of three separate planning and implementation grant programs that promote digital equity and inclusion. The State Planning Program will provide funding to states based on a formula for the development of a state digital equity plan. Wisconsin's estimated share of planning funds is approximately \$950,000. The State Capacity Grant Program will provide funding to states through a formula to implement their digital equity plan through a state-designed grant program. Wisconsin's estimated share of capacity grant funding is approximately \$24 million to \$30 million over five years. Additionally, a Competitive Grant Program administered by NTIA will support digital equity projects nationally over a five-year period. For more details, visit NTIA's [DEA programs website](#).⁹

Estimated Digital Equity Act Programs Timeline:



AFFORDABLE CONNECTIVITY PROGRAM

BIL established the Affordable Connectivity Program (ACP) as a successor to the Emergency Broadband Benefit and provided \$14.2 billion nationwide for affordability assistance. The ACP helps low-income families pay for internet service by providing monthly subsidies. Eligible households can receive up to \$30 per month, and households in qualifying Tribal areas can receive \$75 per month. For more information see FCC's [Affordable Connectivity Program website](#).¹⁰

⁸ <https://broadbandusa.ntia.doc.gov/resources/grant-programs/tribal-broadband-connectivity-program>

⁹ <https://broadbandusa.ntia.gov/digital-equity-programs>

¹⁰ <https://www.fcc.gov/acp>

CURRENT STATE OF DIGITAL EQUITY

The Task Force discussed the fact that the availability of broadband alone is not enough to successfully expand high-speed internet access to every residence. Affordable service, internet adoption support, availability of low-cost devices, technology support and digital literacy skills are needed to make full use of the internet. This category of goals and activities related to internet and technology access is referred to as Digital Equity. The National Digital Inclusion Alliance defines digital equity as a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy.¹¹ Digital equity is necessary for civic participation, economic opportunity, education, and access to essential services.

ADOPTION

Access to broadband infrastructure alone is not enough for all Wisconsin residents to make full use of the internet. Adoption relates to the actions of using the internet to holistically support the well-being of a person or group of people. Data from the U.S. Census Bureau's American Community Survey (ACS) demonstrates that low-income households have the lowest rates of broadband adoption and device ownership of any demographic group. In 2019, the median household income in Wisconsin was \$64,168. Low-income households, with annual income of less than \$20,000 comprise 13.4% (315,000) of all Wisconsin households. Of all low-income households, 42.2% (133,000) did not have a subscription to broadband of any type, significantly higher than the nationwide average (34.9%) and three times higher than the 12.8% of Wisconsin households with annual incomes between \$50,000 and \$75,000 that did not have a subscription to broadband of any type.¹²

Low adoption in a community may be associated with several factors. Lower adoption percentages are related to lower incomes. In addition, older adults in Wisconsin often fall behind younger counterparts in adopting digital tools. According to 2019 ACS data, 30% of Wisconsin adults aged 65 and older did not have a subscription to any type of broadband service at home, a rate three times higher than the rate for all other adults in the state. Further, older adults are less likely to own a computer or a smartphone than other adults.

Historically, white Americans have adopted broadband at higher rates than Black Americans, Latinx, and Native Americans. ACS data indicate one in four Black Americans (24%) and one in five Native Americans (21%) did not have any type of broadband subscription at home, compared with one in six Latinx (16%), one in eight white Americans (12%) and one in twelve Asian Americans (8%). Latinx and Black Americans with a broadband subscription are more likely than white Americans to rely on wireless data plans only for internet service. Compared to national figures, the lack of any type of broadband subscription at home is higher for Black Wisconsin residents (US 21%) and lower for Native American and Latinx people in the state (US 27% and 17%, respectively).¹³

In the ACS 2020 5-year estimate, the data show nearly 15% of Wisconsin households did not subscribe to internet service at home. Further, over 500,000 households did not have a desktop or laptop computer.¹⁴ Since 2018, the data shows a steady decline in those who use their smartphone and cellular / mobile service as their

¹¹ <https://www.digitalinclusion.org/>

¹² <https://data.census.gov/cedsci/table?g=0400000US55&tid=ACSST5Y2020.S2801>

¹³ <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/>

¹⁴ <https://data.census.gov/cedsci/table?g=0400000US55&tid=ACSST5Y2020.S2801>

primary means of online access at home. With the ongoing impact of COVID-19 and the increasing demands for more data and faster speeds many households are finding smartphones and cellular plans insufficient for their needs.

As part of a comprehensive survey conducted by Wisconsin’s Department of Public Instruction, 22.2% of students with home internet access responded that they did not have acceptable internet performance to participate in virtual learning and an additional 8% (38,000 students) did not have access to a device.¹⁵ These disparities were further evident among different racial, ethnic, and income groups. In fall 2020, only 85% of households identifying as Black American, Latinx, or of Hispanic origin reported internet was always or usually available for child education purposes, compared to 92% for white households and 98% for Asian households. Across income levels, households with incomes below \$35,000 reported internet was always or usually available for child education purposes 84% of the time, compared to 94% for households with incomes above \$35,000.

Disparate access to broadband and devices during the COVID-19 pandemic multiplied inequities faced by households of color, older adults, and households with low incomes, and limited their ability to meet their critical needs. Since the beginning of the COVID-19 pandemic, cellular internet subscriptions and devices have become increasingly insufficient to meet the work, educational, and connectivity needs of Wisconsin residents.

An emerging theme related to digital equity in Wisconsin is the need for more information regarding the barriers to internet access for underconnected households. Underconnected households are often reliant on hot spots, cellular plans with data limits, and public Wi-Fi. Their service may be slow, unreliable or has been limited or cut off due to trouble with payment. These households may benefit from digital inclusion programs and activities.

Underconnected

A household that has physical access to broadband service but lacks full access due to cost of service, quality of devices or internet service, limits on data, policies or practices of the provider, and/or need for digital literacy skills or devices.

AFFORDABILITY

Approximately equal to the broadband access challenges in the state, an estimated 650,000 people do not subscribe to home internet because of cost. This number is estimated from studies from Pew Charitable Trust, [BroadbandNow](#), and the 2021 [report from the Education SuperHighway](#) “Bridging the Broadband Affordability Gap”.¹⁶ Access to the physical infrastructure and cost impact an equal number of people in the state.

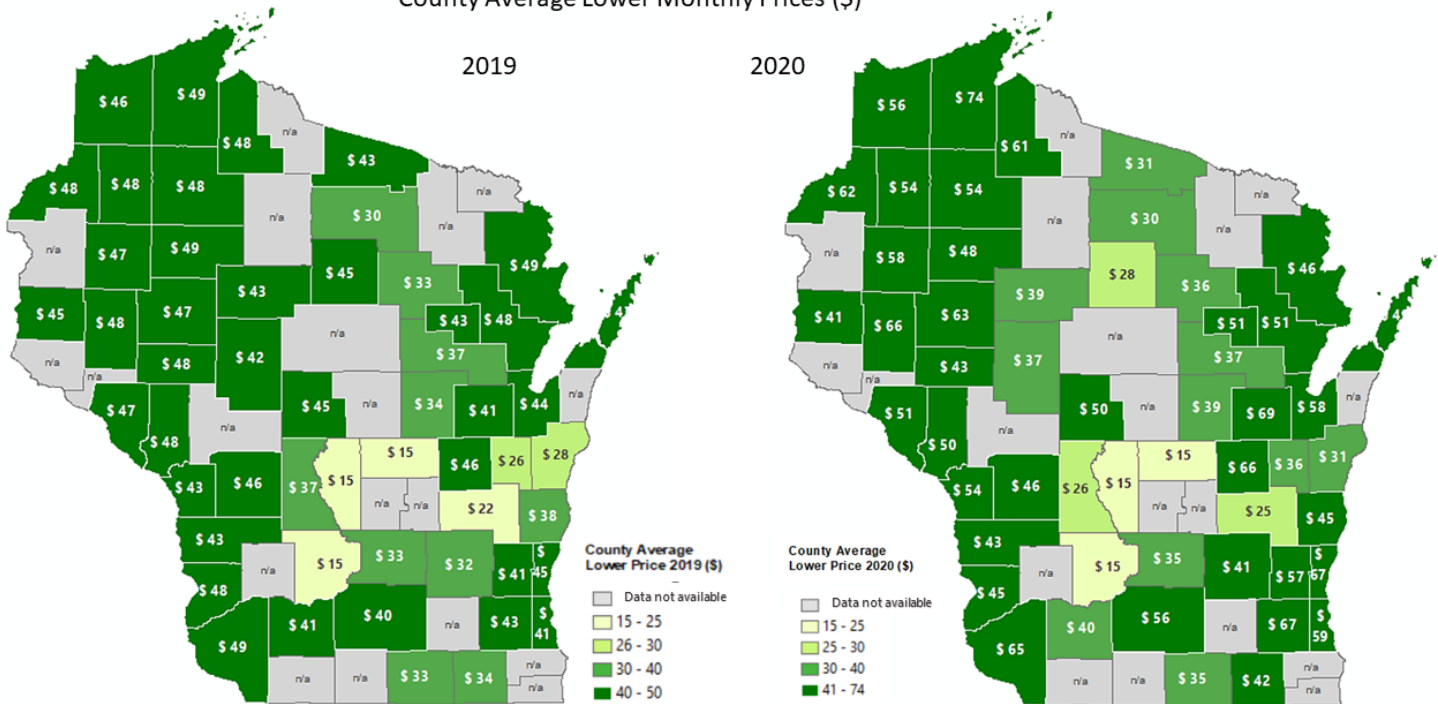
The Department of Public Instruction (DPI) survey of K-12 students also reflects this one-to-one ratio with about equal numbers of students unable to access the internet as students that do not have internet at home because the cost is too high. Pew research has found cost to be the number-one barrier to internet adoption.

