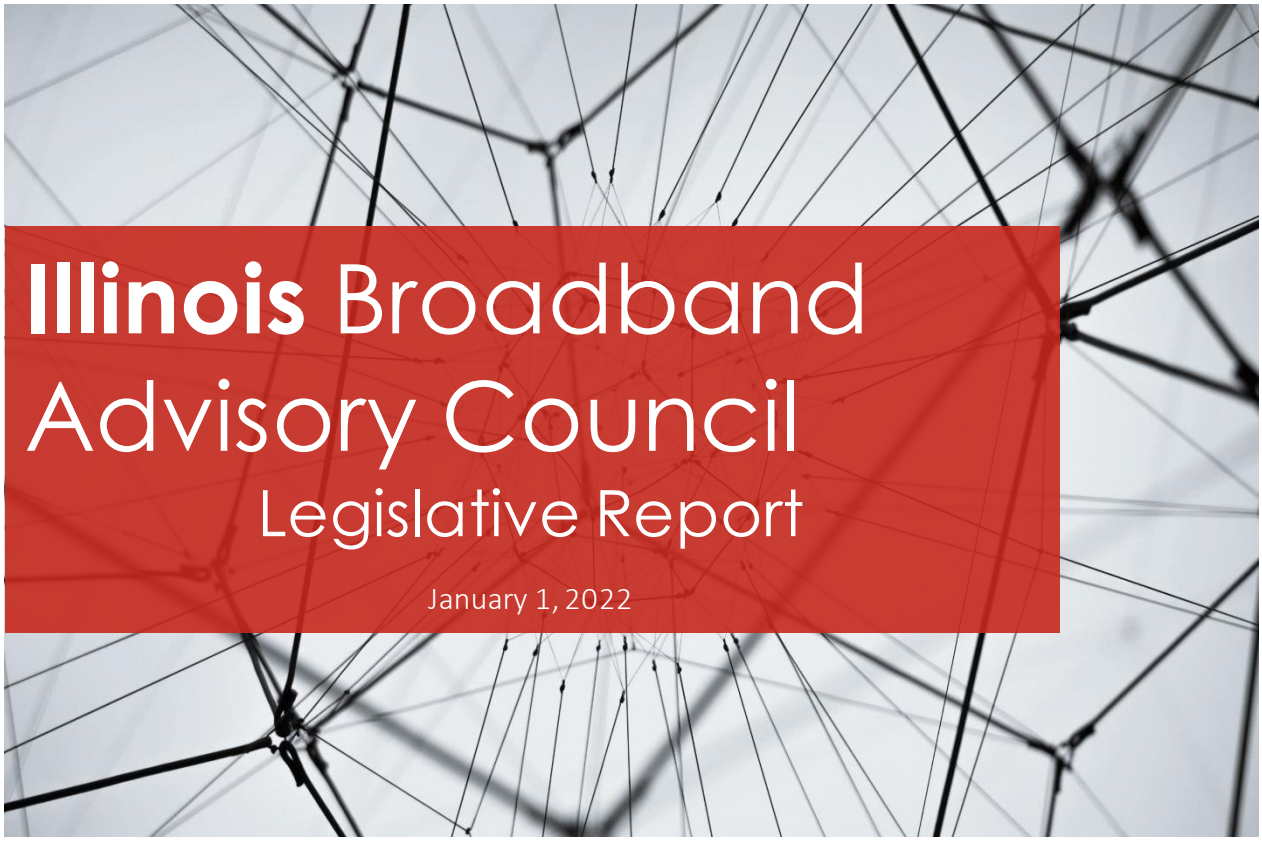


Illinois Broadband Advisory Council

Legislative Report

January 1, 2022

Executive Summary

The *Connect Illinois* program launched in 2019, pairing the then-largest state matching grant program for broadband expansion – the $400 million *Connect Illinois Broadband Grant Program* – with an appropriately ambitious commitment to digital equity and inclusion. The investment also included $20 million to enable the existing 2,100-mile *Illinois Century Network* to provide all school districts in the state with access to free gigabit broadband. Combined, the strategic capital investment sought to ensure that all Illinois households, businesses, and community anchor institutions had access to affordable, reliable, and high-performing broadband.

At its core, the comprehensive *Connect Illinois* vision of broadband ubiquity is one of broadband equity – targeting resources to close gaps and expand opportunity for unserved and underserved communities throughout Illinois. The Illinois Broadband Advisory Council plays a key roll in supporting this work – the work of the Illinois Office of Broadband, the state bureau housed within the Illinois Department of Commerce and Economic Opportunity charged with administering the *Connect Illinois Broadband Grant Program* and related work in community planning and capacity building, regional engagement, and digital equity and inclusion.

The Office of Broadband opened in 2019, launched its *Connect Illinois Broadband Grant Program* in 2020, and followed through in standing up complementary programming in digital equity and inclusion throughout 2021. As historic federal funding for broadband infrastructure expansion and digital equity materialize in 2022, the Illinois Broadband Advisory Council will continue to serve as the primary platform for public discussion of Office of Broadband programming, performance, and progress – and well as a formal body, both directly and through use of its working groups, for broadband policy consideration. Previous issue focus on economic development, education, and healthcare may be augmented with examination of emerging opportunities in digital equity, rural innovation, and smart cities, among others.

To create an ecosystem of digital equity and inclusion, the State of Illinois introduced complementary programming to pair with its historic $420 million capital investment that, combined, seeks to address the three key pillars of digital equity: affordable in-home broadband service; access to personal computers; and digital literacy training and ongoing technical support. Over time, this approach has grown to include programs emphasizing local capacity building and planning, regional engagement, digital literacy, used computer refurbishment and distribution, and introduction of on-the-ground support for communities and broadband adoption assistance for households.

To make all of this possible, the Illinois Office of Broadband is working alongside public, private, nonprofit, and philanthropic partners to raise resources for and awareness of the digital equity challenges facing communities throughout the state. Initial collaboration has been critical to the early success of the *Connect Illinois* program, and it includes strategic cooperation with organizations and institutions such as: the Illinois-based Benton Institute for Broadband & Society; Heartland Forward; Illinois Innovation Network; PCs for People; National Digital Inclusion Alliance; University of Illinois Extension Service; and the University of Illinois System.

The comprehensive *Connect Illinois* programming and collaboration represent a holistic approach designed to empower Illinoisans to participate fully in an increasingly digital economy and society, to help communities identify and address existing broadband equity gaps, and to ensure the state leverages new and existing resources for targeted digital inclusion strategies and sustainable broadband equity outcomes.

The Illinois Broadband Advisory Council

Created through Public Act 100-833, the Broadband Advisory Council (BAC) is charged with removing barriers and fostering collaboration to expand broadband access, adoption, and utilization. In particular, the BAC serves to guide the creation, implementation, and effectiveness of the increasingly comprehensive *Connect Illinois* program – which balances the need for improved broadband access through infrastructure investment with complementary programming promoting broadband adoption and utilization, all through the lens of digital equity and inclusion.

