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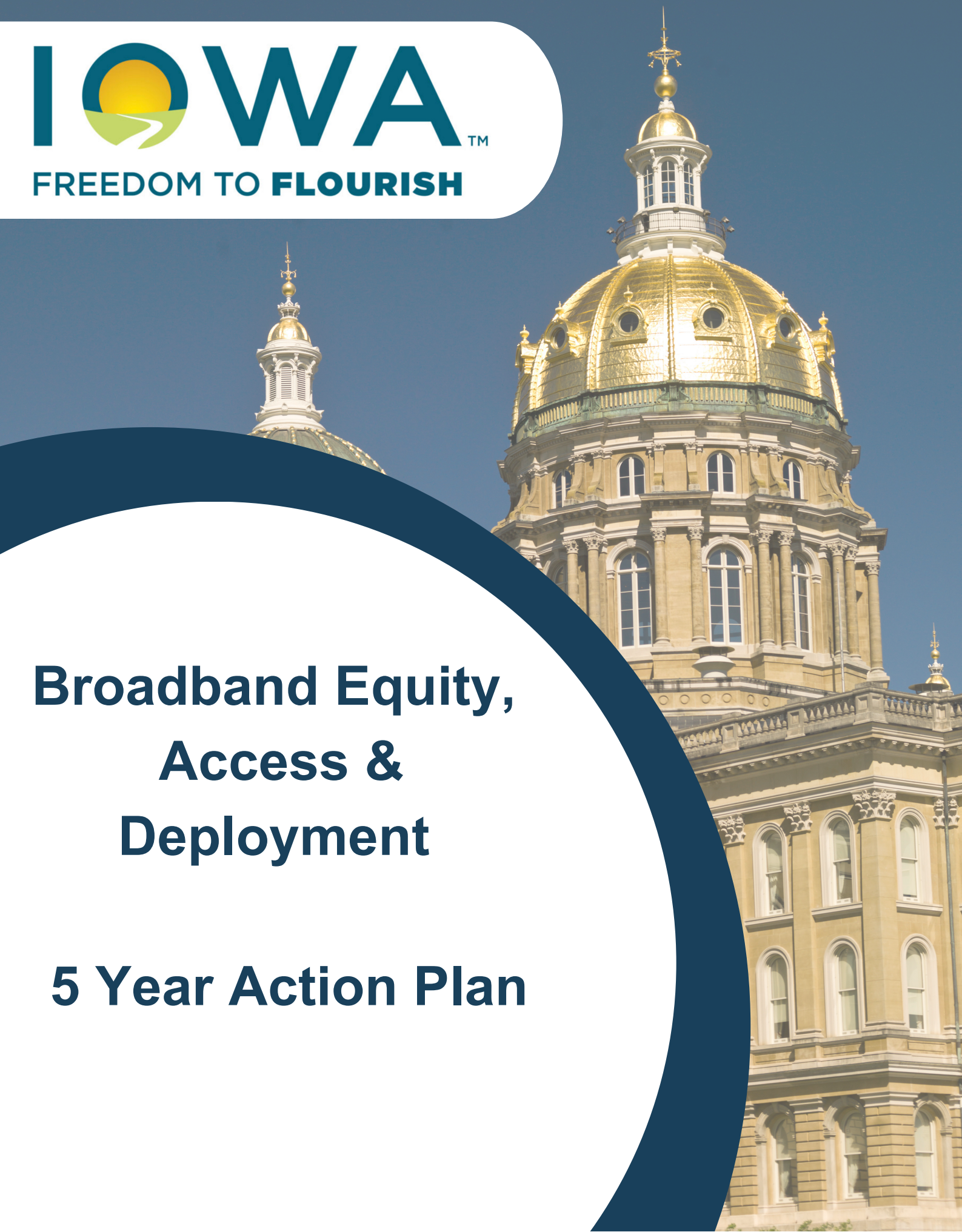

Broadband Equity, Access & Deployment

5 Year Action Plan

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Executive Summary

In the pursuit of providing equitable access to high-speed internet for every location throughout Iowa, a comprehensive plan has been devised, taking into consideration the Broadband Equity, Access, and Deployment (BEAD) timeline as outlined by the National Telecommunications and Information Administration.

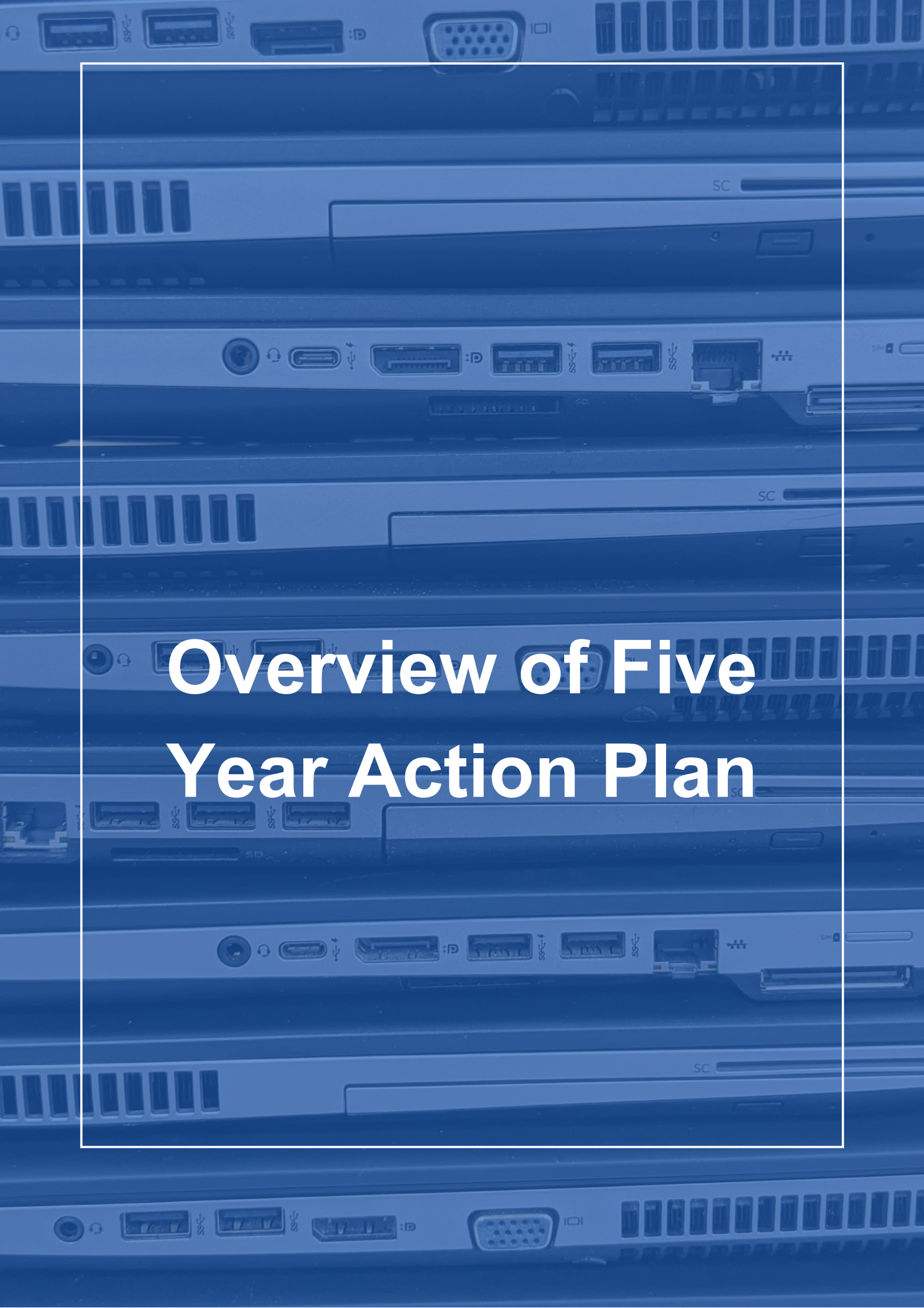
To accelerate broadband deployment, the plan leverages grant funding available through the BEAD and Digital Equity Act (DE) programs. Iowa plans to use these funding sources to support infrastructure development, expand connectivity, and bridge the digital divide across the state. Through strategic partnerships with local governments, tribal entities, non-profit organizations, and private sector providers, the funds will be utilized to prioritize broadband projects that target unserved and underserved populations.