Since the 2021 Task Force report the average monthly cost of the lowest or entry level terrestrial broadband plan has increased from \$41 per month to \$50 per month in the state. The state average for lower priced broadband terrestrial plans, increase 22% from 2019 to 2020. A deeper review of the data shows significant geographic variability in price changes and absolute cost. In Wisconsin, 35 counties had an increase in the

¹⁵ <https://wisedash.dpi.wi.gov/Dashboard/dashboard/22066>

¹⁶ [No-Home-Left-Offline-Report_EducationSuperHighway2021.pdf](#)

~ Broadband Cost for Terrestrial Plans ~
County Average Lower Monthly Prices (\$)



lowest-tier monthly subscription price, 12 counties had a decrease in price, six counties had no change and 19 counties had insufficient data for analysis.

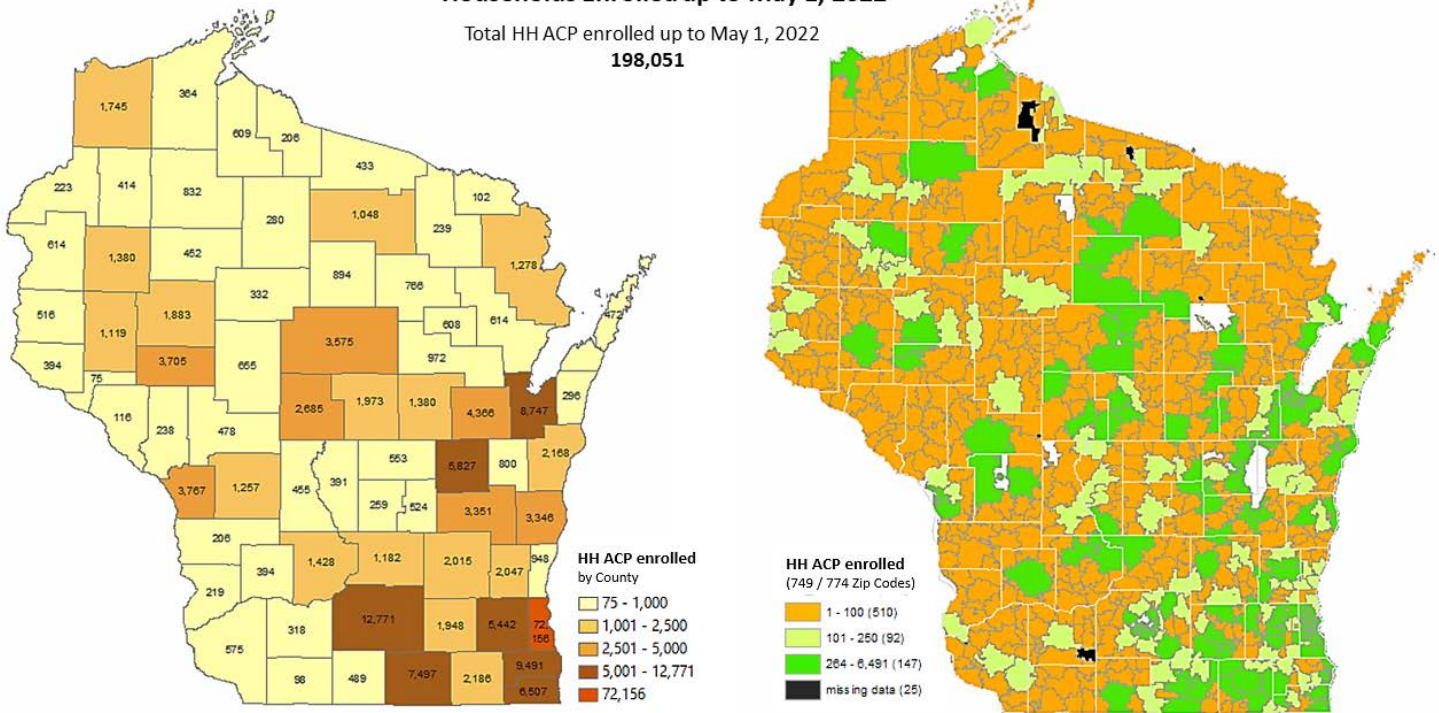
For many years, several providers have offered special programs for low-income households or low-income K-12 students. Some examples include Charter’s Spectrum Internet Assist, AT&T’s Access AT&T, Cox’s Connect2Compete, Comcast’s Internet Essentials, and other low-income assistance program. Many of these programs are the result of obligations imposed on Internet Service Providers to offer affordable broadband plans as a condition for approving mergers. Some plans have extended beyond the required time period. The eligibility, limitations, and geography vary among the programs. The cost of service ranges from \$10 to \$40 per month for an eligible household. Data regarding the number of people enrolled in these programs is not publicly available and Internet Service Providers are not required to share enrollment information with the state.

Created by Congress as part of BIL, on December 31, 2021, the FCC launched the Affordable Connectivity Program (ACP). This \$14 billion investment in broadband affordability will help ensure households can afford the internet connections they need for work, school, health care and more. The ACP provides a discount of up to \$30 per month to internet service for eligible households and up to \$75 per month for households on qualifying Tribal lands. In some locations, eligible households can also receive a one-time discount of up to \$100 to purchase a laptop, desktop computer, or tablet from participating providers if they contribute toward the purchase price. Over 100 fixed and mobile internet providers are participating in the state.

The Wisconsin Broadband Office estimates Wisconsin has approximately 600,000 households eligible for the ACP benefit. As of June 13, 2022 the number of enrolled households in the benefit is 215,088. Wisconsin has remained in the top half of states in the nation for the rate of enrollment since the program’s inception. In addition to the PSC, the DPI, the Educational Communications Board (including Wisconsin Public Radio and PBS Wisconsin) and the Department of Health Services have assisted with outreach.

~ ACP – Enrollment by County and by Zip code~
Households Enrolled up to May 1, 2022

Total HH ACP enrolled up to May 1, 2022
198,051



Digital equity does not occur without intentional strategies, policies, programs, and organizations doing digital inclusion work. The [National Digital Inclusion Alliance](https://www.digitalinclusion.org/) uses the following working definition:¹⁷

“Digital inclusion work entails efforts to ensure all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs). This includes five elements:

1. Affordable, robust broadband internet service.
2. Internet-enabled devices that meet the needs of the user.
3. Access to digital literacy training.
4. Quality technical support.
5. Applications and online content designed to enable and encourage self-sufficiency, participation, and collaboration.

Digital Inclusion must evolve as technologies advance. Digital Inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional and structural barriers to access and use technology.”

¹⁷ <https://www.digitalinclusion.org/>

PROGRESS UPDATE: RECOMMENDATIONS FROM LAST YEAR

Since the publication of the inaugural Governor’s Task Force on Broadband report in June 2021, significant progress has been made on the Task Forces’ goals and recommendations. Below is a discussion of a number of 2021 recommendations in which the state made notable progress.