In announcing the BAC, Governor J.B. Pritzker identified three main outcomes that would center the council's work: telehealth; education; and economic development. These priorities have gained significance in light of the COVID-19 pandemic and constitute three primary utilization categories that depend upon high-quality broadband access:

- Telehealth. Expand access to telehealth across the state of Illinois, which will provide additional healthcare options to communities in rural and urban Illinois alike, ranging from primary care to expanded treatment opportunities in areas such as mental health and opioid addiction.
- Education. Increase broadband access – both for in-classroom learning and remote learning at home – throughout Illinois to ensure students have the tools they need to succeed.
- Economic Development. Expand economic development and opportunity in urban and rural communities throughout Illinois. This investment will support the growth of Illinois' agriculture economy and information technology sector and will help to modernize transportation and support the development of entrepreneurs and small business owners.

Among its powers and duties, the BAC – in collaboration with the Illinois Office of Broadband and its strategic collaborators – strives to contribute as follows:

- Explore all ways to expand broadband availability to end-user customers, including in areas of income, business, education, health and aging in place;
- Explore ways to encourage state and municipal expansion of new broadband services;
- Explore, cooperate and assist with increased educational, career, workforce preparation including expansion of electronic and distance educational services;
- Identify service barriers to residents and small businesses;
- Research ways to eliminate adoption barriers;
- Monitor other states broadband progress; and
- Receive input from all Illinois broadband stakeholders and advise the Pritzker Administration on remedying service to underserved areas

To inform and advise the *Connect Illinois* program, the BAC convened in August 2019. The 25-member council generally meets on a quarterly basis and includes representation from various internet service providers, state agency officials and legislators, and certain broadband-related stakeholders. The full membership list is available in Appendix A of this report.

The following individuals serve as officers of the Broadband Advisory Council:

- Chair – Matt Schmit, Illinois Department of Commerce and Economic Opportunity Office of Broadband
- Vice Chair – Lori Sorenson, Illinois Department of Innovation and Technology; and
- Secretary – Katie Stonewater, Illinois Department of Commerce and Economic Opportunity.

Meetings of the Broadband Advisory Council

By statute, the Broadband Advisory Council is required to meet once quarterly. The Broadband Advisory Council convened four times in 2021:

- Regular Meeting: Wednesday, February 17, 2021
- Regular Meeting: Wednesday, May 12, 2021
- Regular Meeting: Wednesday, September 15, 2021
- Regular Meeting: Wednesday, December 8, 2021

February 17th Meeting: Chair Schmit provided updates on the Office of Broadband and status of three Notice of Funding Opportunities: one for *Connect Illinois* Round 2, another for *Illinois Connected Communities* Round 2, and the third for *Broadband READY* Round 1. He noted that the BAC's Broadband Affordability Study was shared with the General Assembly ahead of the January 1, 2021, deadline. The agenda then focused on stakeholder updates, including those focused on broadband and aging, education, and healthcare, respectively.

Lia Daniels, Illinois Health and Hospital Association, provided a perspective on telehealth, noting that broadband connectivity is critical to expanding telehealth access and use. Telehealth can avoid unnecessary emergency room visits; reduce barriers like childcare, transportation, and time off from work; reduced rates of missed appointments; saves $60 million in travel each year; and has a 91% favorability rating among seniors on Medicare. Telehealth is not required by Illinois law – 36 states have telehealth parity policies.

Erich Grauke and Erica Thieman, both from the Illinois State Board of Education, provided an update on remote learning, the digital divide, and virtual curriculum – noting that the pandemic surfaced a lot of equity issues:

- With federal and state funding, ISBE was able to narrow device shortages for students and teachers; as of fall 2020, 686 school districts had sufficient devices to provide 87% of their student body with devices.
- ISBE encouraged school districts to use CARES Act funding to purchase devices; over 400,000 devices were purchased.
- To provide support for districts with greatest financial need, ISBE released Digital Equity grants, funded with CARES Act funds; these grants provided an estimated 200,000 additional devices.
- Challenges to connectivity persist; 97% of school districts report one or more barriers to home connectivity for their students, such as monthly internet expenses, limited bandwidth, internet service unavailable, or lack of devices.
- 279 districts used grant funds to improve home connectivity for learners and educators.

Ryan Gruenenfelder, AARP, introduced findings from the organization's collaboration report, the *Illinois Disparities Disrupt Study*. The report is part of a multi-year initiative. The results of the report identified issues facing people of color over 50 with broadband connectivity. Findings Included:

- Broadband is a rural and urban issue
- In terms of adoption, biggest barriers are cost and lack of technology skills
- 48% of older adults report need for additional help to use internet
- More than one-third of Black and Hispanic older adults do not have internet access at home
- Connectivity positively contributes to mental well-being of older adults, improves connections and increases independence, access to services

May 12th Meeting: Chair Schmit provided an update regarding recent Office of Broadband developments, programming, and growing collaboration. The meeting focused on those collaborations, as well as updates on Office of broadband activity and federal funding developments.

Gigi Sohn, Georgetown Law Center and Senior Fellow with the Benton Institute for Broadband & Society (and future nominee to the Federal Communication Commission), once again provided a federal broadband update. She overviewed broadband-eligible CARES Act funding, as well as potential future federal funding opportunities. Highlights included:

- Emergency broadband benefit that provides $3.2 billion up to $50 a month subsidy for eligible participants; it launched May 12th and provides great promise for addressing certain barriers to broadband adoption, despite the program's imperfections.
- American Rescue Plan Act includes $10 billion to states for broadband and other infrastructure; draft guidance has been released for the program from U.S. Department of the Treasury, and she encouraged BAC members to weigh in with public comment as final guidance is considered.
- Additional federal investment in a separate infrastructure bill (American Jobs Plan), including a federal commitment to digital equity and inclusion and the potential for significant capital investment.

Andrea Lindsay and Dr. Jaison McCall, both from PCs for People, presented on the work with the *Connect Illinois Computer Equity Network*. They noted that:

- PCs for People is committed to serving the whole state through the two hubs, with distribution events planned or anticipated for each county; the Metro East distribution hub opened in April 2021 and the Cook County distribution hub opened in Dec 2021.
- Partnering with local organizations, the Metro East team has had over 30 distribution events to date and distributed over a thousand devices in Southern Illinois.
- The Cook County distribution hub team is hiring staff and pick-ups for donations from corporations and organizations are underway.
- Sourcing for computers is the key to success; the supply of used computers is the limiting factor and leads on potential donors is critical.

Abby Ottenhoff, Heartland Forward, noted her organization's interest – through its Connecting the Heartland Initiative – in contributing to digital equity and inclusion activity in Illinois and supporting the Illinois Office of

Broadband effort. The nonprofit organization is collaborating with four states to launch its work, focusing initially on outreach and awareness regarding the FCC's Emergency Broadband Benefit program.

Heather Hampton-Knodle, FCC Precision Agriculture Task Force, presented the draft report from the FCC Precision Agriculture Task Force, which formed in December 2019. The report included recommendations for policy changes as they relate to funding for broadband deployment, especially for leveraging funds in rural, hard to reach areas. She solicited recommendations from the BAC, particularly as it relates to funding. By mid-July, the task force will have the second installment for funding recommendations to share with the full Precision Agriculture Task Force.

September 15th Meeting: The agenda focused on three primary items: Office of Broadband programming and collaboration; federal funding updates; and an overview of three potential BAC working group topics. Proposed working groups are *digital equity and inclusion*, *smart cities*, and *rural innovation*. Members heard from three experts on how the BAC could approach potential working groups focused on these respective topics.