Recognizing the importance of affordable connectivity in ensuring widespread access, we are working to develop solutions that provide access to broadband to all Iowans regardless of their socioeconomic status or geographic location. Iowa plans to utilize available funding to develop creative solutions to ensure the funds are as far-reaching as possible to close the digital divide. We will seek partners to assist with the implementation of building infrastructure and developing programs in an effort to provide affordable internet options for individuals and families across Iowa.

Under the BEAD timeline, Iowa has set ambitious but attainable goals for universal broadband access. By prioritizing collaboration, efficient resource allocation, and leveraging the available grant funding, the plan aims to make significant strides in expanding high-speed internet access throughout the state.

These efforts will ensure that all students across the state have access to the resources they need to achieve success at school, all Iowans have access to the skills and training necessary to contribute in the workforce, all citizens are able to participate and access important government services, and all families are able to access the critical healthcare services no matter where they are located.

Through meticulous planning, diligent execution, and ongoing evaluation, Iowa is committed to working towards a future where every resident, regardless of their geographic location or economic status, has access to high-quality and affordable broadband services. By harnessing the power of connectivity, Iowa envisions a transformed landscape that fosters economic growth, enhances educational opportunities, improves healthcare access, and empowers individuals and communities to thrive in the digital age.



Overview of Five Year Action Plan

2.1 Vision

Today, broadband is recognized as a necessity for Iowa communities. For the farmer in the field, the student preparing for exams, or the business owner leading transformational change—broadband is a key enabler of success in the 21st century. Iowa's unique approach to broadband development recognizes that connectivity isn't just a prerequisite for full participation in the digital world, it's also a catalyst for growth and progress in virtually every sector of our society. Accordingly, this Five-Year Action plan will look beyond the frontiers of universal connectivity to address actionable broadband goals and objectives aligned with Governor Reynolds' vision for Iowa, including:

Education - Supporting every student's success at school

Workforce - Building Iowa's workforce through apprenticeships

Government - Aligning government to better serve Iowans

Healthcare - Promoting healthy families and communities

Progress towards this foundational agenda for Iowa's future depends upon world-class and universal broadband connectivity options, where everyone has access to reliable, affordable, high-speed broadband service. Through innovative partnerships, investments in infrastructure, and a commitment to digital equity and inclusion, we will empower all Iowans—regardless of geographic or economic barriers—to use broadband service to access educational content, participate fully in the digital economy, interact with online government services, and manage their healthcare needs.

2.2 Goals and Objectives

Program Goal:

Increase broadband access and adoption in unserved and underserved areas of Iowa.

Iowa will utilize comprehensive mapping of current broadband coverage in Iowa to identify gaps and areas of need. We will partner with internet service providers and Iowa communities to expand broadband infrastructure and services in unserved and underserved areas, with a focus on rural communities and low-income neighborhoods. We will facilitate financial and technical assistance to households and businesses in areas with limited broadband access to help them get connected. We will enhance public awareness and engagement around broadband issues by developing and implementing a public outreach campaign to raise awareness of the importance of broadband connectivity and digital inclusion.

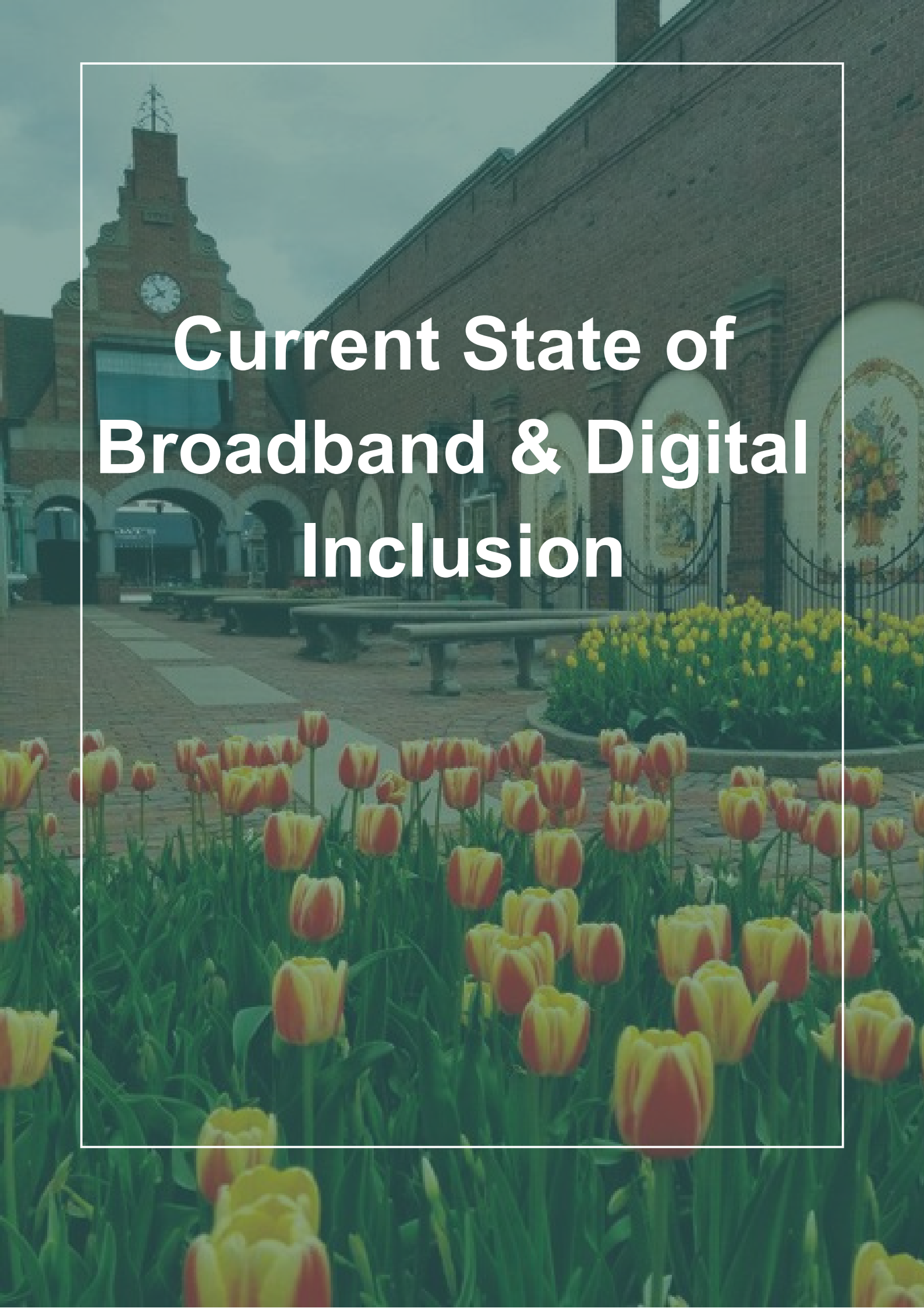
By ensuring reliable and high-speed internet connectivity statewide, Governor Reynold's vision for Iowa will be realized.