A top recommendation of the 2020/201 report was **Increase Broadband Expansion Grant funding**. Since the last report, the Governor allocated \$100 million of federal American Rescue Plan Act state and local fiscal recovery funds to broadband infrastructure. The Commission leveraged the processes established by the state broadband grant program and awarded 83 projects funding to connect over 30,000 locations to new broadband service in October 2021. In the 2021–2023 Biennial Budget signed by Governor Evers in July 2021, the Governor allocated \$129 million for State Broadband Expansion Grants; this investment of state funding is larger than all previous state funding combined. In June 2022, the Commission awarded \$125 million for 71 projects to connect over 87,000 locations to new broadband service. In total since the last report, \$225 million in funds have been awarded to connect Wisconsin residents to broadband. Prior to the report, \$78 million in funding was awarded in the previous eight years.

Recognizing that internet availability alone will not be sufficient to close the digital divide, in the 2021 report the Task Force focused on Access, Affordability and Adoption. Another top recommendation related to affordability was to: **Establish a State Assistance Program** to reduce the cost of internet service for low-income households. Since the first report, the federal government launched the temporary Emergency Broadband Benefit program that offered a \$50 discount for eligible households. When the BIL was signed into law the EBB program transitioned to the Affordable Connectivity Program (ACP), and the discount was reduced to \$30 per month and became a long-term benefit. While the state of Wisconsin has not established a state program, the federal benefit program is helping more Wisconsin residents afford internet access. As of June 13, 2022, the number of enrolled households in the ACP benefit is 215,088.

In making their previous recommendations, the Task Force recognized that: **Increased funding for broadband administration** was needed to reach the goals set in the report. In Governor Evers’ 2021-2023 Biennial budget proposal, the Governor recommended adding three additional FTE positions for the Wisconsin Broadband Office; however, the legislature chose not to advance this proposal. The PSC has leveraged resources within the agency, utilized limited term employees and federal project positions to add to the broadband office staff team so it can administer the increased state funding and the new federal funding from the American Rescue Plan Act.

In the previous report, barriers to construction and permitting were discussed. The Task Force recommended that Wisconsin: **Increase construction and permitting coordination**. On December 3, 2021, the Federal Highway Administration (FHWA) implemented a new rule¹⁸ on broadband infrastructure deployment in the right-of-way (ROW). While this rule only applies to Wisconsin Department of Transportation (WisDOT) highway improvement projects on state trunk highways, it is an important step towards increasing coordination. The new rule establishes four new requirements: 1) Identify a broadband utility coordinator 2) Establish a

¹⁸ Title 47 U.S.C. 1504 <https://www.govinfo.gov/link/uscode/47/1504>

registration process for interested broadband companies 3) Notify registered companies of the state highway improvement program 4) Coordinate with other plans. WisDOT continues to issue permits for broadband infrastructure in rights of ways, not in conjunction with highway improvement projects and has done so for over 25 years.

During the first year of the Task Force, the members explored ways to improve broadband coverage data and associated maps. A top recommendation was to: **Collect internet access data from all ISPs at the household and business level of granularity.** While the submission of granular broadband coverage data continues to be voluntary for ISPs in the state, the participation in the program and the amount of granular data has increased. Of the approximately 100 residence-focused providers of fixed internet, 64 participated in December 2020, and 21 provided granular data. In December 2021, 68 providers participated and 46 provided granular data. Thanks to the dedicated efforts of PSC Wisconsin Broadband Office staff, in collaboration with the participating ISPs, submission of granular data has increased by 120% percent since the last report. In addition to Wisconsin's efforts, in February 2022, the Federal Communications Commission (FCC) announced the timeline for the updated federal Broadband Data Collection for broadband availability.¹⁹ The new data is due to the FCC by September 30, 2022.

Consistent with the Task Force's desire to improve data, the 2021 report recommended Wisconsin: **Gather and collect data across all regions of the state to better understand from residential and commercial users the affordability and obstacles to broadband utilization.** Fully released in spring 2022, the WBO launched the Wisconsin Internet Self-Report (WISER).²⁰ The comprehensive survey collects data on the experience of Wisconsin residents using the internet. It includes a speed test, customer perception on cost and performance and collects information on service, device use and demographics. Throughout the state, regional economic development organizations have been encouraging residents to participate in speed tests,²¹ using the information to develop local broadband plans and sharing the data with the Commission. In June 2022, the state released a request for proposals to procure a Broadband Intelligence consulting and data service for improved broadband access and affordability data.

In the previous report, the Task Force recommended Wisconsin: **Create standard labeling or disclosures for broadband services,** commonly referred to as "broadband nutrition" labels. These labels would include monthly charges for data, other charges, additional fees, network performance, privacy information, contract terms and complaint contact language. The recently enacted Bipartisan Infrastructure Law requires the FCC to adopt broadband consumer label regulations by November 15, 2022.²²

Throughout Task Force meetings for the past two years, a strong theme of equity has emerged through the conversations and recommendations. In 2021, a top recommendation was: **Establish a statewide Digital Equity Fund to strengthen and support digital inclusion activities and ideas that lead to all Wisconsin residents having the information capacity needed to fully participate in society.** Since the June 2021 report, the Bipartisan Infrastructure Law has been enacted. Within the new law is the Digital Equity Act (DEA). DEA establishes a formula state digital equity planning grant program, followed by a formula state Digital Equity Capacity grant program. These federal funds are time limited and will not establish a permanent state fund but may be used to develop and implement digital inclusion activities for the next five years. The PSC is currently developing Wisconsin's state digital equity planning grant proposal and plans to submit in July 2022.

¹⁹ <https://www.fcc.gov/document/fcc-announces-inaugural-broadband-data-collection-filing-dates>

²⁰ <https://maps.psc.wi.gov/apps/WISER/index.html>

²¹ <https://wedc.org/blog/wisconsin-broadband-speed-test-aims-to-find-slow-service-dead-zones/>

²² <https://www.fcc.gov/broadbandlabels>

TASK FORCE RECOMMENDATIONS

ACTIVE COMMUNITY BUILDING AND COMMUNITY ALIGNMENT

As highlighted in the first Task Force on Broadband report,²³ if access to broadband is meant to reach all residences and businesses in the state at a speed that is in line with the state and federal definition of Broadband (currently 25Mbps / 3Mbps but with the new BEAD grants favoring 100 Mbps / 20 Mbps speeds), there is a great deal of work to be done. For providers, we know that the “place where the return on investment” becomes hard to justify are the areas in which access, adoption, and affordability are difficult. This is precisely where the on-the-ground support for broadband initiatives must be built up. It becomes the nexus point where funding from state or federal dollars are necessary to support the work the providers can do on their own, and thus it is an important piece in the puzzle in disseminating broadband access as widely as possible.

The Task Force can see the success in Broadband Expansion grant applications: those communities who lie beyond the “break-even” line, who understand the issue, have done mapping and planning, and have leadership in place to manage these complex projects are the communities that are receiving the grants. Many are developing countywide strategies that go further in preventing “connectivity islands.” We know there are some local non-profits who are running robust digital equity projects for those they serve, but with more resources, they can expand their projects and their footprint. To proliferate this type of activity, systematic support of this work with cyclical funding is called upon in order to reach the communities that need guidance and support during this critical period of infrastructure buildout.

The Task Force continues to lift up this definition of building Active Community Networks:

“The Process and strategies used by communities and regions to expand broadband access, affordability, and adoption by building human and financial capacity through partnerships, technical assistance, and planning.”

The release of planning funds is one of the elements available through the BEAD-related activities at the state level, and it is a critical piece for the State of Wisconsin. This will take investment of the planning funds all the way through the system--from the national level to the state level and local level. Actively building the network of community leaders, a previously identified need, becomes more possible with wise and effective use of the BEAD planning funds.

This Active Community Network of interested individuals, local elected officials, service organization leaders, educational institutions, businesses, and even the more “unusual players” need to act together in new ways to close this gap. As with any new initiative, it takes time and guidance to build a healthy initiative that has such a distributed nature.

²³ <https://psc.wi.gov/Documents/broadband/2021%20Governors%20Task%20Force%20on%20Broadband%20Access.pdf>

Ongoing access to the proper tools and the training to use them is essential, given these are planning initiatives that directly relate, in many cases, to multimillion-dollar infrastructure projects or digital access initiatives helping previously unconnected individuals to very needed resources.