Amy Huffman, National Digital Inclusion Alliance, provided an overview of work on digital equity and inclusion, noting that:

- NDIA represents partners on the ground doing digital inclusion work. There are over 600 affiliates in 44 states. NDIA advocates in Washington D.C. informing on policy and bringing awareness to digital inclusion.
- States should think about how they can coordinate efforts and there is money available for states for planning for digital equity planning. Funds can be used to create a plan and a framework to tackle the divide. States have convening power, local communities look to states for advice and leadership.
- The pandemic has shown that closing the digital divide is about more than access and computers. Trust and understanding from individuals is a key factor – the EBB program has had slow up take rates, highlighting the complicated nature of the program from the consumer perspective. There are many layers for residents to figure out and underlying mistrust that the program is a scam.

Denise Linn Riedl, City of South Bend, Indiana, offered a summary of the confluence of broadband and the smart city movement, emphasizing that:

- Communities can leverage data, technology and design to improve city services and quality of life outcomes for residents. Smart Cities are not smart because of the technology, but because individuals know how to use it and when to invest in it. Projects such as upgrading infrastructure in the public way – smart streetlights, bus kiosks – these are new tools to provide efficiencies.
- If you are shaping how broadband policy impacts infrastructure deployments and upgrades than you are shaping how smart cities impact communities. This can have major equity implications.

Matt Dunne, Center on Rural Innovation, spoke to his experience in rural innovation, offering that:

- The 2008 recession hit rural communities particularly hard. While urban areas bounced back, rural communities did not. By 2020, not even half of rural counties have recovered from 2008. Rural America represents 15% of the nation's workforce, but only 5% of computer and math jobs.
- In order to close that gap, core infrastructure needs to be invested in for rural communities – high speed internet, fiber to the home, in order to scale economic development. Communities should also invest in

coworking spaces and areas that can create density to spur collaboration. Programmatic elements such as digital economy training programs are needed to help place people in jobs. Support traditional accelerator programs in rural communities and capital to support an inclusive tech culture.

December 8th Meeting: The agenda focused on updates from the Illinois Office of Broadband and program collaborators, as well as perspectives from national experts from the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA), the Pew Charitable Trusts, and Connected Nation, the state's broadband mapping vendor.

Benton's Bill Coleman, who acts as the community coach for *Illinois Connected Communities* and *Accelerate Illinois,* provided an update and overview of these community engagement and planning programs.

Jeannette Tamayo, Illinois Innovation Network, spoke about the University of Illinois collaboration with the Illinois Office of Broadband on the *Broadband READY* program. She also outlined a recent consortium-driven application to NTIA's Connecting Minority Communities Pilot Program for $4 million to support building Chicagoland digital navigator capacity.

Katherine Bates, NTIA, offered an overview of the federal agency's expanding role in supporting state-led broadband initiatives through the State Broadband Leadership Network, and various funding programs – including the Broadband Equity, Access, and Deployment (BEAD) program, which includes over $42 billion largely for support to state-driven broadband investment.

Anna Read, a senior officer in The Pew Charitable Trusts's Broadband Access Initiative, summarized the evolving role states are playing in broadband:

- States play a crucial role in efforts to expand broadband to the millions of Americans who still lack access to this vital service.
- Nearly all states have responded to the growing demand for reliable, high-speed internet by designating responsibility for broadband to a state agency, task force, or council.
- In response to the pandemic, many states have expanded or created new broadband offices and grant programs.

In addition, Read gave an overview of current state approaches to building broadband capacity, including formation of state broadband offices, agencies, task forces/councils, and funds – noting the dramatic increase in recent years in state broadband office prevalence, responsibility, and staffing.

Ashley Hitt, Connected Nation, provided a demo of the interactive Illinois Broadband Map and her organization's approach to collecting broadband access data, integrating complementary data sets, and verifying accuracy of where broadband is and is not in Illinois.

The Office of Broadband

Created in September 2019, the Office of Broadband is housed within the Illinois Department of Commerce and Economic Opportunity, the state's largest grant-making authority. As a primary charge, the office is responsible for administering the *Connect Illinois Broadband Grant Program*. In addition, the Office develops and administers related programming – such as in the areas of community planning and capacity building, regional engagement, and digital equity and inclusion.

The Office has expanded its technical capabilities by growing its team and developing strategic partnerships that have broadened the Office's reach and activities. Matt Schmit has served as Deputy Director of Broadband since September 2019. The Office includes a grants manager for the *Connect Illinois* grants program, two Illini Science Policy fellows, and regular contribution from technical consultant(s). To add value to its programming, leverage external resources, and enhance its capacity, the Office forged strategic collaborations with the Illinois-based Benton Institute for Broadband & Society, Heartland Forward, the Illinois Innovation Network, University of Illinois Extension Services, and the nonprofit, PCs for People.

Connect Illinois Broadband Grant Program

As part of his historic $45 billion Rebuild Illinois investment strategy, in 2019 Governor J.B. Pritzker included $420 million to expand access to high-speed broadband internet across the state. A critical commitment to closing gaps and expanding opportunity, the *Connect Illinois* program is central to the Governor's Five-Year Economic Plan to revitalize and grow the Illinois economy with an emphasis on equitable growth.

With at least $400 million available for broadband deployment grants targeting areas of greatest need – and with significantly more expected via the Infrastructure Investment and Jobs Act, *Connect Illinois* is an equity-driven infrastructure program, first and foremost. Challenges tied to population sparsity, geography, or low take rate continue to stand as barriers to broadband ubiquity. In particular, *Connect Illinois* seeks to address disparities in broadband access and adoption in rural regions and black and brown communities across the state. Understandably, private investment has doubled down on relatively profitable service territories – growing the broadband access gap as a result. *Connect Illinois* funding will address this market failure and recalibrate the business case for new deployments, connecting communities and individual consumers with scalable service throughout the state.

The *Connect Illinois Broadband Grant Program expands* broadband connectivity by promoting the values including but not limited to:

- Competitive matching grants will leverage all available private, local, and federal funds to pair with the necessary state funding to make a deployment viable.
- Applicant inclusive approach will inspire a wide array of proposals, including but not limited to those from providers, cooperatives, municipalities and local governments, nonprofits and other organizations created for the purpose of extending broadband access.
- Community-driven approach will promote direct engagement among providers, local communities, and individual stakeholders to collaborate and build toward a shared community technology vision.

- Affordability focus will ensure that the *Connect Illinois* program takes a comprehensive approach to promoting broadband access through broadband equity, addressing one critical barrier to adoption: a consumer's cost to connect.

- Open access and shared use preference will acknowledge that collaboration over infrastructure promotes better service for consumers and expanded network coverage for providers, producing a triple win by stretching Connect Illinois to its last-mile limits.

Leveraging broadband for innovation in economic development or quality of life requires more than a fast connection. This is particularly true when it comes to empowering communities to participate in anticipation of a broadband deployment or encouraging consumers to utilize broadband once it is available. Accordingly, Illinois compliments its historic investment in broadband infrastructure with value-added work to prime the broadband pump – through a complimentary and increasingly comprehensive approach to digital equity and inclusion programming.