- Iowa will support every student's success at school.
    - All students will have access to additional educational opportunities, research materials, and collaborative platforms allowing comprehensive and diverse educational experiences to foster student's academic growth and prepare them for future success.
- Iowa will build its workforce through apprenticeships and educational opportunities.
    - All Iowans will have equal opportunities to access training programs, resources, and skill-building platforms to enhance their competency and build a foundation of lifelong learning and upskilling which increases their freedom to participate in the workforce regardless of their geographic location.
- State government will align digital government services to better serve Iowans.
    - All Iowans will have the opportunity to engage with necessary e-government services, such as online portals, websites, applications, and digital platforms to improve access to state and local government.
- Iowa families and communities will be healthier.
    - All Iowans will have the opportunity to consult healthcare providers, obtain medical information, access important resources, and reduce barriers to care empowering families to make informed decisions to support mental and physical well-being.

Program Objectives:

Vision	Objective
Education	**Foster innovation and economic growth through broadband deployment.** ● Promote the use of broadband infrastructure and digital technologies in sectors of the Iowa economy, such as agriculture, healthcare, education, and small business. ● Encourage private sector investment in broadband infrastructure and services through the Empower Rural Iowa Initiative. ● Establish relationships between universities, research institutions, and industry to explore new broadband-enabled applications and services.
Workforce	**Develop a skilled workforce to support Iowa's broadband economy.** ● Work with Iowa's educational institutions to develop and expand broadband-related degree programs and training opportunities. ● Assist in the development of apprenticeship and internship programs to help build a skilled workforce for Iowa's broadband industry. ● Work with employers to identify current and future workforce needs and help connect them with qualified candidates.

Government	**Improve access to e-government services by promoting digital equity and inclusion for all Iowans.** ● Identify and address barriers to broadband adoption among disadvantaged groups, including low-income households, senior citizens, people with disabilities, and non-English speakers. ● Explore digital skills training programs and resources to improve digital literacy and digital inclusion. ● Work with community organizations, libraries, and educational institutions to provide training and resources that empower individuals to effectively navigate and utilize digital government platforms.
Healthcare	**Support telehealth and other remote services.** ● Promote the use of broadband infrastructure to support telehealth and other remote services in rural and underserved areas. ● Encourage healthcare providers to adopt telehealth technology to increase access to care and reduce healthcare costs. ● Work with other state agencies and organizations to identify other remote services that could benefit from broadband connectivity, such as education and job training.



Current State of Broadband & Digital Inclusion

3.1 Existing Programs

The State of Iowa Department of Management Office of the Chief Information Officer ("OCIO" or "Office") administers broadband activities including Governor Reynolds' Empower Rural Iowa Broadband Grant Program ("Program"), statewide broadband mapping activities, community engagement programs, broadband property tax exemption programs, and fiber optic network conduit installation programs.

Empower Rural Iowa Broadband Grant Program History

Since 2018, the Program has allocated $367 million in broadband grants across Iowa, resulting in $884 million in total investment across the state. Over 115,000 Iowa homes, schools, and businesses will receive faster broadband speeds as a result of this program. Funds have been distributed across eight Notice of Funds Available (NOFA) opportunities.

Funding for previous NOFA's varied based on use of state or federal funds. NOFA's 3 and 5 have been completed. NOFA's 1, 2, 4, 6, 7, and 8 are actively managed by OCIO broadband staff to facilitate completion with providers for unserved Iowans. The state funded NOFAs are 1, 2, 4, and 6. NOFAs 3, 5, 7, and 8 are federally funded.

The Empower Rural Iowa Grant Program traces its history to 2015 with the passage of House File 655[1] ("HF 655"), an act providing for the coordination and facilitation of broadband access in targeted service areas of the State, was signed into law. 2015 Acts, ch 120, §26-38 (codified, in relevant part, at Iowa Code chapter 8B). HF 655 was designed to help reduce the "digital divide" and better deploy technology assets across the State of Iowa with special emphasis on the critical broadband needs of rural Iowans.

HF 655 comprised several components, one of which includes the "Broadband Grants Program" established by Iowa Code section 8B.11.[2] See also Iowa Admin. Code r. 129—22.[3] In 2016, OCIO undertook a process to identify unserved areas within the state of Iowa. This process made use of broadband availability maps and data sources that were widely accepted for accuracy and made available for public review and comment. Iowa Admin. Code r. 129—20.3.[4]

These unserved areas, statutorily referred to as "Targeted Service Areas," see Iowa Code § 8B.1(13), were originally identified as U.S. Census Blocks "within which no communications service provider offer[ed] or facilitate[d] broadband service at or above twenty-five megabits per second of download speed and three megabits per second of upload speed as of July 1, 2015." I. Id.

[1] https://www.legis.iowa.gov/docs/publications/LGE/86/HF655.pdf
[2] https://www.legis.iowa.gov/docs/code/8B.11.pdf
[3] https://www.legis.iowa.gov/docs/iac/chapter/04-19-2023.129.22.pdf
[4] https://www.legis.iowa.gov/docs/iac/rule/06-02-2021.129.20.3.pdf

The results of this initial mapping process were published on the OCIO's website as the first version of Iowa's "Broadband Availability Map."[5]

In the following years, this statutory framework evolved to include progressively higher minimum speed thresholds for locations identified as Targeted Service Areas, with subsequent revisions to Iowa law that included increased incentives for communications service providers to facilitate broadband infrastructure to homes, schools, and businesses residing therein. Areas of Iowa served through the multiple NOFAs are illustrated in Figure 1 below.

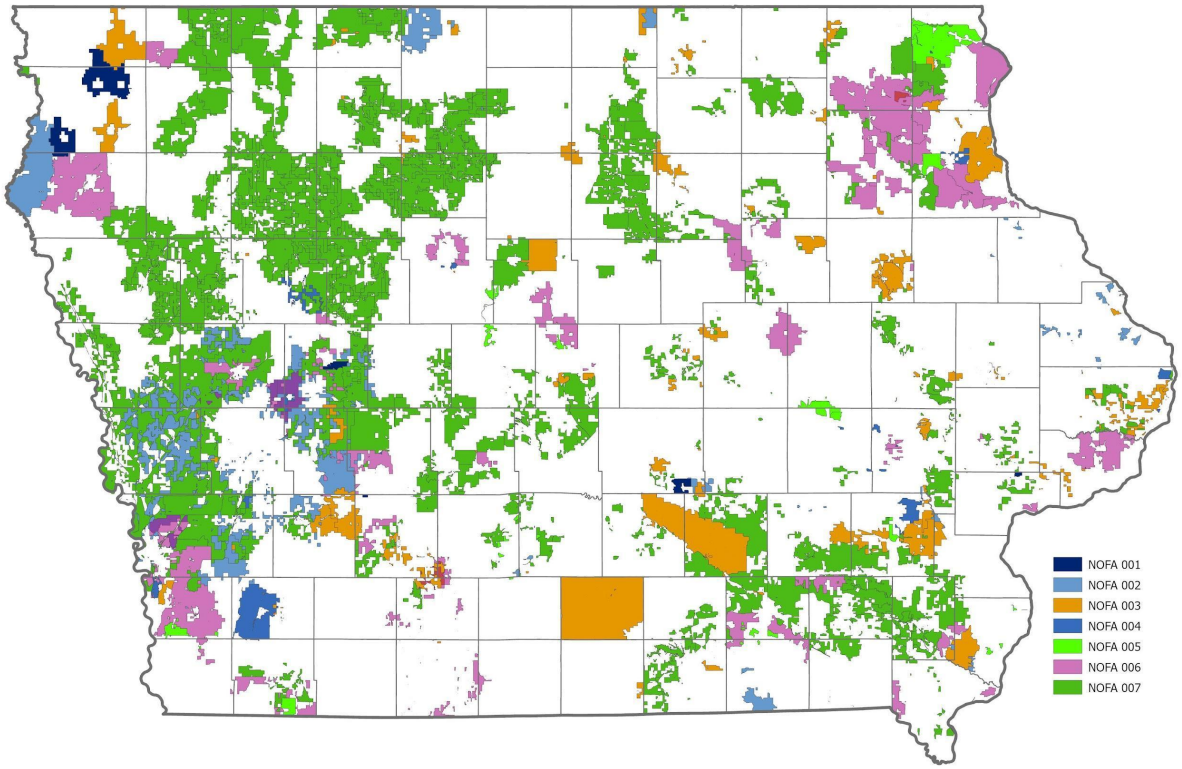


Figure 1: Locations awarded Empower Rural Iowa Broadband Grants

In 2018, the Iowa Code was updated to include permanent language regarding broadband property tax exemption. Iowa Code 427.1[6] discusses tax exemptions for owners of broadband infrastructure. Iowa Code 427A.1[7] discusses the definition of transmission property and outlines the schedule for assessment and taxation, which includes that transmission property shall not be assessed and taxed as real property beginning January 1, 2022.