The Task Force knows that communities are asking for this help. At the time of writing the first report, the WEDC and PSC Broadband Pilot was still underway or just wrapping up its timeframe of operation. Early on, the agencies highlighted that 96 communities from across the state applied to the program, which only had a two-week application window. If the window were longer, how many more communities would have lifted their hand for help? This point cannot be downplayed.

Asked to reflect further on the work during our March Task Force meeting, WEDC Director of Rural Initiatives, Danielle Jones, presented base findings from the applications to the WEDC and PSC Broadband Pilot. Of the 96 communities that applied, communities' responses to the Application's questions indicated:

- Only 14-17 applications had active broadband committees.
- Only 12-15 had done some outreach to providers.
- When asked what tools were needed, *resources* and *technical assistance* were mentioned at least 15 times.

The findings indicated a need for three tiers of technical assistance. Tier one comprises communities needing guidance to begin learning and start work. Tier two consists of communities that knew a bit about the issue but needed further guidance, while tier three comprises communities with a few successful broadband projects but that needed tailored assistance to handle particular issues. The Pilot only had capacity for six communities to participate. These six had done some previous work (tier two) and had their committees in place, but they needed technical assistance to get to the next level. Remember, of the 96 applications, only 14-17 had broadband committees, meaning the majority did not. By making the decision to work with Tier Two applicants, this means the majority of applicants were not ready for a technical assistance-type pilot project, although they would be those who need resources the most.

CASE STUDY 1: TOWN OF CROSS

The Town of Cross in Buffalo County has been a shining example of highly engaged stakeholders at multiple levels focusing on improving and providing essential broadband access to Township residents for years to come. The Town worked with a local internet service provider named Cochrane Cooperative Telephone Company, as well as Buffalo County, to form a strong public-private partnership focused on providing a future-proof connectivity solution.

In September 2020, the Town formed a Broadband Committee to explore broadband and included three Town officials and eight residents. Later in September 2020, the WEDC and PSC joined forces to launch the Broadband Connectors Pilot, a new broadband technical assistance initiative. The Town of Cross was one of six communities selected for the pilot. Throughout the 4th quarter of 2020, the Town of Cross received one-on-one technical assistance in broadband planning and applying for local, state, and federal broadband funds.

In December 2020, the Town of Cross applied for and received both Broadband Forward! and Telecommuter Forward! community certifications. Also in December, 2020, the Town of Cross Broadband Committee completed a survey of residents to assess the broadband needs of their residents. The survey received an astounding 70% response rate and highlighted the important need for improved broadband service in the Town.

After months of outreach and planning, Cochrane Cooperative Telephone Company, in partnership with the Town of Cross, submitted an application for the PSC's American Rescue Plan Act (ARPA) Broadband Access grant cycle in July 2021. For this funding round, the PSC made available up to \$100 million dollars in ARPA funds for the use of delivering high-speed, reliable, and affordable broadband communications services in one or more underserved areas of the state.

The application included a robust public-private partnership including cash match from both the Town and Buffalo County. In addition to cash match, the Town would provide an in-kind match by way of waiving rights-of-way fees, as well as assisting with promotion and outreach to Town residents. Cochrane also provided a cash match. This type of partnership exemplified a strong model where risks and rewards are equally shared amongst partners.

In October 2021, the application was approved for the requested grant funding of \$2.1 million dollars. All addresses in the Town will receive the new service should they wish to subscribe. In total, a 51 mile fiber network will be constructed and will cover a 37.7 square mile area and connect 228 locations to broadband service.

To reach those communities who are just learning, those in mid-stage of action, and those needing streamlined technical services, a robust technical assistance program needs to be put in place. It must meet the communities of need where they are at in learning to be most effective, and the program needs to be available for an extended period. For those communities just learning, they may need six months to a year of continual coaching. There is sizable expense in building such a technical assistance plan, but there is now curriculum that is being developed to do just that, and Wisconsin has access to this, as you will read in the NDEET case study.

CASE STUDY 2: NATIONAL DIGITAL EXTENSION EDUCATION TEAM (NDEET)

Digital access is vital to community wellbeing. Yet many communities and individuals lacking access, struggle with navigating the divide. Community leaders and volunteers often lack the technical skills to develop a broadband plan, create partnerships, and access resources to enhance broadband infrastructure. The NDEET partnered with the Extension Foundation, USDA National Institute of Food & Agriculture, and the Southern Rural Development Center to develop a national training program to build capacity for community broadband planning.

NDEET based this national training program on curriculum from University of Missouri System Office of Engagement and the Washington State University Extension Broadband Action Team Initiative. The framework incorporates best practices and decision-making tools and resources developed by experts from business, government, and nonprofits. Extension professionals in nine states, including Wisconsin have been trained to utilize the curriculum.

New federal funding for infrastructure and adoption has created a once-in-a-generation opportunity for communities to achieve transformational change. Experience shows funding programs favor community-developed plans that leverage public and private resources. This curriculum prepares communities to access funding assisting them to craft "future-proof" comprehensive solutions that best meet its need for affordable, reliable high-speed internet access.

Community leaders and volunteers go through a five-step process to:

- Develop a comprehensive, written proposal.
- Create a formal public-private partnerships to leverage resources and expertise.
- Tap federal, state, and local public and private financial and human resources.
- Craft a solution that reflects the community's core values and culture.

For more information visit <http://www.srdc.msstate.edu/ecommerce/advancing-digital-access.html>

The Task Force also recognizes efficiencies necessary to deploy these resources to local communities, either by grant application or by funding existing organizational outreach actions. This should be clear in the Wisconsin Broadband Office's plan for using BEAD funding. Throughout the conversations, it was recognized that 1) there are regional and local nuances that are hard to give correct oversight from an aggregate or state level, 2) there are local service organizations that are already doing the work and could use the funding support to, in many cases, move beyond volunteer structures, and 3) there is clear relevance in thinking regionally due to the impact of middle mile expansion on reaching the furthest portions of the potential broadband service areas.

Task Force members voiced that the coach or facilitator that works with these communities needs to be a *trusted organization*. One cannot instill new skills in a few sessions led by a consultant with no previous track record in the area, especially for those communities that need the base-level support. These communities will be embarking on new processes, will have to gather the expertise from their local constituents, and must build it up from there. This becomes infinitely harder if the facilitator is an outsider. Broadband champions look different all over the state and can vary from a school district or library, a farming collective, the local United Way, or more usual suspects like economic development organizations or county-level commissions.

The scale of such an effort calls for an expansion of regional and state relationships that need to be further developed. The recommendations clearly call for more coordination of the many organizations that are working within broadband access realms. In some Task Force conversations, the concept of the *state point person* as the contact working with regional leadership has been voiced. In an effort so large, clear and measurable goals for the building of the local resource alignment and technical assistance being received where it is needed in the form that is most beneficial are crucial. This cannot be left to light reporting.

CASE STUDY 3: MARATHON COUNTY BROADBAND TASK FORCE

Marathon County's overarching goal is to be the healthiest, safest, and most prosperous county in Wisconsin. Recognizing that access to broadband is an integral component of County health and prosperity, Marathon County established Goal 8.7: Strive to provide affordable, reliable, high-speed internet access throughout the County in the Strategic Plan 2018-2022.

As such, Marathon County established a Broadband Task Force, and its mission was to develop recommendations identifying the potential role of Marathon County in facilitating the expansion of broadband access. The Task Force was also tasked with reviewing the Broadband for Marathon County Broadband Assessment and Plan prepared by a consultant and to develop broad policies and partnership recommendations relating to the expansion of broadband services.

The Task Force is comprised of nine members. Four members of the Marathon County Board including members from Extension, Education, & Economic Development Committee (EEEDC) and Infrastructure Committees, as well as five community members with interest and/or expertise in broadband services.

Marathon County asked for assistance from the North Central Wisconsin Regional Planning Commission (NCWRPC) to assist with the collection and analysis of broadband speed test data. Geo Software service was used to collect data across the county to provide an overall picture to help plan broadband improvement projects in Marathon County.

A marketing plan was created to reach out to county staff, elected officials, school districts, libraries, chamber of commerce, large employers, and the use of social media to get the word out to take the speed test. Marathon County currently has over 2,700 speed tests from over 1,800 test locations across the County. These data points were analyzed, and maps were prepared by NCWRPC to help the Broadband Task Force make decisions on where to look for future projects to increase broadband in Marathon County.