Combining the work of the Broadband Advisory Council with established best practices from across the country, the Connect Illinois Broadband Strategic Plan articulates goals for universal statewide broadband access to spur advances in economic development, as well as innovation in healthcare delivery, education, and agriculture. From its beginning, the plan has emphasized the role of digital equity and inclusion as foundational to any and all state broadband capital investment.

The *Connect Illinois Broadband Grant Program* focuses on expanding broadband connectivity through matching grants for broadband infrastructure projects in unserved and underserved areas. This program can transform the state's investment into a potential total public-private investment of $1 billion or more in state and non-state public/private sources.

Digital Equity + Inclusion Programming

The Approach: Comprehensive, Complimentary + Collaborative

As a lean operation, the Illinois Office of Broadband knew that collaboration would be key: Work with the Illinois-based Benton Institute for Broadband & Society gave rise to the biweekly *Illinois Broadband Connections* newsletter, timely local planning and capacity building through a separate and sustained *Illinois Connected Communities* program, and a mutual interest in broadband data, research, and publication. The University of Illinois – and, in particular, its Extension Services and Illinois Innovation Network – extends the Office of Broadband reach through a consistent and increasingly robust catalog of online content, interactive webinars, and programmatic support. And the office recently launched a new endeavor, focused primarily on mapping and data: the *Illinois Broadband Lab*.

With the promise of historic federal funding to support digital equity and inclusion, Illinois is poised to build on its holistic approach to broadband expansion that treats access, adoption, and utilization as critical components of an integrated strategy.

In 2020, the Illinois Broadband Advisory Council commissioned a Broadband Affordability Study that revealed key insights into the state's digital divide. The *Regional Engagement for Adoption and Digital Equity (READY)* program

highlights the importance of identifying and replicating best practices in broadband access, adoption, and utilization across the state – and tracking digital indicators that matter most throughout Illinois so that we can mark where we are against where we want to go, measuring progress all along the way.

Understanding that the 1.1 million Illinois households lacking computing devices represents an often-overlooked aspect of the digital divide, in 2020 Illinois launched the *Connect Illinois Computer Equity Network* to collect, refurbish, and redistribute used computers on an equitable basis in every county. A key nonprofit collaborator, PCs for People, is seeking sourcing partners and booking distribution events throughout the state, anchored by regional distribution hubs in Cook County and the Metro East region.

Rounding out a comprehensive approach to eliminate the digital divide, the Office of Broadband anticipates launching a statewide digital literacy program in the year ahead, and it's working on additional resources to help communities take advantage of the historic state and federal investment in broadband access and adoption. Collaboration with Heartland Forward, including placement of Connection Corps fellows in Illinois, and emphasis on raising awareness for adoption resources, such as the Emergency Broadband Benefit, has added significant value.

Of course, none of this progress would be possible without the support of key strategic collaborators. Each, in their own way, has contributed greatly to the early successes and continued promise toward our shared goal—to Connect Illinois.

Demographics, Data + Digital Equity Indicators

Identifying Gaps. Upon inception, the Office of Broadband and *Connect Illinois* program were guided by a general understanding of the broadband and digital equity landscapes in Illinois. Publicly available information indicated that Illinois ranked sixth nationally for broadband access, with 89.3 percent of households statewide with terrestrial broadband coverage of at least 25/3 Mbps and 62.2 percent of the state population with access to a low-cost plan for wired service.

American Community Survey data provided insight into one aspect of the digital divide – namely, at-home access to wireline broadband subscriptions; desktop or laptop computers; and desktop, laptop, or tablet devices. Key findings indicated concerning gaps:

- 70.4% of Illinois households subscribe to wireline high-speed internet service.
    - 1,441,161 Illinois households do not subscribe to such service.
- 77.0% of households have a desktop or laptop computer.
    - 1,119,013 Illinois households lack computers of this sort.
- 82.6% of Illinois households have either a desktop, laptop, or tablet computer.
    - 846,677 households lack any of these devices.

In addition, the data revealed concerning disparities by race, ethnicity, and age -- confirming these factors as important indicators to internet and technology access and adoption:

- 57.9% of African American households in Illinois have wireline broadband at home, and 62.1% have a desktop or laptop computer.
- 63.4% of Latino households in Illinois have wireline broadband subscriptions, and 69.0% have a desktop or laptop computer.
- 71.2% of White households in Illinois have wireline broadband subscriptions, and 80.4% have a desktop or laptop computer.
- 63.8% of those between the ages of 65 and 74 in Illinois have wireline service, and 73.9% have a desktop or laptop computer. For those ages 75 and older, 44.8% subscribe to high-speed service at home, and 52.3% have a desktop or laptop computer.

Current Conditions. To gain a deeper understanding of gaps in broadband access, adoption, and utilization – as well as to target the focus of its grant and programmatic resources, the Illinois Office of Broadband has been working on another aspect of digital equity: developing state-specific mapping of broadband assets, including available technology, providers, and levels of broadband service. After all, driving investment toward areas of need will require a firm understanding of where broadband is – and where it is not.

In addition to the mapping resources, the data quantified the digital equity task at hand – Illinois households lacking access to standard broadband performance thresholds of 25/3 Mbps, 100/20 Mbps, and 1/1 Gbps.

Mapping. For a more accurate, granular, and timely understanding of broadband access in Illinois, the Office of Broadband contracted for state-specific data and maps. A new interactive *Illinois Broadband Map* launched in 2021, along with the availability of over 1,700 PDF maps providing standard performance levels by various jurisdictional boundaries – be it county, school district, legislative or Congressional district. For statewide map, see Appendix B.

Recognizing the limitation of current mapping offered by the Federal Communications Commission, this effort leverages otherwise proprietary broadband provider data, direct consumer feedback, and field validation to generate interactive mapping detailing various technology and broadband service tiers available throughout Illinois. Designed to guide investment and programming, to inform policy making, and to engage communities in broadband planning and all Illinoisans in broadband speed measurement, the mapping will enable analysis of various data layers:

- The new mapping tool combines data from local broadband providers, Illinois households, and field testing of available bandwidth. Illinois residents can enter their home address and access basic information about broadband providers, service levels, and technology availability in their area. Integrating broadband speed test results from the general public will help identify areas where the existing maps may overstate available broadband service and fuel the accuracy of the maps over time.

- For community planners and other stakeholders, the new mapping and speed test tools will provide service level information as well as socioeconomic data and jurisdictional boundaries—information helpful for submitting grant applications, leveraging new federal funding, and developing local plans to improve broadband access and adoption. Unlike other maps before it, the new mapping tool will provide more timely, granular, and accurate data on broadband service.

The Office of Broadband will use the mapping to guide its investment of state and federal funds in pursuit of its ambitious goal of achieving universal broadband access throughout Illinois.