In 2020, limitations in state law were identified that impacted broadband grant award procedures. The Iowa General Assembly responded by amending existing statutory language to

[5] https://ocio.iowa.gov/broadband
[6] https://www.legis.iowa.gov/docs/code/427.1.pdf
[7] https://www.legis.iowa.gov/docs/code/427A.1.pdf

encourage rapid deployment in the most challenging locations across Iowa. The General Assembly passed the Empower Rural Iowa Bill, Senate File (SF)2400,[8] which expanded the definition of "Targeted Service Area" to three tiers based on the conditions of broadband, with highest priority and state matching funds offered to Tier 1 (i.e., unserved) Targeted Services Areas.

Table 1: Current Activities that the Broadband Program/Office Conducts

Activity Name	Description	Intended Outcome(s)
Connect Every Iowan Broadband Grant Program NOFA #1 (State funds)	Date: 2018 Funds available: $1.3 million state funding Project: Notice of Funding Availability #001. Application Window: February 18, 2019 through March 15, 2019. Notice of Intent to Award: April 30, 2019, 7 applications awarded.	Funding for projects that would help reduce the "digital divide" and with special emphasis on the critical broadband needs of rural Iowans. **Completed projects must facilitate at least 25/3 service**. Completion: All projects to be completed by 12/17/2023
Empower Rural Iowa Grant Program NOFA #2 (State funds)	Date: 2019 Funds available: $5 million state funding. Proct: Notice of Funding Availability #002. Application Window: September 20, 2019 through October 22, 2019. Notice of Intent to Award: November 27, 2019, 17 applications awarded.	Funding for projects that would reduce or eliminate targeted service areas and facilitates 25/3 broadband in the targeted service areas. Completed: All projects to be completed by 9/20/2024.

[8] http://www.legis.iowa.gov/docs/publications/LGE/88/SF2400.pdf

Empower Rural Iowa Emergency Broadband Expansion Program NOFA #3 (Federal CARES Act Coronavirus Relief Funds)	Date: 2020 Funds available: $50 million in Coronavirus Relief Funds Project: Notice of Funding Availability #003 Application Window: July 20, 2020 through August 5, 2020. Notice of Intent to Award: August 21, 2020, 71 applications awarded. NOTE: This grant opportunity did not include any state funds.	Funding for projects to provide or incentivize adoption of consistent and reliable 25/3 broadband or 100/20 broadband to unserved broadband units or non-adopters located in the state of Iowa in connection with the COVID-19 pandemic. Completed: Infrastructure projects were to be completed by 7/1/2021. Broadband adoption projects were to be completed by 12/1/2020.
Empower Rural Iowa Grant Program NOFA #4 (State funds)	Date: 2020 Funds Available:$5 million in state funds Project: Notice of Funding Availability #004 Application Window: October 29, 2020 through November 22, 2020. Notice of Intent to Award: December 23, 2020, 13 applications awarded.	Funding for projects that will result in the installation of broadband infrastructure that will facilitate at least 25/3 broadband but less than 100/20 broadband or that will facilitate 100/20 broadband or faster. Completed: All projects to be completed by 10/23/2025.
Empower Rural Iowa Grant Program NOFA #5 (Federal Coronavirus Relief funds)	Date: 2021 Funds Available:$15,452,302 million in remaining federal Coronavirus Relief Funds Project: Notice of Funding Availability #005. Application Window: February 4, 2021 through February 25, 2021. Notice of Intent to Award: March 12, 2021, 14 applications were awarded.	Funding for projects to provide a minimum of consistent and reliable 100/100, 50/5, or 25/3 broadband service. Completed: All projects to be completed by 12/1/2021.

Empower Rural Iowa Grant Program NOFA #6 (State funds)	Date: 2021 Funds Available: $97,500,000.00 in federal funding Project:Notice of Funding Availability #006 Application Window: July 1, 2021 through July 28, 2021. Notice of Intent to Award: September 14, 2021, 39 applications were awarded.	Funding for projects that will result in the installation of broadband infrastructure that will facilitate at least 25/3 broadband but less than 100/20 broadband or that will facilitate 100/20 broadband or faster. Completed:All projects to be completed by 4/30/2025.
Empower Rural Iowa Grant Program NOFA #7 - American Rescue Plan (Federal ARP Coronavirus State and Local Fiscal Recovery funds)	Date: 2022 Funds Available: $210 million in ARP Coronavirus State and Local Fiscal Recovery Funds Project: Notice of Funding Availability #007 Application Window: October 25, 2021 through November 22, 2021. Notice of Intent to Award: January 4, 2022, 160 applications were awarded.	Funding for projects that are designed to provide last-mile broadband service to homes, schools, and businesses in unserved and underserved areas as defined in 35 C.F.R. § 35.1 (“Unserved and Underserved Households and Businesses”) that meets or exceeds 100/100 broadband or in cases where it is not practicable to provide 100/100 broadband that reliably meets or exceeds 100/20 broadband, scalable to 100/100 broadband in future years. Completed: All projects to be completed by 9/30/2026.

BroadBand Together Program - (Federal American Rescue Plan funds)	BroadBand Together Program is designed as a community outreach tool that informs the public on how to create a broadband plan in their community for the services they need.	This program is available to Iowa communities: 1. As an educational resource to better understand broadband. 2. To provide opportunities to enhance or expand broadband alternatives. 3. To coordinate various broadband-related resources; or 4. To work with your selected service provider to explore broadband options.

Broadband Availability Map - Version 5	On August 2, 2022, the Office posted the final version of Broadband Availability Map v5 and opened a 30-calendar-day challenge window Map v5 is designed to facilitate decisions concerning future spending under federally-funded broadband programs.	Address locations are displayed on the map with an: “Eligible” determination: Broadband service below 100 mbps down / 20 mbps up (excluding satellite and mobile wireless) with no disqualifying prior state or federal incentive. or an: “Ineligible” determination: Broadband service greater than or equal to 100 mbps down / 20 mbps up (excluding satellite and mobile wireless) and/or with disqualifying prior state or federal incentive. These eligibility standards were guided by federal programs including the American Rescue Plan Capital Projects Fund and the IIJA Broadband Equity, Access, and Deployment Program.
Invitation to Qualify (ITQ) #001 - Broadband Intervention Zones ITQ	The ITQ process allows communities to propose areas across the State of Iowa that should be made Broadband Intervention Zones for the next Program grant opportunity. The application acceptance window closed on 3/31/2023.	Providers who apply for Program grant funds to construct service within Broadband Intervention Zones may be eligible to receive enhanced incentives and higher prioritization for funding.

Empower Rural Iowa Grant Program NOFA #8 (Federal American Rescue Plan Act (ARPA) Coronavirus Capital Projects Fund (CPF))	Governor Reynolds has authorized the allocation and expenditure of $148,960,000 from the American Rescue Plan Act ("ARPA") Coronavirus Capital Projects Fund ("CPF") to provide a substantial infusion of resources to help turn the tide on the pandemic, address its economic fallout, and lay the foundation for a strong and equitable recovery. Date of Project: TBD	Applications submitted to this NOFA must be designed to provide last-mile broadband service to Eligible Service Locations that: 1. reliably meets or exceeds 100/100 broadband; OR 2. in cases where it is not practicable, because of the excessive cost of the project or geography or topography of the area to be served by the project, to provide broadband that reliably meets or exceeds 100/20 broadband. However, 100/20 broadband projects must be scalable to 100/100 broadband within three years of the project completion date.