Following the model shown in so many supportive state agency activities, there is reason to support the growing regional leadership inside the broadband planning space. Like the regional directors for WEDC, like the Regional Planning Commission model, the Cooperative Educational Service Agencies (CESA's) with DPI, regional leads for University of Wisconsin Extension, and on and on, the translation of state resources through this regional ledge of support is well established.

Some of this work has already naturally started occurring, given that the nine Regional Planning Commissions and nine Regional Economic Development Organizations have begun meeting monthly to share best practices in broadband support on the local level. Those two organizational groups were brought together because the lead in each region varies between those two entities, as described in the first Task Force on Broadband report. Their effort in securing Geo Software for all 72 counties (via a Capacity grant from WEDC for the first year of the software's license) along with the related speed test campaign, and tool usage training, is an example of what this can look like. Efforts such as this provide an outreach mechanism to the state.

RECOMMENDATIONS

- Establish and support a coalition of willing, engaged broadband leaders to connect communities with providers, local and regional partners, planning and technical assistance opportunities, funding opportunities, and resources.
- Create pathways for community leaders and stakeholders to connect and network with ISPs and middle mile providers, including ISPs not currently serving the community.
- Support the work of organizations and other stakeholders in broadband that have built trust with unserved and under-connected communities.
- Create and fund technical assistance programs to guide communities in developing broadband plans, navigating funding opportunities, and achieving their broadband goals and make these funds available to existing trusted organizations such as schools, libraries, nonprofits, higher education, and economic development organizations.
- Encourage and support coordination with tribal entities in broadband planning, resources deployment, and funding.
- Foster dialogue and interaction about broadband between municipal organizations, state agencies, federal agencies, and ISPs with the goal of improving deployment.
- Develop and improve outreach for the Affordable Connectivity Program and similar internet discount and assistance programs. Seek to reduce administrative barriers and provide targeted enrollment supports.

CASE STUDY 4: NEW NORTH REGIONAL PLAN

The COVID-19 pandemic highlighted the need for equitable broadband access for all. Broadband has become a vital need for businesses, health care, schools, organizations and municipalities, which increasingly rely on internet infrastructure to perform their daily business as well as critical delivery of medical care and education services. It was critically important to track data at a sufficiently geographically granular basis to appropriately address the local nature of broadband services. Due to the high degree of geographic disparity in broadband status across the region and highly localized neighborhood and community variability, a full survey model was more appropriate than utilization of random sample methodology. Therefore, New North, Inc. applied for and received an Economic Development Administration (EDA) CARES Act Recovery Assistance grant to conduct a broadband gap analysis for the 18-counties of the New North region. This \$500,000 EDA investment assisted the region with recovery efforts from the COVID-19 pandemic consisting of regional broadband data analysis, mapping, and cost modeling for each county by identifying broadband access gaps. Nineteen reports and Executive Summaries (1 overall regional report and 18 individual county reports) were finalized in May 2022.

Below are some of the project impacts:

- Engaged the public through outreach surveys asking for participation in speed tests.
- Received 17,004 responses – roughly 3% of all households in the region.
- Increased conversation and advocacy for digital equity in Northeast Wisconsin.
- Hosted a minimum of three meetings (virtual and in-person) at the start of the study with each individual county and conducted one roll-out meeting to share draft reports with each county – equates to at least 72 meetings total.
- New North convened a meeting of County Executives, Board Presidents, and Administrators in September 2021. A similar meeting to include private internet service providers and other broadband stakeholders occurred in June 2022.
- In partnership with Competitive Wisconsin, New North will host a broadband action accelerator as a larger, public community session to discuss broadband in summer of 2022.

For more information on New North’s Broadband efforts visit: <https://www.thenewnorth.com/broadband-access/>

RESOURCES FOR PLANNING AND ACTION

In the previous section, the Task Force discussed in depth Network Building and Community Alignment. In order to correctly activate the right relationships through that effort, tools and resources must be secured and disseminated with training to use them in the BEAD period of resources. These tools and resources will ensure that competitive, fiscally prudent projects are developed by those initiatives.

In the first report, Mapping and Data stood alone as its own section, but for this year’s series of monthly sessions, there was an intertwined relationship with technical assistance and planning resources alongside that call for better mapping. Therefore, thinking that this is the “tool kit” which those developing networks will be accessing is the way to understand their interdependence.

This “tool kit” will likely have many resources from the different organizations working on this issue to bring clarity from their own points of view. Survey data, Geographic Information System (GIS) mapping layers from

particular work, and advanced planning tools are examples that were voiced as tools. As the Active Network Building becomes formalized with a central clearinghouse for this information, those desiring the information will be able to access it for their own purposes. Once again, there is knowledge that multiple state agencies and other organizations are doing this type of analyzation, thus the creation of a clearinghouse and a communication plan becomes key.

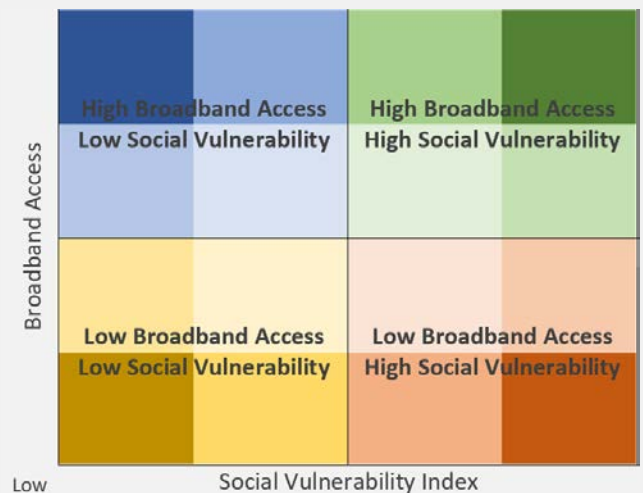
CASE STUDY 5: EVALUATING VULNERABILITY AND EQUITY (EVE) MODEL

Planning for Equitable Access: Adapting the evaluating vulnerability & Equity (EVE) model for broadband distribution

During the pandemic, several tools were developed to assist in the equitable distribution of COVID-19 vaccinations. One such tool developed by the Medical College of Wisconsin and Milwaukee County, the Evaluating Vulnerability and Equity (EVE) model, has been noted for its potential to be adapted and aid in assessing the extent to which broadband is distributed equitably.

The EVE model assigns scores to communities in a 2x2 grid using the social vulnerability index as the X axis and vaccination rates as the Y axis. Each quadrant is further subdivided into sub-quadrants, resulting in a total of 16 sub-categories. By substituting household level broadband access or adoption rates for vaccination rates, the EVE model could be adapted as a tool to compare access by social vulnerability at the community level. This would result in four broad categories: 1) Low broadband access/low social vulnerability, 2) low broadband access/high social vulnerability, 3) high broadband access/high social vulnerability, and 4) high broadband access/low social vulnerability. Results of this analysis would provide an immediate snapshot of the current state of equitable distribution of broadband across the state, and provide a benchmark for progress for future efforts to increase access.

The social vulnerability index (SVI) uses data from the U.S. Census Bureau to assign vulnerability scores to communities at the census tract level based on 15 variables across four components: 1) socioeconomic status (including income, poverty, employment, and education variables), 2) household composition/disability (including age, single parenting, and disability variables), 3) minority status/language (including race, ethnicity, and English language proficiency variables), and 4) housing/transportation (including housing structure, crowding, and vehicle access variables). The social vulnerability index maps are maintained by the Centers for Disease Control (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR) lies at the center of the EVE model. The SVI maps and data are available for download at: <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>



As mentioned in the State of Broadband section, the FCC will have the initial results of better broadband coverage data available in late fall of 2022. There is concern that this may not address the problem completely. Given the provision in BEAD programs which allows challenges, there has been a great deal of conversation about how pro-active communities can address the current and possible future data gaps. If communities or the state, can articulate the areas where the FCC maps (the current map, but more importantly those impending

this fall) are not accurate, the localities may be repositioned to be eligible for federal funds previously not available, and / or the State of Wisconsin could receive more BEAD funding in general. The maps are only one level of a sound, holistic planning effort. Mapping the local system, schematics for sequential buildout, and an active group developing the funding matches (PSC and all federal grants must have a match whether it is from a public entity or private company contribution) are all part of a planning effort.