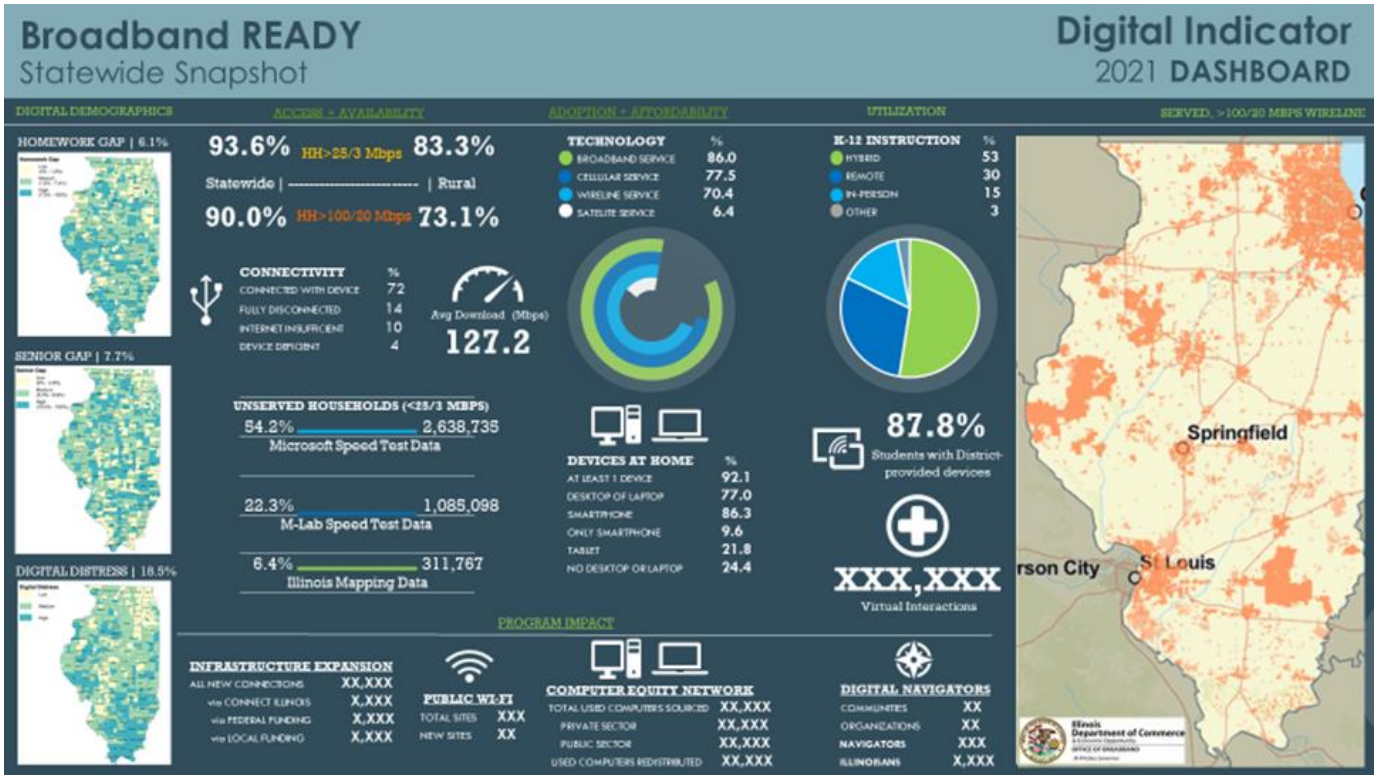
Illinois Broadband Lab. To build on the mapping resources, to contribute additional data, research, and publication capacity, and to supplement *Connect Illinois* programming, the Illinois Broadband Lab launched as a collaborative effort among the State of Illinois, university partners, and key stakeholders, including the Benton Institute for Broadband & Society.

The new interactive state broadband mapping tool, county-level PDF maps, and other resources available through the Illinois Broadband Lab can be accessed at www.ibl.illinois.edu. In addition, the mapping resources and Illinois Broadband Lab collaboration will support existing programming focused on community planning, capacity building, and regional engagement.

Digital Indicator Dashboard. In 2021, the Office of Broadband introduced the *Connect Illinois Digital Indicator Dashboard*, a template deliverable for its *Broadband READY* program – and a key component of the digital equity strategic plan. As regional *READY* teams identify metrics that matter most to them and innovate with regard to data visualization, the template no doubt will evolve. But the dashboard's intent and utility should remain unchanged: to aggregate community- and regional-level data on a statewide basis and to provide a singular resource showcasing data that's integral to the broadband and digital equity charge.

The dashboard and commitment to data is built on the premise that what gets measured gets done. For *Connect Illinois* stakeholders to go where they want to go, they need to know where they are—and track progress along the way. After all, Illinois invests heavily in broadband access mapping; why not do more to track other contributing factors to the digital divide?

The 2021 Digital Indicator Dashboard



Broadband Affordability Study. In 2020, the Illinois Broadband Advisory Council (BAC) commissioned a study exploring various questions posed by the state's General Assembly related to broadband access, adoption, and affordability, including cost estimates for:

- Universal broadband access where existing broadband infrastructure is insufficient;
- Universal free or affordable broadband access for all residents; and
- Free or affordable broadband access for those in poverty.

To provide thorough analysis, the BAC worked with respected researchers to initiate timely inquiry and discussion regarding the intersection of broadband access, adoption, and affordability. While some costs for requested scenarios explored in the study might have been considered aspirational or even prohibitive, others were well within the realm of doable – in terms of programmatic capacity, scope, and cost. For instance, consider the annual cost of providing affordable broadband to Illinois households in poverty that lack broadband service.

The COVID-19 pandemic exposed the significant stakes of the digital divide, with far too many Illinoisans lacking critical broadband access for remote learning, telehealth, or work from home opportunities. Understandably, the federal policy response focused on shorter-term broadband fixes that provided relatively immediate relief versus longer-term broadband solutions designed for sustainable access. The study discerned such shorter-term fixes from longer-term solutions, while recognizing the value and complementary nature of both approaches.

Among its findings, the study confirmed two critical realities for Illinoisan households:

- Sizable "Homework Gap." According to the 2019 American Community Survey, over 285,000 Illinois households with school-aged children lack at-home wireline broadband service. This presented an urgent priority given the pandemic and reliance at the time upon full-time remote learning.
- Lack of Home Computers. The same ACS data indicated that over 1.1 million Illinois households do not have at-home access to a desktop or laptop computer.

The Connect Illinois Broadband Strategic Plan speaks to the importance of a holistic approach to broadband investment and programming. This includes focus on broadband access, adoption, and utilization – which provide the programmatic framework for two existing initiatives, the *Illinois Connected Communities* program designed to build local broadband capacity and the *Broadband READY* program to promote "Regional Engagement for Adoption + Digital Equity." A third initiative, the *Digital Navigator* program, is designed to build digital literacy skills both at the local level and through statewide peer-group support. The recently announced *Connect Illinois Computer Equity Network* seeks to source, refurbish, and redistribute used computers for qualified households throughout the state. Each of these initiatives – including the namesake $400 million *Connect Illinois Broadband Grant Program* – either aligns with or could integrate concerted state-led effort toward improved broadband affordability.

Programming + Partnership

Illinois Connected Communities. The *Illinois Connected Communities (ICC) Grant Program* began in 2020 to help drive community planning and capacity building for advances in broadband access, adoption, and utilization. The program is part of increasingly robust and comprehensive *Connect Illinois* digital equity and inclusion programming, a holistic approach designed to help communities identify and address existing broadband equity gaps – with an eye to sustained broadband equity and inclusion.