Dig Once Fiber Optic Network Conduit Installation Program	Iowa Code Chapter 8B.25 requires the Office of the Chief Information Officer ("OCIO") to lead and coordinate a program to provide for the installation of fiber optic network conduit where such conduit does not exist. Iowa Code 8B.25 also requires the OCIO to consult with other agencies to ensure that the opportunity is provided to lay or install fiber optic network conduit where a state-funded construction project involves trenching, boring, a bridge, a roadway, or opening of the ground, or alongside any state-owned infrastructure.	The website provides access to information concerning the Iowa Department of Transportation ("DOT") five-year state-funded infrastructure projects. There is an interactive map that identifies where such projects are anticipated to occur. Users of the system may select any area of the state of Iowa to identify those projects and also register to receive notifications concerning new construction projects in areas where the installation of fiber optic network conduit may be of interest.

Table 2: Current and Planned Full-Time and Part-Time Employees

Current/ Planned	Full-Time/ Part-time	Position	Description of Role
Current	PT	Chief Information Officer	Executive Sponsor
Current	PT	Lead Program Officer	Manages and supervises team members
Current	FT	BEAD Program Manager	Oversee the Program, managing the tasks associated with determining program strategy, project delegation, and program implementation.
Current	PT	Information Technology Specialist	Developing analytics and geospatial materials that assist the office in determining eligible locations for broadband buildout
Current	PT	Geospatial Coordinator	Responsible for the development of analytics that assist the broadband program with project selection and reporting, mapping and geospatial data management
Current	PT	Attorney	Provide legal support for the development of program materials and contracting.
Current	PT	Map Challenge Coordinator / Evaluation Facilitator	Leads efforts to facilitate challenges to Iowa's broadband maps.
Current	PT	Digital Equity Program Manager	Responsible for the development and implementation of the state's Digital Equity Plan
Current	PT	Information Technology Enterprise Expert	Assist with technical review and evaluation.
Current	PT	Information Technology	Assist with technical review

		Enterprise Expert	and evaluation.
Current	PT	Information Technology Administrator 3	Assist with technical review and evaluation.
Current	PT	Information Technology Administrator 3	Assist with technical review and evaluation.
Current	PT	Information Technology Administrator 4	Assist with technical review and evaluation.
Current	PT	Executive Officer 3	Assist with technical review and evaluation.
Current	PT	Information Technology Specialist 5	Assist with technical review and evaluation.
Current	PT	Attorney 3	Assist with technical review and evaluation.
Current	PT	Technology Account Manager	Assist with technical review and evaluation.
Current	PT	Public Information Officer	Provide communications support for the development of program materials.
Current	PT	Local Government Program Manager	Provide support for outreach to consumers and local governments.
Planned	FT	Compliance Officer	Responsible for the administrative work and processes that go into awarding, monitoring, and successfully completing grant project closeout.

Table 3: Current and Planned Contractor Support

Current/ Planned	Time	Position	Description of Role
Current and Planned	PT	Connected Nation Mapping and data collection	Contractor will collect updated data from providers regarding new broadband deployment resulting from state, local, federal, or privately funded sources and provide two refreshed maps and corresponding deliverables to assist the State of Iowa in the administration of its Program during the 2023 and 2024 calendar years. This work may include operational support with Iowa and Federal map challenges. Broadband Infrastructure field-audit and validation services
Current and Planned	PT	RSM Grant oversight, monitoring, reporting, and compliance services	Create an organizational structure and grant management work plan, create a project timeline, communicate regularly with subrecipients, develop testing sheets for regulatory requirements, create and maintain a risk assessment framework, create grant reimbursement claim files, provide technical assistance to subrecipients, review subrecipient reports, perform audits of subrecipients, perform technical testing of subrecipients, compile and report on data collected, track and report progress of last-mile broadband service, develop risk assessment for subrecipients.

Current and Planned	PT	FG Technical assistance, planning, inventory development, engagement, and communications	Receive from the Office instruction and guidance for outreach and engagement, contact stakeholders to gauge interest in broadband improvement and willingness to participate in the broadband grant program, consult with and advise the Office with regard to providing a comprehensive, high-level plan for providing reliable, affordable, high-speed internet service throughout the State, provide technical assistance and support to ITQ applicants, consult with Communities to submit an application to the ITQ, perform ongoing outreach to ITQ Applicants, develop and implement procedures to gather feedback from ITQ applicants, conduct surveys and solicit feedback from all 99 counties, as well as community leaders, organizations, and others as required in the BEAD 5-Year Action Plan to gauge an interest and need for broadband in that area, provide program development resources to integrate with Office grant management team, provide support to Office in administering the Broadband Grant programs.

Current	PT	University of Northern Iowa's Center for Social and Behavioral Research	UNI will develop and administer a statewide survey to establish a baseline understanding of Iowan's attitudes and beliefs about broadband connectivity, affordability, digital devices, and digital skills. Additionally, UNI will conduct focus groups to further understand the digital landscape in Iowa.
Planned	PT	Education Superhighway	OCIO may engage Education Superhighway to help spread awareness of and enrollment in the Affordable Connectivity Program. Additionally, OCIO may engage with Education Superhighway to work with eligible multi-unit facilities in the apartment wifi program.
Planned	PT	Iowa State University GIS Facility	Address data development and error checking.
Planned	PT	Tilson	Broadband Infrastructure field-audit and validation services.

Table 4: Broadband Funding

***Note: OCIO interprets "Expended" to mean funds awarded.**

Source	Purpose	Total	Expended	Available
Connect Every Iowan Broadband Grant Program NOFA #1 (state funding)	Projects that will help reduce the "digital divide" and better deploy technology assets across the state of Iowa with special emphasis on the critical broadband needs of rural Iowans. **Projects must facilitate at least 25/3 service**.	$1,300,000	$1,300,000	$0.00
Empower Rural Iowa Grant Program NOFA #2 (state funding)	Projects that will reduce or eliminate Targeted Service Areas through the installation of broadband infrastructure that, at a minimum, facilitates 25/3 broadband in the Targeted Service Areas forming the basis of the projects.	$5,000,000	$5,000,000	$0.00
Empower Rural Iowa Grant Program NOFA #4 (state funding)	1. Projects that will result in the installation of broadband infrastructure that will facilitate at least 25/3 broadband but less than 100/20 broadband. 2. Projects that will result in the installation of broadband infrastructure that will facilitate 100/20 broadband or faster.	$4,950,000	$4,950,000	$0.00

Empower Rural Iowa Grant Program NOFA #6 (state funding)	1. Projects that will result in the installation of broadband infrastructure that will facilitate 100/100 broadband or faster. 2. Projects that will result in the installation of broadband infrastructure that will facilitate 100/20 broadband or faster in difficult to serve areas.	$97,500,000	$97,500,000	$0.00
Empower Rural Iowa Grant Program NOFA #7 - (American Rescue Plan)	Projects must be designed to provide last-mile broadband service to homes, schools, and businesses in unserved and underserved areas as defined in 35 C.F.R. § 35.1 (“Unserved and Underserved Households and Businesses”) that: 1. reliably meets or exceeds 100/100 broadband; OR 2. in cases where it is not practicable, because of the excessive cost of the project or geography or topography of the area to be served by the project, to provide 100/100 broadband that reliably meets or exceeds 100/20 broadband. Applications shall define a single project proposing a buildout speed of 100/100 broadband or faster or 100/20 broadband or faster, but not both within the same project.	$195,597,131	$195,597,131	$0.00