Who communities are asking to be at the planning table for their local broadband grant efforts becomes key. The Task Force concentrated on the public side of the broadband application process given the differences in oversight between a private sector provider (responsible for their service area, any related expansions done in partnership or on one's own) versus a public entity (identifying coverage and gaps in a community, which some communities are already doing). Many times, the right level of local government, typically at the county level, who is able play a partnership role will allow for better communication and, ultimately project building with the providers working in the area.

CASE STUDY 6: DPI DIGITAL EQUITY SURVEY

In Wisconsin, the Department of Public Instruction's (DPI's) unique role as both the state education agency and the state library agency has allowed for the coordination of activities to support broadband expansion efforts across the state.

DPI developed and released a series of five digital equity questions and a statewide speed testing tools that schools could use to gather detailed information about student access to devices and broadband services, for the speed test data.²⁴

During the 2021-22 school year, 324 out of 421 districts reported digital equity data to DPI. The collection found that some students lacked internet access because of affordability or availability of service. Of those students who reported having internet access where they live, some households responded that they could not stream video for learning at all or without quality interruptions. The data showed that traditionally marginalized student groups were more likely to lack internet access.

DPI built a publicly available Digital Equity Dashboard to view and analyze the statewide aggregated digital equity data.²⁵ In conjunction with the publicly available dashboard, DPI built secure dashboards for schools to use to address individual student needs.

DPI also built publicly available Digital Equity Maps to view data by individual school districts.²⁶ DPI created two primary datasets that fed the Digital Equity Maps and dashboards: broadband access and broadband reliability. The data is given as the percentage of student respondents in each district.

These maps are used by districts to advocate and plan for broadband investments in their communities. In some cases, local broadband expansion groups have requested aggregated digital equity data by county to contribute to their local needs assessment efforts. Twenty-one organizations have contacted DPI to review digital equity data as part of their broadband expansion planning efforts. A number of school districts have used their digital equity data to provide letters of support for broadband expansion grant applications.

²⁴ <https://dpi.wi.gov/broadband/internet-access-home-survey> and <https://dpi.wi.gov/broadband/speed-test-maps>

²⁵ <https://dpi.wi.gov/wisedash/districts/about-data/digital-equity>

²⁶ <https://student-internet-access-wi-dpi.hub.arcgis.com/>

DPI continues to support schools with analyzing digital equity data. Collecting data about access and affordability of both devices and adequate internet bandwidth has allowed DPI to develop data driven systems-level solutions that facilitate both immediate and long-term actions to help individuals and families. Closing the digital equity gap is a priority to ensure high-quality learning for all children in Wisconsin through access to robust broadband and digital learning resources, especially in rural areas and other groups lacking internet access.

Tools for such planning were discussed, as there is a shared responsibility between the provider and the community to be good partners in building relationships for these broadband initiatives. BEAD planning funds give the opportunity to disseminate the best resources for this work for all of the communities via the planning dollars. If there is a common tool that all communities can access for this work, providers and communities alike can make comparisons of projects easier in the long run.

Technical assistance, how this is formulated, who has the current robust curriculum, and how it is funded was a large part of the resources voiced. This relates also to the WEDC and PSC Broadband Pilot, mentioned in the Network section. This pilot confirms there is need for a sizable technical assistance program statewide. There is keen interest in this support coming from those communities who would use it for their broadband grant preparation and planning. This work happens *before* any large-scale projects can be approached. There are many areas of the state where the local government members do not feel like they have enough understanding of the issue, and thus need support in learning about the issue, preparing properly, and creating a vision to close the gap.

Given the timeline that the BIL funding will be available, there needs to be a substantial amount of funding given to the allocation of resources and the funding of technical assistance that will truly create readiness. Mentioned in the Network section, the WEDC/PSC Broadband Pilot gave involved state agencies valuable information about what is needed in order to lead communities in the right direction. A comprehensive Playbook, a clearinghouse for planning resources, and detailed examples and case studies were requested from the applicants, and should live in a central repository for continued learning.

CASE STUDY 7: BROWN COUNTY

Brown County started a pilot speed test with Geo Partners in late 2020. The Brown County Board of Supervisors' Rural Broadband Committee and County Executive worked with numerous other entities to communicate the needs for the speed test. The County shared it through town, village, and city committees, social media, school districts, community groups and traditional media to get message out.

Accurate speed test mapping is critical. High sample rates ensure that the variables inherent in speed tests (e.g., other activity, poor equipment, bad software) can be accounted for. In Brown County, the speed tests clearly show a divide between urban and rural areas. Urban areas are regularly getting more than 100/20mbps and many rural areas are below 25/3mbps.

The GeoPartners tool also provides the ability to build sample models for purely fiber, hybrid fiber and wireless, or purely wireless solutions. Then a technician, GIS specialist, or contractor can estimate costs for unserved and/or underserved areas for grants, contracts, and/or partnerships. Brown County has found the local Land Information Office, GIS office, or similar agent, needs to be involved in broadband planning.

Combining the speed test data, parcels, government buildings, business parks, school districts, and population data creates images that are easier for the public and decision-makers to visualize the data.

Good community broadband planning requires understanding of the technology and knowledge of where services exist or more importantly do not exist. The work required to effectively educate the decision-makers and elected officials is a priority but can require significant time. Brown County started that process back in 2020, and it took almost a year to educate the Rural Broadband Committee.

Now education is needed for the wider community, County Board, and local municipalities. Brown County found the GeoPartners tool combined with County GIS mapping reduces the time required to educate and share information, making the complex information more intuitive and obvious.

Brown County believes broadband growth needs to be regional or even statewide. Teams need the expertise to be able to navigate available options. Brown County also works to help local municipalities. A wider perspective and coordination will improve the impact and effectiveness of local “home-rule” investments. This is especially obvious along the borders of cities, towns, and villages within the County. It is also noticeable at our borders with Kewaunee, Oconto, Outagamie, Manitowoc, Calumet, and Shawano Counties.

Additionally, there should be more tools to understand what middle mile is in existence in the state and how it can be expanded in areas that lack access to this element of broadband infrastructure. As you will read from the case study highlighting the New North regional broadband planning project, there were two elements to the report out: 1) county level plans including a broadband expansion plan that was delivered to each of the 18 counties and 2) a comprehensive regional plan, indicating the need for more middle mile infrastructure for a more robust system. It is important to add that as we are seeing these county level plans emerging they could be paired with or live within regional or statewide maps. *The scale of the mapping solution brings to light the scale of the problem.*

Given the \$980 million competitive Enabling Million Middle Mile grant program authorized by BIL funding, resources that could benefit this portion of the distribution network were discussed in detail. Central to this, developing a map that can illuminate where available fiber lies (dark and lit, open access vs. privately owned) becomes important.

There are recognized nuances to where this map might be accessed, but nevertheless, without robust middle mile projects that are funded at scale, it will be difficult to construct and reach some of the areas where local providers would be willing to serve specific areas. This will be discussed further in the Policy section, as there are additional middle mile policy issues of concern related to BIL funding and planning.

The BIL funds also include program dollars specifically for digital equity, which is necessary in order to reach all populations who can benefit from broadband access. It is the hope of the Task Force that these funds will be as data driven as other broadband efforts. Just as the conversations about the general network expansion honored the fact that there were trusted organizations and local leadership that were already working in the space, digital equity efforts certainly are championed by those who know their populations best. Coordination of resources and support in disseminating those programs will be central to the activities.

But preparation is only half of the work. Actual progress towards Task Force recommendations is critical to achieve the desired impact. One of the recommendations is to reflect on the first Task Force on Broadband Access report and continue to assess some of those clear markers, such as percentage of the state accessing

certain speeds. The Task Force members requested the formulation of dashboards that could make that tracking easy to review and easily accessible. This would have to be created and maintained, and with the expansion of planning funding through the BIL sources, this would be well received.