The ICC program recognizes that communities need to be prepared to take advantage of historic state and federal funding opportunities and that others could benefit from a focus on complementary aspects of the digital divide, such as broadband adoption or utilization. Whatever a community's focus – and however prepared a community may be to set a broadband vision and take steps toward realizing that vision – the ICC program is designed to support inclusive community planning and capacity building around one or more aspects of an integrated broadband strategy.

By the end of the program, each community will have completed a community-driven, broadband strategic action plan. Communities ranging from Chicago neighborhoods to entire counties comprise an *Illinois Connected Communities* cohort, with each member community forming an inclusive community steering team and participating in a combination of focused community-specific and cohort-wide activities throughout a period of nine-months.

The *Illinois Connected Communities* program is a collaborative effort between the Illinois Office of Broadband, the Benton Institute for Broadband & Society, and local philanthropic organizations.

Broadband READY. The *Broadband Regional Engagement for Adoption + Digital Equity (READY) Grant Program* debuted in early 2021. *READY* seeks to provide a roadmap to eliminating the digital divide through regional collaboration for equitable advances in the areas of broadband access, adoption, and utilization. The program is

part of increasingly robust and comprehensive *Connect Illinois* digital equity and inclusion programming, a holistic approach designed to help regions identify and address existing broadband equity gaps, as well as to leverage new resources for urgent broadband access – with an eye to sustained broadband equity and inclusion.

The *Broadband READY Grant Program* supports a qualified regional entity – such as a community and economic development organization, regional planning council, or institution of higher education – in each of the state's 10 economic development regions. Grantees convene inclusive and regionally representative *Broadband READY* Teams to balance investment in urgent broadband access expansion with the strategic imperative to identify gaps, integrate resources, and track progress over time. *READY* Teams work with the Illinois Office of Broadband to leverage grant funds for expanding public broadband access, to integrate complementary programming and resources, and to produce annual Broadband *READY* reports.

Every regional Broadband *READY* report consists of three key sections: a region-specific digital indicator dashboard; a current conditions summary, identifying digital equity gaps within the defined ecosystem(s) and highlighting best practices for scaling or replication; and a digital divide elimination plan. Combined, these regional deliverables contribute to a fully integrated state Broadband *READY* report, the forerunner and annual complement to the Illinois Broadband Equity + Inclusion Strategic Plan.

The *Broadband READY* program is a collaborative effort with the Illinois Innovation Network and aligns local and regional efforts by forging and strengthening partnerships, identifying scalable or replicable best practice initiatives, and establishing baseline metrics for tracking progress.

Digital Navigators. The forthcoming *Digital Navigator Program* will promote digital equity and inclusion by supporting new or improved "Digital Navigator" capacity at the community level.

Digital Navigators serve as critical community "experts" to provide assistance for local residents needing improved digital literacy skills and know-how. Digital Navigators work with community organizations and residents directly to address the full digital inclusion process – ranging from at-home broadband connectivity to computer use to digital skills. Working with the Illinois Office of Broadband and program partners through a train-the-trainer model, Digital Navigators assess community digital literacy gaps and provide competent guidance towards resources and program development that is suitable for the community and its residents.

Digital Navigators can be volunteers or cross-trained staff who already work in social service agencies, libraries, health, and more and who offer remote and socially distant in-person guidance. Digital Navigators have support from the Illinois Office of Broadband and program partners through targeted training; local, regional, and statewide digital inclusion resources; and introduction to the full Illinois Digital Navigator peer community network. Digital Navigator communities have an opportunity for continued training, ongoing consultation with the peer network, and additional support and resources.

The Digital Navigator program is a collaborative effort between the Office of Broadband and respected local, state, and national organizations committed to community-based digital equity and inclusion programming and investment.

Computer Equity Network. The *Connect Illinois Computer Equity Network* launched in 2020 to address a key contributing factor to the digital divide: the lack of at-home connected computing devices. Over 1.1 million Illinois

households lack at-home desktop or laptop computers. The goal is simple: to put upgraded devices into the homes of as many qualifying Illinois families as possible through regular community distribution events across the state.

Through a first-of-its-kind statewide collaboration, the *Computer Equity Network* is committed to hosting collection and redistribution events in all 102 Illinois counties. National non-profit, PCs for People, is coordinating the *Computer Equity Network,* and serving Illinois with a standardized process for refurbishment, distribution, and impact tracking through two hubs in the Metro East and Cook County Chicago Southland regions. The network provides refurbished computers, internet service and tech support to thousands of people in Illinois – with a goal of reaching at least 10,000 households annually.

The *Computer Equity Network* relied upon funds from key nonprofit and philanthropic organizations to startup the statewide network and continues to collaborate with a variety of organizations to source used computers and distribute them to families in need.

The Illinois Broadband Map

Following a competitive procurement and subsequent contract through the Illinois Department of Commerce and Economic Opportunity, the Illinois Office of Broadband began work with Connected Nation (CN), its broadband data collection and mapping partner. Throughout 2021, CN conducted research and broadband provider (ISP) outreach, collected and obtained information related to broadband service areas, processed and analyzed broadband data, developed and updated broadband maps, and conducted field validation activities.

The first set of Illinois broadband mapping deliverables were completed in February 2021, with subsequent data and map updates in June 2021 and November 2021.

Public interactive broadband maps are available at the following links:

- Comprehensive interactive map: https://connectednation.org/illinois/interactivemap
- Basic interactive map: https://www2.illinois.gov/dceo/ConnectIllinois/Pages/InteractiveMap.aspx

Data Collection and Provider Participation. The digital divide cannot be closed without understanding where the gaps in broadband service are, and broadband mapping is an essential part of that. Having the location intelligence on where broadband services are available by various technologies and speeds allows for the analysis of where broadband isn't available and where attention and potential funding should be directed.

Through the broadband provider outreach process, Connected Nation works with providers to develop current and complete geographic representations of residential broadband service areas where their various technology offerings are available across the state. Broadband data are developed and maintained by providers in a wide variety of formats, so CN works with providers on the unique data they have and standardizes the information for understanding and analyzing the broadband landscape.

CN reviews, processes, and analyzes received provider data in addition to conducting independent research on network offerings, licenses, state and federal broadband databases, and other sources to compare, produce, and refine broadband service areas as needed.

Additionally, if a provider is unable or unwilling to participate in the broadband mapping project, CN works to estimate the provider's service area based on known information, public data, state and federal filings, and field data collection – where CN sends Engineering and Technical Services teams to locate telecom assets and infrastructure for targeted providers to develop more accurate service areas.

The broadband data, maps, and analyses are mainly focused on fixed broadband services, with technologies of cable, DSL, fiber, and fixed wireless. Based on the most recent data collection cycle where provider outreach and research occurred for broadband mapping deliverables submitted to IOB in November 2021, below are statistics on how the data collection breaks down.