BroadBand Together Program - (American Rescue Plan)	BBT is available to Iowa communities 1. as an educational resource to better understand broadband. 2. to provide opportunities to enhance or expand broadband alternatives. 3. to coordinate various broadband-related resources; or 4. to work with your selected service provider to explore broadband options.	$1,485,000	$1,485,000	$660,000
Broadband Availability Map - Version 5	Map v5 is designed to facilitate decisions concerning future spending under federally-funded broadband programs. Address locations are displayed on the map with an: “Eligible” determination: Broadband service below 100 mbps down / 20 mbps up (excluding satellite and mobile wireless) with no disqualifying prior state or federal incentive. or an: “Ineligible” determination: Broadband service greater than or equal to 100 mbps down / 20 mbps up (excluding satellite and mobile wireless) and/or with disqualifying prior state or federal incentive.	$816,125	$816,125	$0

US Department of Commerce (Iowa Department of Management)	The purpose of this grant is to support closing the broadband availability gap and support the development of a five-year action plan. The proposed project includes the following planning and pre-deployment activities.	$5,000,000	$5,000,000	$0
National Science Foundation (Iowa State University)	Collaborative research: SII-NRDZ: ARA-NRDZ: From site and application investigation to prototyping and field testing -this research team will conduct preliminary studies leading to field trials of electromagnetic (radio-frequency) spectrum sharing at the ARA wireless living lab for rural broadband, which is sponsored by the NSF platforms for advanced wireless research (PAWR) program.	$485,000	$485,000	$0
US Department of Commerce (Sac & Fox Tribe of the Mississippi in Iowa)	The broadband infrastructure deployment project proposes to replace hardware in tribal homes in order to take advantage of existing fiber. Additionally, the project intends to establish a workforce development program that will train individuals to having a working knowledge of installing and troubleshooting internet fiber.	$424,652.29	$424,652.29	$0

National Science Foundation (Iowa State University)	Collaborative research: CNS core: Real-time liquid wireless networking for data-intensive rural applications -rural broadband is a foundation for a strong rural economy and quality of life, and many rural applications require real-time data-intensive communications. Wireless networks are essential building blocks of rural broadband; however, rural wireless is subject to environmental factors such as weather, terrain, foliage, and crop types and densities, and rural wireless networks need to provide coverage to much larger areas with less density than urban networks. to support real-time data-intensive rural applications, this project will investigate real-time liquid wireless networking (RT-LWN).	$300,000	$300,000	$0
US Department of Agriculture (Winnebago Cooperative Telecom Association)	Pilot Broadband Loan Grant Combo: To encourage and improve the use of telemedicine, telecommunications, computer networks, and related advanced technologies to provide educational and medical benefits through distance learning and telemedicine projects to people living in rural areas and to improve rural opportunities.	$12,556,772	$12,556,772	$0

National Science Foundation (Iowa State University)	Pose: Phase I: An open-source ecosystem for broadband prairie-rural broadband is important for the rural economy and quality of life, yet 39% of the rural US lacks broadband access, and most agriculture farms are not connected at all. To address the challenge, this project proposes to develop the open-source ecosystem for broadband prairie (OPERA). OPERA will enable researchers to transform their rural broadband research experiments into open-source software, data, and hardware designs that can be integrated with open-source platforms to generate rural-focused broadband solutions.	$299,999	$299,999	$0

FCC Rural Digital Opportunity Fund	The Rural Digital Opportunity Fund is the Commission's next step in bridging the digital divide. On August 1, 2019, the Commission adopted a Notice of Proposed Rulemaking (NPRM) proposing to establish the $20.4 billion Rural Digital Opportunity Fund to bring high speed fixed broadband service to rural homes and small businesses that lack it. On January 30, 2020, the Commission adopted the Rural Digital Opportunity Fund Report and Order,[9] which establishes the framework for the Rural Digital Opportunity Fund, building on the success of the CAF Phase II auction by using reverse auctions in two phases. The Phase I auction, which began on October 29, 2020, and ended on November 25, 2020, awarded support to bring broadband to over five million homes and businesses in census blocks that were entirely unserved by voice and broadband with download speeds of at least 25 Mbps. There are 53,819 locations covered by projects in Iowa.	$143,892,544.40	$143,892,544.40	$0

[9] https://www.fcc.gov/document/fcc-launches-20-billion-rural-digital-opportunity-fund-0

FCC Connect America Fund Phase II	The Connect America Fund Phase II (Phase II) is part of the Commission's reform and modernization of its universal service support programs. In 2018, the Commission conducted an auction (Auction 903) to allocate Phase II support to certain eligible areas[10] across the United States. Auction 903 ran from July 24, 2018 to August 21, 2018. 103 bidders won $1.49 billion[11] over 10 years to provide fixed broadband and voice services to over 700,000 locations in 45 states.[12] There are 16,759 locations covered by projects in Iowa.	$54,287,717	$54,287,717	$0

[10] https://www.fcc.gov/maps/caf2-auction-final-areas
[11] https://www.fcc.gov/document/connect-america-auction-expand-broadband-713176-rural-locations
[12] https://www.fcc.gov/reports-research/maps/caf2-auction903-results/

FCC Connected Care Pilot Program	The Connected Care Pilot Program will provide up to $100 million from the Universal Service Fund (USF) over a three-year period to selected applicants to support the provision of connected care services. The Commission adopted final rules for the Connected Care Pilot Program on April 2, 2020 (see FCC 20-44).[13] The Pilot Program will provide funding for selected pilot projects to cover 85% of the eligible costs of broadband connectivity, network equipment, and information services necessary to provide connected care services to the intended patient population. The Pilot Program will not fund end-user devices or medical equipment. The award for Iowa also included five other states.	$6,546,652	$6,546,652	$0
FCC Covid-19 Telehealth Program	The COVID-19 Telehealth Program provides[14] $200 million in funding, appropriated by Congress as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act, to help health care providers provide connected care services to patients at their homes or mobile locations in response to the COVID-19 pandemic.	$5,296,145	$5,296,145	$0

[13] https://www.fcc.gov/document/fcc-fights-covid-19-200m-adopts-long-term-connected-care-study
[14] https://www.fcc.gov/document/fcc-fights-covid-19-200m-adopts-long-term-connected-care-study

USDA ReConnect Program	The ReConnect Loan and Grant Program furnishes loans and grants to provide funds for the costs of construction, improvement, or acquisition of facilities and equipment needed to provide broadband service in eligible rural areas. There are 8,261 locations covered by projects in Iowa.	$78,871,342	$78,871,342	$0
FCC Affordable Connectivity Program	The Affordable Connectivity Program is an FCC benefit program that helps ensure that households can afford the broadband they need for work, school, healthcare and more. The benefit provides a discount of up to $30 per month toward internet service for eligible households and up to $75 per month for households on qualifying Tribal lands. 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 more than $10 and less than $50 toward the purchase price. There are 89,407 eligible households enrolled out of 416,086 possible.	-	-	-

FCC Emergency Connectivity Fund	The FCC's Emergency Connectivity Fund (ECF) is a $7.171 billion program that will help schools and libraries provide the tools and services their communities need for remote learning during the COVID-19 emergency period. ECF will help provide relief to millions of students, school staff, and library patrons and will help close the Homework Gap for students who currently lack necessary Internet access or the devices they need to connect to classrooms. For eligible schools and libraries, the ECF Program will cover reasonable costs of laptop and tablet computers; Wi-Fi hotspots; modems; routers; and broadband connectivity purchases for off-campus use by students, school staff, and library patrons. Congress authorized the Emergency Connectivity Fund as part of the American Rescue Plan Act of 2021. There are 190 school districts or libraries covered under this program in Iowa.	$18,262,059.38	$18,262,059.38	$0

FCC E-RATE	Eligible schools, school districts and libraries may apply individually or as part of a consortium. Funding may be requested under two categories of service: category one services to a school or library (telecommunications, telecommunications services and Internet access), and category two services that deliver Internet access within schools and libraries (internal connections, basic maintenance of internal connections, and managed internal broadband services). Discounts for support depend on the level of poverty and whether the school or library is located in an urban or rural area. The discounts range from 20 percent to 90 percent of the costs of eligible services. E-rate program funding is based on demand up to an annual Commission-established cap of $4.456 billion. There are 668 school districts or libraries covered under this program in Iowa.	$6,315,825.42	$6,315,825.42	$0