RECOMMENDATIONS

- Identify, study and map current middle mile availability and needs to assist in local planning for last mile projects.
- Fund and support annual statewide mapping and data collection efforts (e.g. GEO software, Wisconsin Internet Self Report, Department of Public Instruction Digital Equity Surveys) that support stakeholder networks, physical infrastructure networking, and overall broadband planning efforts.
- Collect internet access data from all ISPs at household and business levels of granularity.
- Create a 'playbook' or 'how-to' guide to assist communities and local leaders in broadband and digital equity planning efforts. The guide should include best practices, success stories or case studies, mapping resources, and models that have worked in Wisconsin or are working well in other states.
- Develop data dashboards of where public funds (both state and federal) have been spent, have been awarded, or could be spent.
- Create broadband planning and implementation grants for regions and communities.
- Identify state and organizational agencies that are involved in broadband deployment, describe their roles, services, and resources. Create a resource map that can be used by communities and ISPs as they form stakeholder networks as part of broadband planning and deployment.
- Develop and fund a statewide Digital Navigator program to assist under-connected people and solve a wide range of adoption issues.
- Assess broadband adoption and lack of adoption among households not adopting the internet based on means, needs, connectivity, and prioritization.
- Explore hybrid models of broadband infrastructure development and ownership. Create a shared risk mechanism for public/private partnerships that make use of publicly owned infrastructure to reach underserved locations by private internet service providers

CASE STUDY 8: CITY OF REEDSBURG

Reedsburg Utility Commission (RUC) is a not-for-profit electric, water, and telecommunications utility owned by the City of Reedsburg. RUC has been providing electric and water service in the City since 1894 and fiber delivered telecommunications services since 1998.

RUC's fiber network began by connecting utility substations and wells, Reedsburg's public schools, and some businesses. From this point there was enough community interest in hometown, fiber optic delivered telecommunication services that the fiber network was constructed throughout Reedsburg. By 2006, RUC finished its one-hundred percent Fiber-to-the-Premises (FTTP) network within the City of Reedsburg. Then in 2010, RUC began expanding its fiber network into the rural areas surrounding Reedsburg. RUC currently provides broadband service to Reedsburg (population ~10,000) and the surrounding rural areas of Sauk County including Loganville, Lake Delton, Baraboo, and Spring Green.

RUC continues to expand its rural FTTP network undertaking an aggressive rural fiber network expansion project. Through the FCC Rural Digital Opportunity Fund (RDOF) auction, RUC won 21 census block groups in Sauk, Juneau, Richland and Iowa counties. This project will consist of approximately 850 miles of mainline fiber and will pass by approximately 4,500 unserved and underserved locations. RUC has also been successful in finding other funding sources to support its rural broadband expansion. These funding sources include Rural Utilities Service (RUS) Broadband Initiatives Program, Wisconsin's Broadband Expansion Grant Program, and other local partners. The PSC has awarded 10 state grants to RUC, totaling \$2,466,872. The PSC also awarded four grants to RUC, totaling \$11,745,000, from the state's allocation of funds under the federal ARPA program.

RUC (d/b/a LightSpeed) FTTP network can deliver broadband speeds of 1,000 Mbps (download/upload) and higher to business and residents in its service area. RUC is currently upgrading its network to XGS-PON to deliver internet speeds up to 10 Gbps. RUC's ringed network provides great reliability and LightSpeed's affordable rates and gig speeds contribute to high customer satisfaction.

Customer satisfaction is the key to RUC's success. RUC attributes its high customer satisfaction to being customer focused, and providing affordable and reliable services. RUC is committed to providing the best service for the best price. RUC believes the internet service provider should not be a limiting factor in how quickly a customer can access content. By providing unthrottled access to their fiber network, they provide the best service for an affordable and competitive price. This provides equity and a much better customer experience.

Customer satisfaction is also tied to reliability. Similar to RUC's electric and water systems, its fiber network is designed and constructed to be extremely reliable. Their fiber optic lines are buried and their active network fibers are ringed to be diverse and redundant. RUC regularly monitors, maintains, and updates its network and equipment to ensure it provides reliable services to its customers.

Local hometown service and support is also a key to RUC's success. Customers appreciate the local and personal service they can get at the Reedsburg office. RUC's employees are their neighbors.

RUC's staff is another key to its success. RUC employs at a minimum 25 full-time employee to support the telecommunications utility. This includes customer support and billing, technicians, marketing, and construction crews. RUC has been efficiently and successfully constructing and expanding its network to meet the growing needs of our current and new customers. Since 2014, all construction has been conducted by RUC employees, including project planning, designing, and permitting. By utilizing its own crews, RUC is able to reduce costs, better control the construction schedule, and build a more reliable network.

POLICY

The federal Bipartisan Infrastructure Law (BIL) is geared to infuse \$65 billion into the economy for broadband expansion. The inclusion of broadband in an infrastructure bill previously designed for transportation, roads, bridges, energy, and water is a milestone, recognizing broadband as vital infrastructure. The National Telecommunication Information Administration (NTIA) has the responsibility for disseminating \$42.5 billion to states through the Broadband Equity, Access, and Deployment (BEAD) Program. NTIA released the Notice of Funding Opportunities on May 13, 2022,²⁷ which outlined requirements for funding.

²⁷ <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf>

The Task Force did not have an opportunity to study and evaluate the impacts of BEAD policy for Wisconsin, as they were already in the writing stage of this report. The initial review made it clear to the Task Force that Wisconsin will need to review all its policies and administrative rules in relation to broadband to ensure Wisconsin makes the best use of BEAD dollars. It will also be essential that Wisconsin continue to fund and support broadband deployment in areas not covered by BEAD and other BIL funding programs.

The Task Force reviewed the recommendations made in the 2021 Broadband Task Force Report and reaffirmed that all the recommendations are still pertinent today. Readers should refer to the 2021 Task Force Broadband Report²⁸ for a complete listing. It is important to note that although the 2022 Task Force Report does not include a specific section on funding, funding has been incorporated into all sections of this report. In some instances, the Task Force found the 2021 recommendations needed to be expanded upon based on a deeper dive of the situation. Expanded and new recommendations are provided in this report to define clarity and address concerns in the changing landscape.

The 2021 Task Force Report outlined that time and funding are significant factors in reaching Wisconsin's broadband goals.

However, time and money alone are not enough to achieve the Task Force Goals, Changes to current policies would allow the state to accelerate progress toward Task Force goals, use public funding more equitably, target limited resource to gain the greatest impact, and ensure that broadband is available, accessible, and used by Wisconsin residents.

Wisconsin is not alone in its need to reevaluate its policies and procedures around broadband. A May 2022 report by the Federal Government Accountability Organization is calling for a strategy to address fragmentation, overlap, and duplication by federal agencies. GAO found more than 100 federal programs administered by 15 agencies. Twenty-five federal programs have broadband as their main purpose, and several overlap because they can be used for the purpose of broadband deployment, planning infrastructure, making service affordable, providing devices, and building digital skills. Mapping services and streamlining policies can extend reach of programs and dollars intended to increase broadband capacity.

The Task Force was interested in getting a better understanding of the agencies, departments, and programs that touch broadband, but other higher priority conversations took precedent during the Task Force's timeframe for its work this year. Many of Wisconsin's current policies were born out of Wisconsin obtaining federal Broadband Technology Opportunity Program Grant funds associated with the American Recovery and Reinvestment Act in 2009. In 2022, the Task Force reviewed Wisconsin's implementation of these funds, looking for lessons learned as to make the most of new federal dollars available. Included in this report is a case study from the Wausau Broadband Technology Opportunities Program (BTOP) grant.

CASE STUDY 9: WAUSAU COMMUNITY AREA NETWORK (CAN)

The Wausau CAN idea was developed jointly between the information technology officers of the Wausau School District (WSD), Northcentral Technical College (NTC), and the City/County Information Technology (IT) Commission. They envisioned a jointly built and owned fiber network that would connect schools with higher education, the city and county at large, and with healthcare facilities.

²⁸ <https://psc.wi.gov/Documents/broadband/2021%20Governors%20Task%20Force%20on%20Broadband%20Access.pdf>

In 2010, Wausau CAN submitted a grant request with the assistance of the UW-Extension. They were awarded \$1.2 million dollars from NTIA to build a network connecting the three original founding institutions (WSD, NTC, and the City/County IT Commission) with 14 additional facilities throughout the greater Wausau area.

The inception of the CAN in Wausau is likely only the beginning of a long-term telecommunications strategy for the community. Over time, the CAN will grow in membership and geography as the benefits become more widely recognized.

Critical to any project is the organizational structure of the team, plan of attack, and the execution of the project. In 2011-2012, the CAN brought on a professional Project Manager with a background in telecommunications construction to fact-find towards the writing of a Request for Quotation (RFQ). The RFQ became the standard document to refer to for technical and cost metrics. Early writing of a RFQ is important to put all of the fact-finding information onto paper and allow for finalization of technical specifications for a solid bid by any contractor.