Broadband Provider Data Collection November 2021	
Outreach and Research Summary	
Total Viable Providers	125
Data Received/Estimated/Processed	65
No Update Since June 2021 Data	57
Providers Not Yet Mapped	3
Provider Data Vintage	
New Coverage/Speeds Since June 2021	53
No Update Since June 2021 Data	57
Combination of New/Previous Data	12
Data Granularity	
Detailed Service Area	99
Less Than Granular Data	19
Combination of Detailed/Less Granular Data	4

Of the 125 viable broadband providers in the state, service area data is included on the broadband maps for 122 of them. The remaining three are in progress, but enough information was not received and/or able to be located/obtained/estimated prior to the development of the November 2021 maps; these provider service areas will be a focus for the next set of deliverables to include their service areas or confirm they are not actually a viable provider.

Compared to the June 2021 broadband maps, the broadband service areas and/or speed information has been updated for 65 providers, while 57 providers either indicated there had been no change in their networks or information was not received or located that an update had occurred.

For the provider data vintage, of the 65 providers with updated data on the November 2021 map, 53 of them had updates for all their technologies, while 12 providers had an update to some of their technologies, but not all.

In terms of data granularity (i.e., level of detail), of the 122 providers represented on the broadband maps, 99 of them are represented by detailed broadband service areas, where there is higher confidence that all households with the service area are able to receive broadband service from that provider. There are 19 providers whose service areas are not as detailed, considered less than granular data, which may be represented as census block coverage, which tends to overstate service areas and there is less confidence that all households within the service area can actually receive service. The remaining four providers are represented by a combination of detailed and less than granular data. Any providers with less than granular data will continue to be a focus for subsequent broadband maps, working to obtain more detailed service area information through provider outreach, independent research, crowdsourcing, and field validation.

Field Validation Activities. As part of the Illinois broadband mapping project, field validation activities, to confirm the presence of certain broadband services and speeds or refine provider data in discrepancy areas, were scheduled prior to the June 2021 map update. While Connected Nation (CN) worked closely with broadband providers to collect, process, research, analyze, and clarify residential broadband service areas for inclusion on the state's broadband maps, there are and were areas requiring further investigation. These targeted locations consist of areas that have been challenged as having the broadband service available as advertised or areas where CN believed potential overstatement existed, especially related to FCC Form 477 reported data. Field validation activities provide an opportunity to confirm exact service boundaries, track telecommunications assets and infrastructure, locate new or previously unknown broadband providers, and educate stakeholders on available services.

The initial Illinois broadband map was published in February 2021. CN reviewed coverage areas from the initial broadband map where FCC Form 477 data had to be utilized, either from a provider not supplying more granular information about their service area, the provider being non-responsive to requests, and/or the provider supplying FCC Form 477 data to CN that may have been more recent than the current public data.

After the review, a selection of providers and technologies were targeted as the specific areas for field validation activities to be conducted by CN's Engineering and Technical Services staff.

Field validation activities across the state occurred from early to mid-May 2021 by multiple ETS staff. The results of each provider and technology validated, in terms of data refinements, updates, and revisions were processed and incorporated into the June 2021 Illinois broadband mapping deliverables.

Broadband Availability Statistics. An important part of broadband mapping and analysis is being able to identify the gaps in service – the digital divide – and understand how many people are unserved or underserved in a given area. Upon compiling and aggregating broadband service area data, CN calculates broadband availability statistics that estimate the number of served and unserved households at various speeds.

Below are broadband availability statistics on how the percent of served households across the state has changed since the initial broadband map in February 2021, through the June 2021 update, and the most recent November

2021 data. The first table represents all fixed broadband services, including cable, DSL, fiber, and fixed wireless, while the second table represents only wireline broadband services of cable, DSL, and fiber. There have been increases in the percent of served households at the four measured speed levels with each set of broadband mapping updates, reflecting continued expansion of broadband availability, even as some broadband service areas have become more detailed and granular, sometimes decreasing the total area served as more accurate and precise data is developed. There is a significant drop in the availability of 1 Gbps download and 1 Gbps upload broadband service compared to lower speeds, as fewer high-speed services are currently available throughout the state.

Change in Illinois Statewide Broadband Availability Estimates by Speed Tier Among Fixed Technologies: Cable, DSL, Fiber, Fixed Wireless			
Speeds	**Feb 2021**	**Jun 2021**	**Nov 2021**
25 Mbps Download x 3 Mbps Upload	96.25%	97.19%	97.83%
100 Mbps Download x 20 Mbps Upload	90.33%	90.61%	93.42%
1 Gbps Download x 1 Gbps Upload	19.25%	20.08%	23.93%

Change in Illinois Statewide Broadband Availability Estimates by Speed Tier Among Wireline Technologies: Cable, DSL, Fiber			
Speeds	**Feb 2021**	**Jun 2021**	**Nov 2021**
25 Mbps Download x 3 Mbps Upload	92.46%	93.55%	94.01%
100 Mbps Download x 20 Mbps Upload	89.57%	89.98%	92.44%
1 Gbps Download x 1 Gbps Upload	19.12%	19.97%	23.36%

Additionally, CN analyzes the availability of broadband in rural areas to determine statistics among rural households. Below are the same style tables as above, although displaying statistics on rural broadband availability estimates. Rural availability also continues to increase over time, but continues to lag behind urban and suburban availability.

Change in Illinois Statewide RURAL Broadband Availability Estimates by Speed Tier Among Fixed Technologies: Cable, DSL, Fiber, Fixed Wireless			
Speeds	**Feb 2021**	**Jun 2021**	**Nov 2021**
25 Mbps Download x 3 Mbps Upload	90.56%	93.20%	94.70%
100 Mbps Download x 20 Mbps Upload	73.89%	74.55%	82.27%
1 Gbps Download x 1 Gbps Upload	10.46%	10.85%	14.25%

Change in Illinois Statewide RURAL Broadband Availability Estimates by Speed Tier Among Wireline Technologies: Cable, DSL, Fiber			
Speeds	**Feb 2021**	**Jun 2021**	**Nov 2021**
25 Mbps Download x 3 Mbps Upload	80.18%	83.23%	84.25%
100 Mbps Download x 20 Mbps Upload	72.10%	73.13%	79.90%
1 Gbps Download x 1 Gbps Upload	10.46%	10.85%	14.25%

Reviewing the percent of served households across the state is one way of viewing the data, but it is also very meaningful to see the number of households impacted by a lack of broadband service at various speed levels. Below are tables on the number of households unserved by broadband among fixed technologies and wireline technologies. At the current federal broadband definition of 25 Mbps download and 3 Mbps upload, it is estimated there are nearly 105,000 Illinois households without access to fixed broadband. This number exponentially increases as higher speeds are analyzed.

Illinois Households Unserved by Broadband Among Fixed Technologies: Cable, DSL, Fiber, Fixed Wireless	
Speed	**Number of Unserved Households**
25 Mbps Download x 3 Mbps Upload	104,899
100 Mbps Download x 20 Mbps Upload	318,388
1 Gbps Download x 1 Gbps Upload	3,679,248

Illinois Households Unserved by Broadband Among Wireline Technologies: Cable, DSL, Fiber	
Speed	**Number of Unserved Households**
25 Mbps Download x 3 Mbps Upload	289,662
100 Mbps Download x 20 Mbps Upload	365,768
1 Gbps Download x 1 Gbps Upload	3,707,184

Similar to the overall statewide statistics, the broadband data were analyzed in rural areas to estimate the number of unserved rural households at the various speed levels.