FCC Lifeline	Lifeline is a federal program that offers a monthly benefit of up to $9.25 towards phone or internet services for eligible subscribers (up to $34.25 for those living on Tribal lands). A consumer can qualify for the Lifeline benefit if their income is 135% or less than the federal poverty guidelines, or if they participate in SNAP, Medicaid, or other federal programs. Lifeline subscribers can apply their benefit to home or mobile phone service or to high-speed broadband. There are 49,056 eligible households enrolled out of 335,058 possible in Iowa.	-	-	-

NTIA Middle Mile Award (Mid American Energy)	The project proposes a cost-effective approach of utilizing existing and planned communication networks to provide connectivity for ISPs to deliver broadband to end users in need. The project offers an opportunity to leverage the applicant's energy infrastructure management network to provide a high quality, cost-effective middle mile fiber routes. In addition to building new routes to connect its remaining infrastructure and making that fiber available for middle mile broadband, the applicant will be offering unused capacity on its existing fiber network (24 strands) as new open access middle mile. Six segments comprising 775 miles of new build will provide 72 fiber strands for dark fiber leasing. Opening 1,365 miles of applicant-owned fiber to public access will provide 24 strands to facilitate last mile connections. The design also supports efficient connections to unserved and underserved anchor institutions. The resulting network will enable fiber connections that can provide 1 Gbps symmetrical across a wide area of Iowa.	$37,839,311.86	$37,839,311.86	$0

NTIA Middle Mile Award (Omaha Tribe of Nebraska)	The Omaha Tribe of Nebraska and its 100% Tribally owned subsidiary Quick Current LLC have proposed a project to deploy a fiber-based middle mile network to cover currently unserved and underserved Tribal and adjacent rural areas in eastern Nebraska and western Iowa with a specific focus on providing Middle Mile infrastructure and services to the tribal and surrounding areas of The Omaha Tribe of Nebraska and Iowa and the Winnebago Tribe of Nebraska and Iowa.	$36,374,797	$36,374,797	$0

3.2 Partnerships

Table 5: Potential Partners

***Note: OCIO interprets partners to mean an entity that we may engage as needed to help inform the program.**

Partners	Description of Current or Planned Role in Broadband Deployment and Adoption
American Association of Retired Persons (AARP)[15]	AARP may offer insight on efforts related to underrepresented communities.
Community Colleges	OCIO conducted town hall meetings at various community colleges throughout the state.
Community Colleges for Iowa[16]	Community Colleges for Iowa may offer insight on the educational and workforce landscape.
Education Superhighway[17]	OCIO may engage Education Superhighway to help spread awareness of and enrollment in the Affordable Connectivity Program. Additionally, OCIO may engage with Education Superhighway to work with eligible multi-unit facilities in the apartment wifi program.
Iowa Area Education Agencies (AEA)[18]	Iowa's AEAs may offer insight on the educational landscape in Iowa.
Iowa Association of Business and Industry (ABI)[19]	ABI may offer insight related to business and economic development initiatives.
Iowa Association of Chambers of Commerce (IACC)[20]	IACC may offer insight on economic development or workforce.
Iowa Association of Municipal Utilities (IAMU)[21]	IAMU may offer insight on local broadband initiatives, service, and workforce.
Iowa Attorney General Consumer Protection[22]	The Iowa Attorney General Community Protection Division may offer insight on consumer protection related to the challenge process.
Iowa Brotherhood of Electrical Workers (IBEW Local 55)	IBEW Local 55 may offer insight related to unions and workforce.

[15] https://www.aarp.org/
[16] https://www.ccforiowa.org/
[17] https://www.educationsuperhighway.org/
[18] https://www.iowaaea.org/
[19] https://www.iowaabi.org/
[20] https://www.iowachamber.net/
[21] https://members.iamu.org/
[22] https://www.iowaattorneygeneral.gov/for-consumers

Iowa Civil Rights Commission[23]	The Iowa Civil Rights Commission may inform local coordination efforts related to underrepresented communities.
Iowa Communications Alliance (ICA)[24]	ICA may offer insight on the broadband industry in Iowa.
Iowa Communications Network (ICN)[25]	ICN may offer insight on education, healthcare, workforce, and government initiatives.
Iowa Association of Councils of Government (ICOG)[26]	ICOG may offer insight to inform local coordination.
Iowa Department of Agriculture and Land Stewardship (IDALS)[27]	IDALS may offer insight on climate and weather.
Iowa Department of Corrections (IDOC)[28]	IDOC may offer insight on workforce related to populations reentering the job market.
Iowa Department of Education (DOE)[29]	DOE may offer insight on education and workforce.
Iowa Department of Health and Human Services (DHHS)[30]	DHHS may offer insight on existing broadband in healthcare related CAIs as well as solutions to meet the telehealth needs of the future.
Iowa Department of Human Rights (DHR)[31]	DHR may inform local coordination efforts related to underrepresented communities.
Iowa Department of Natural Resources (DNR)[32]	DNR may assist in the coordination with and compliance of environmental requirements.
Iowa Department of Transportation (DOT)[33]	DOT may assist with asset inventories related to public right of ways including roads and bridges.
Iowa Department of Veterans Affairs[34]	Iowa Department of Veterans Affairs may assist with workforce and education related information.
Iowa Economic Development Authority (IEDA)[35]	IEDA may assist on information related to economic development, workforce, and broadband related initiatives.

[23] https://icrc.iowa.gov/
[24] https://www.iacommunicationsall.org/
[25] https://icn.iowa.gov/
[26] https://www.iowacog.com/
[27] https://iowaagriculture.gov/
[28] https://doc.iowa.gov/
[29] https://educateiowa.gov/
[30] https://hhs.iowa.gov/home
[31] https://humanrights.iowa.gov/
[32] https://www.iowadnr.gov/
[33] https://iowadot.gov/
[34] https://dva.iowa.gov/
[35] https://www.iowaeda.com/

Iowa Farm Bureau[36]	Iowa Farm Bureau may offer insight regarding agriculture and rural initiatives.
Iowa Farmers Union[37]	Iowa Farmers Union may offer insight regarding agriculture and rural initiatives.
Iowa Federation of Labor (AFL-CIO)[38]	Iowa Federation of Labor may offer insight on unions and workforce. Iowa has 740 labor unions.
Iowa Finance Authority (IFA)[39]	IFA may offer insight related to community development initiatives.
Iowa League of Cities[40]	Iowa League of Cities may assist with local coordination and local initiatives.
Iowa Nonprofit Alliance[41]	Iowa Nonprofit Alliance may offer insight on workforce, education, and local coordination initiatives.
Iowa Rural Development Council[42]	Iowa Rural Development Council may offer insight related to economic development and rural initiatives.
Iowa State Association of Counties (ISAC)[43]	ISAC may assist with local coordination initiatives.
Iowa State Historical Preservation Office (SHPO)[44]	SHPO may assist in the coordination with and compliance of environmental and historical preservation requirements.
Iowa State University (ISU)[45]	ISU is one of Iowa's three state universities.
Iowa State University Extension and Outreach[46]	ISU Extension and Outreach may offer insight regarding education and research initiatives.
Iowa State University GIS Facility (ISU)[47]	ISU may conduct address data development and error checking.
Iowa Utilities Board (IUB)[48]	IUB may assist with understanding the current state of broadband including pricing structures and environmental concerns.
Iowa Workforce Development (IWD)[49]	IWD may assist with educational and workforce initiatives.