Community Anchor Institutions are the entities included in the original grant and are among the first to connect and use the new CAN. The institutions included government buildings, schools, libraries, and medical facilities.

There were a few notable obstacles encountered that impacted cost and time efficiency of the project. First, there was more rock than expected. Rock mitigation was critical, as was looking for partnerships or agreement opportunities that might allow for use of existing conduit. Second, bridges presented more issues than expected. Issues arose relating to historic preservation, engineering and design, and wildlife. Again, it was important to look for opportunities to share conduit/innerduct as a cost and time savings measure.

The 2022 Task Force found it critical to evaluate all policies and grant programs related to broadband access, adoption, and affordability to ensure responsible and equitable distribution of public dollars.

Early NOFO requirements for accessing federal BEAD dollars has revealed that there are certain requirements that Wisconsin municipalities and ISPs were not anticipating. One concern for ISPs is the requirement that borrowers must provide a letter of credit. This will require lending institutions to begin charging interest prior to approval of funding. This may create a hardship on ISPs: especially smaller providers with limited financial capacity. The Door County Case Study is an example of how municipalities are utilizing ARPA dollars.

CASE STUDY 10: DOOR COUNTY ARPA GRANT ROUND + COMMUNITY LEVEL SHARED FUNDING

Door County has begun what is needed to ensure everyone in the County has access to high speed, affordable broadband. The work began with an independent, third party analysis published in November 2021 led by the Door County Economic Development Corporation. The result has been a collaborative effort between the public and private sectors focused on gathering data that informs local decisions. Significant public investments are needed to meet the goal—as they were when we solved the rural electric and telephone service issue in the 20th Century—and data is important so that all stakeholders are held accountable for making progress on the goal.

Door County and many of the local municipalities are targeting broadband with some or all of their American Rescue Plan Act (ARPA) funds. The County has used funds to hire a Broadband Coordinator to help facilitate the work of municipalities to avoid redundant tasks and learn from each other. Shared tasks supported by the County include data collection and analysis, mapping, and grant writing and reporting support. In addition, the Coordinator is developing a broadband playbook which leverages information from others including the University of Wisconsin Extension. Many towns have very limited staff so it makes sense to provide support at scale for common needs. Door County is also looking at its future investments in IT and emergency medical service (EMS) communications infrastructure that is synergistic with broadband expansion and enabling cost-effective investments.

Door County is also encouraging all stakeholders to join in on solving the broadband problem. This includes not only local governments, but also key players such as the school districts, library system, health care providers, and the business sector. Each of these entities has access to resources that can be targeted to broadband. Pooling those resources strategically makes the effort financially feasible. This is one more area where gaining a solid understanding of what funds are available and for what purposes is important.

Working strategically, collaboratively, and by using data, Door County is set to meet its goal: high speed, affordable broadband for all.

If Wisconsin is going to ensure affordable and reliable broadband access for all, it will be critical that Wisconsin continues to monitor and adjust its broadband policies.

Task Force members identified examples where current permitting and construction timelines hindered the construction of broadband infrastructure. Expediting permitting through municipalities and state and federal agencies can mean the difference of a project being completed on time. Current permitting timelines and environmental protections can halt a project before it begins. ISPs report not pursuing some projects through federal, state, or Tribal land because it is too difficult. Tribes have also reported ISPs installing towers on private property surrounded by tribal land where no tribal permits were sought prior to construction. Construction timelines are also projected to become more problematic as the supply chain dwindles with demand. For these reasons the Task Force has reconfirmed and strengthened its recommendation on permitting.

The Task Force reaffirmed and strengthened its recommendation on middle mile construction. Lack of middle mile construction continues to exist in Wisconsin rural areas. Without grant dollars and cooperative agreements between middle mile and last mile providers some areas of the state will remain unserved/underserved. It is also difficult for municipalities and providers to know who a potential partner could be because current middle mile maps are proprietary. The availability of middle mile funding through BIL could help alleviate some of the middle mile burden if Wisconsin takes a strategic approach to middle mile. NTIA has made up to \$980 million available for federal assistance that ISPs, communities, and other eligible entities can apply for under the Enabling Middle Mile Grant Program.

In the 2021 Task Force Report the group made several recommendations around consumer protection and price transparency. Although the BIL addresses many of the same concerns, highlighting a need for a broadband nutrition label, the Task Force expressed concern over execution. The Task Force is concerned over consumers ability to access and understand pricing, and providers' ability to provide the information in a uniform manner.

NTIA's NOFO for BEAD funding makes it clear that there will still be a strong need for Wisconsin to sustain its own State Broadband Expansion Grant Program. The requirement that applicants provide a 25% match and financial guarantee upon application may prohibit some providers, especially smaller providers, from accessing

federal funds. These smaller providers are often those covering unserved and underserved areas where return on investment is not there.

Although progress has been made to increase the capacity of the Wisconsin Broadband Office, the demands continue to mount. The increase in federal funding and the number of programs continues to grow, taxing the capacity of the PSC. It will be critical that the office has staff and resources that allow it to meet the increased demand and continue to deliver services in a timely manner. Additional resources and staff support may come through legislative support through the state budget or through grants and contracts provided to other agencies or departments as described in the previous

RECOMMENDATIONS

- Align state policy, coordinate, and maximize current and future federal funding.
- Continue advancing and reviewing the goals from the 2021 Task Force report and measure Wisconsin's current performance relative to those goals.
- Reduce barriers to permitting and construction, facilitating the expected timeline of broadband expansion plans.
- Ensure the policies exist for sufficient, accessible and affordable middle mile infrastructure to connect all regions of the state.
- Align state consumer protection labeling to federal initiatives to increase transparency, decrease barriers for providers, and encourage consumer adoption.
- Sustain State Broadband Expansion Grant Program funding to leverage federally funded projects and support local projects not eligible for federal funding.
- Increase Wisconsin Broadband Office capacity, (staff and resources) to ensure new federal funding directed to Wisconsin can effectively and efficiently achieve the highest possible level of broadband deployment and digital inclusion.

CASE STUDY 11: CHARTER COMMUNICATIONS AND MENOMINEE INDIAN RESERVATION

Until recently, access to high-speed broadband eluded those who live on the Menominee Indian Reservation, some 60 miles northwest of Green Bay. The COVID-19 pandemic highlighted this disparity, driving tribal leaders to reach out to Charter Communications for help to expand the network to more than 200 underserved rural homes across 27 miles using Federal CARES Act Funding.

"In our communities, our members had constantly spoken about the areas they live in that don't have service," said Doug Cox, Former Menominee Tribe Chairman. "By investing in our technology infrastructure, we can give every home on the reservation access to broadband and also improve our cellular coverage by adding new towers. It's about the future. Every decision we make today is focused on how it will serve seven generations down the road."

While Charter served parts of the reservation, those in the more rural areas – often heavily forested terrain – did not have access to high-speed broadband and were left with unreliable satellite signals. A recent community survey confirmed expanding broadband access was a top priority for tribal members, prompting leaders to reach out to Charter. Their request included a caveat: locations had to be built and eligible for activation no later than December 31, 2020, to comply with CARES funding.

Charter devoted a sizable crew to the project to meet the aggressive timeline, and worked closely with contacts at the Tribe. Crews built out service across the Wolf River, and in one instance, with rapidly freezing ground conditions, expanded broadband through a 15-mile stretch of heavily forested rural highway that required underground construction.

Throughout the construction phase the tribe assigned a project manager and tribal archeologist who worked in tandem with teams to ensure compliance with the National Preservation Act, a law outlining requirements for digging on federal lands. Charter crews worked through heavily forested areas, rocky terrain, and numerous water crossings to build out access to gig-speed internet to the rural Menominee Indian Reservation to meet an aggressive timeline during a pandemic. The project was completed on time and under budget. As a result, a phase two was added and completed in late 2021, and a phase three project has been planned and currently seeking funding.

CONCLUSION

As the Task Force was discussing priorities for report recommendations, it focused separately on three main themes or areas of focus: Network, Resources, and Policy. Thus, while the recommended priorities for each were decided separately, it is critical to recognize that these three areas of focus are interconnected. As such, the Task Force recommendations need to be considered as a whole and seamlessly in sync with each other if Wisconsin is to accomplish the goal of universal broadband access, affordability and adoption with this once-in-a-generation funding opportunity.