Illinois RURAL Households Unserved by Broadband Among Fixed Technologies: Cable, DSL, Fiber, Fixed Wireless	
Speed	**Number of Unserved Households**
25 Mbps Download x 3 Mbps Upload	88,308
100 Mbps Download x 20 Mbps Upload	295,344
1 Gbps Download x 1 Gbps Upload	1,428,783

Illinois RURAL Households Unserved by Broadband Among Wireline Technologies: Cable, DSL, Fiber	
Speed	**Number of Unserved Households**
25 Mbps Download x 3 Mbps Upload	262,482
100 Mbps Download x 20 Mbps Upload	334,956
1 Gbps Download x 1 Gbps Upload	1,428,783

Shifting from statewide to county level statistics, the tables below show how broadband availability varies across counties. The first table shows the top ten most served counties by fixed broadband at three speed levels; in this case, most served is based on the percent of served households in the county.

Top Ten Most Served Counties By Percent Served Households						
	25 x 3 Mbps Fixed Broadband		100 x 20 Mbps Fixed Broadband		1 x 1 Gbps Fixed Broadband	
	County	% Served	County	% Served	County	% Served
1	RICHLAND	99.82%	HARDIN	99.69%	ADAMS	89.48%
2	KANE	99.80%	WILL	99.66%	CLAY	79.48%
3	HARDIN	99.69%	DUPAGE	99.36%	KENDALL	73.80%
4	WILL	99.69%	COOK	99.29%	BROWN	69.55%
5	LAWRENCE	99.60%	HENRY	98.89%	DEKALB	69.11%
6	DEKALB	99.58%	KANE	98.33%	EFFINGHAM	68.09%
7	DUPAGE	99.58%	LAKE	98.13%	TAZEWELL	67.32%
8	MADISON	99.52%	MOULTRIE	97.93%	MORGAN	65.43%
9	COOK	99.42%	STARK	97.17%	MCLEAN	64.81%
10	ST. CLAIR	99.33%	CHRISTIAN	96.69%	MCDONOUGH	63.90%

Perhaps more important than knowing the top served counties across the state is an analysis of the bottom ten counties. The following table shows the bottom ten most unserved counties, where most unserved is based on the percent of households in the county served by fixed broadband. It should be noted there are 37 Illinois counties without any access to 1 Gbps download and 1 Gbps upload broadband service (i.e., 0% served), while two counties do not have any access to 100 Mbps download and 20 Mbps upload broadband.

Bottom Ten Most Unserved Counties By Percent Served Households						
	25 x 3 Mbps Fixed Broadband		100 x 20 Mbps Fixed Broadband		1 x 1 Gbps Fixed Broadband	
	County	% Served	County	% Served	County	% Served
1	CALHOUN	15.11%	CALHOUN	0.00%	37 counties do not have access to 1 x 1 Gbps Fixed Broadband	
2	CUMBERLAND	65.37%	ALEXANDER	0.00%		
3	HENDERSON	66.84%	SCOTT	5.56%		
4	ALEXANDER	69.56%	CASS	11.44%		
5	HAMILTON	70.28%	MASSAC	11.55%		
6	JASPER	73.60%	PULASKI	20.58%		
7	CLARK	74.80%	FAYETTE	22.52%		
8	POPE	74.86%	MENARD	31.91%		
9	HANCOCK	75.00%	JASPER	38.10%		
10	CRAWFORD	78.96%	MACOUPIN	41.73%		

In addition to analyzing the bottom ten counties by the percent of served households, it's also important to note the number of unserved households, as the number and percent can vary depending on the total population of a county. Below is a table of the bottom ten most unserved Illinois counties, by the number of households unserved by fixed broadband.

Bottom Ten Most Unserved Counties By Number of Unserved Households (HH)						
	25 x 3 Mbps Fixed Broadband		100 x 20 Mbps Fixed Broadband		1 x 1 Gbps Fixed Broadband	
	County	Unserved HH	County	Unserved HH	County	Unserved HH
1	COOK	11,396	COOK	13,986	COOK	1,431,341
2	LAKE	3,397	MACOUPIN	11,293	DUPAGE	298,273
3	KANKAKEE	2,761	WILLIAMSON	8,428	LAKE	225,194
4	WINNEBAGO	2,543	JACKSON	8,368	WILL	189,109
5	ROCK ISLAND	2,378	LASALLE	6,937	WINNEBAGO	115,490
6	TAZEWELL	2,245	ST. CLAIR	6,772	MCHENRY	105,113
7	PEORIA	2,112	FAYETTE	6,439	ST. CLAIR	90,182
8	SANGAMON	2,102	MADISON	6,335	MADISON	89,814
9	COLES	2,096	VERMILION	6,069	KANE	89,196
10	MCHENRY	2,047	CHAMPAIGN	5,920	SANGAMON	49,193

Next Steps. Connected Nation will continue to follow a four-pronged approach to broadband mapping and analysis: independent research; provider relationships/outreach; field validation; and crowdsourced data/resident feedback.

This holistic approach to broadband mapping does not rely on any one source of information and works as a set of checks and balances to continue to update, refine, and revise broadband service area and speed data to better understand the broadband landscape across Illinois. While provider participation in the program is high, outreach and research will continue, in order to ensure broadband service representations are as accurate as possible and as updated as possible, as the state reviews availability and makes decisions on where to direct broadband funding for expansion to unserved and underserved areas.

In early 2022, CN will work with the Illinois Office of Broadband to plan targeted areas for field validation, where CN Engineering and Technical Services teams will confirm, collect, and refine broadband service areas to continue making future iterations of the map more accurate, as well as incorporate more expansion areas. This targeted field validation will take place in areas where less than granular broadband data has been mapped, where providers have not yet participated, where feedback has been received that there are discrepancies in the availability data, and other areas needing further investigation.

The next set of Illinois broadband mapping deliverables are scheduled to be published at the end of May 2022.

APPENDIX A - Broadband Advisory Council Members

BAC Member	Organization
Matt Schmit	Illinois Department of Commerce and Economic Opportunity
Deno Perdiou	AT&T
Melia Carter	Verizon
Chris Nelson	Comcast
Rick Holzmacher	Illinois Rural Broadband Association
Zak Horn	Metro Communications
Steven Hill	Satellite Broadcasting and Communications Association
Karen Boswell	Frontier
Josh Shallenberger	CEO of Shelby Electric Coop
Deborah Frank Feinen	Illinois Municipal League/Mayor of Champaign
Anne Slaughter	Illinois Library Association
Deb Alfredson	Illinois Association of Housing Authorities
Jeff Newell	Illinois Community College Board
David Antonacci	Illinois Board of Higher Education
Bill Bodine	Illinois Farm Bureau
Ryan Gruenenfelder	AARP
Lori Sorenson	Department of Innovation and Technology
Paula Basta	Department of Aging
Susan Satter	Illinois Attorney General
Jim Zolnierek	Illinois Commerce Commission
Theresa Eagleson	Illinois Department of Healthcare and Family Services
Sen. Bill Cunningham-D	Illinois Senate
Sen. Jil Tracy-R	Illinois Senate
Rep. Aaron Ortiz-D	Illinois House of Representatives
Rep. Keith Wheeler-R	Illinois House of Representatives

APPENDIX B – Illinois Broadband Map