[36] https://www.iowafarmbureau.com/
[37] https://iowafarmersunion.org/
[38] https://iowaaflcio.org/
[39] https://www.iowafinance.com/
[40] https://iowaleague.org/
[41] https://iowanonprofitalliance.org/
[42] https://iowardc.org/
[43] https://www.iowacounties.org/
[44] https://www.iowaculture.gov/history/preservation
[45] https://www.iastate.edu
[46] https://www.extension.iastate.edu/vp/
[47] https://www.gis.iastate.edu/
[48] https://iub.iowa.gov/
[49] https://www.iowaworkforcedevelopment.gov/

Libraries	OCIO conducted town hall meetings at various libraries throughout the state.
Meskwaki Nation	The Meskwaki Nation may assist with local coordination efforts and informing broadband initiatives.
National Association for the Advancement of Colored People (NAACP)[50]	NAACP may inform local coordination efforts related to underrepresented communities.
Omaha Tribe[51]	The Omaha Tribe may assist with local coordination efforts and informing broadband initiatives.
One Iowa[52]	One Iowa may inform local coordination efforts related to underrepresented communities.
Pew Charitable Trusts[53]	Pew may assist with research or best practices related to broadband.
University of Iowa (UI)[54]	UI is one of Iowa's three state universities.
University of Iowa - Iowa Geological Survey (IGS) [55]	IGS may assist with geologic mapping and analysis utilizing their technical expertise.
University of Northern Iowa (UNI)[56]	UNI is one of Iowa's three state universities.
University of Northern Iowa's (UNI) Center for Social and Behavioral Research[57]	UNI will develop and administer a statewide survey to establish a baseline understanding of Iowan's attitudes and beliefs about broadband connectivity, affordability, digital devices, and digital skills. Additionally, UNI will conduct focus groups to further understand the digital landscape in Iowa.

[50] https://naacp.org/
[51] https://www.omahatribe.com/
[52] https://oneiowa.org/
[53] https://www.pewtrusts.org/en/
[54] https://uiowa.edu/
[55] https://iowageologicalsurvey.uiowa.edu/
[56] https://uni.edu/
[57] https://csbr.uni.edu/

3.3 Asset Inventory

OCIO conducted a coordinated inventory process, involving outreach to stakeholders to gather information about digital inclusion and infrastructure assets. This approach enabled the optimal utilization of established relationships, ensuring that stakeholders were queried about any potential asset that could assist the State in ensuring universal high-speed internet access throughout Iowa. This effort extends to helping individuals become proficient in its usage and providing the resources to maximize its value for them.

The inventory process for both BEAD and DE commenced with the identification of potential stakeholders, encompassing State and Local agencies, along with various stakeholders from across the state. Acknowledging the significance of trusted relationships in information gathering, several stakeholders serve as representatives of larger stakeholder groups, thereby extending the coverage of the inventory tools to encompass additional previously unknown or unidentified stakeholders.

Concurrently with the identification and development of stakeholder outreach targets, two independent asset inventory tools were created—one for collecting high-speed internet infrastructure-related assets and one for supplying digital inclusion resources. Inventory tools were developed in such a manner to gather necessary information related to digital resources or infrastructure assets quickly and efficiently.

The Iowa Inventory of Digital Inclusion Resources inventory tool was created to allow for the submission of information related to the services or resources offered to Iowans. The tool was also designed to collect information related to the geographic areas where those resources are made available but also to whom those resources might serve best and in what languages the resources are available.

The Iowa Inventory of High-Speed Infrastructure tool was designed to gather information from stakeholders who may be responsible for various types of infrastructure that could be utilized to expand broadband access in Iowa. This infrastructure includes:

- Access to utility poles or conduits.
- Vertical assets like towers, water towers, or other tall buildings.
- Property that could be leveraged for broadband deployment.
- Public rights-of-way.
- Access to (or information about) dark fiber infrastructure.
- Information about current construction projects.
- Other information about assets that could be purchased, leased, or accessed to help improve access to high-speed internet service.

OCIO staff conducted initial outreach to stakeholders to leverage existing relationships and introduce Connected Nation staff. These initial outreach messages were followed by a minimum of two additional outreach cycles.

Additionally, a webinar was promoted and conducted to provide stakeholders with an update on the progress of the state's current grant programs, the status of BEAD and DE, a request for participation in the asset inventories, and cross-promotion among stakeholder networks.

Upon submission of responses through the inventory tools, necessary follow-up was conducted to clarify responses and collect additional data or resources that may have been mentioned in the inventory response but were not provided. Desktop research of the stakeholder list was performed to encompass as many resources and assets as possible, especially concerning suspected stakeholders who did not participate in the inventory process.

Each response and asset were subsequently compiled, reviewed, and categorized as needed to ensure the comprehensiveness of the various responses and the willingness of those who responded to include their data in the state inventory. In some instances, multiple responses were submitted by the same stakeholder, necessitating the consolidation of these responses.

Narratives were developed for each asset, and file geodatabases were established for both BEAD and DE, representing the most current information available on each asset. This approach facilitates the creation of maps and/or a searchable map product, which could further aid in the long-term cataloging of assets in the state. The two asset tools remain accessible for data submission, and weekly monitoring for new submissions continue.

Of the responses to the infrastructure asset tool, 41% were considered complete, 22% were partial, and 37% were disqualified by participants at the outset as they answered the initial qualifying question regarding the completion of the asset tool. Similarly, regarding the Digital Inclusion Resources asset inventory, 56% of the responses were complete, 24% were partial, and 20% were disqualified. These responses, in conjunction with the findings from the desktop research and data sets acquired from respondents or through research, constitute the present asset inventories for BEAD and DE. These inventories will continue to expand as new stakeholders and assets are identified.

[58] https://ntia.gov/other-publication/2022/digital-nation-data-explorer#sel=internetUser&disp=map
[59] https://data.census.gov/table?q=internet+in+Iowa&tid=ACSST1Y2021.S2801
[60] https://www.educationsuperhighway.org/no-home-left-offline/acp-data/#dashboard

Digital Equity Asset Inventory	
AARP Iowa	AARP Iowa offers OATS (Older Adults Technology Services) Classes and helps identify local OATS licensees. AARP Iowa also engages in statewide fraud education programming through AARP Fraud Watch. Additional services include help enrolling in the Affordable Connectivity Program (ACP), general digital literacy training, cybersecurity or online safety training, and internet usage training.
Access 2 Independence	Access 2 Independence provides independent living services to individuals with disabilities. Access 2 Independence offers a free iPad lending library, general digital literacy training, and technical support. Access 2 Independence also assists consumers in purchasing digital assistive technologies such as screen magnifiers and screen readers. Additionally, Access 2 Independence provides assistance with the Affordable Connectivity Program (ACP).
Boys & Girls Clubs of Central Iowa	Boys & Girls Clubs of Central Iowa provides high-quality programs in a safe environment, with caring staff and volunteers, dedicated to serving as positive role models. Club members can overcome barriers to success because Boys & Girls Clubs of Central Iowa are willing to do whatever it takes to help them achieve great futures. Boys & Girls Clubs of Central Iowa provides STEM resources, as well as education and career development.
Bremer County MHDD	Bremer County Mental Health and Developmental Disabilities seeks to improve health, hope, and successful outcomes for the adults in our region who have mental health and/or intellectual/developmental disabilities, including those with multi-occurring substance use issues, health issues, physical disabilities, brain injuries, and other complex human service needs. Bremer County MHDD offers Telehealth services and help to enroll in the Affordable Connectivity Program (ACP).
City of Des Moines	City of Des Moines Community Recreation Centers, located on opposite sides of the city, offers many services, including public Wi-Fi and computer access.
City of Muscatine	The City of Muscatine has received a grant and is partnering with Lead for America to conduct outreach events, ACP enrollment assistance, internet and computer use, and safety education.

Community Action Agencies HHS	The Division of Community Action Agencies (DCAA) addresses issues facing low-income families by bringing resources to the community level. DCAA links state and federal programs with 16 existing Community Action Agencies and other community-based organizations across the state to serve the elderly, disabled, and low-income Iowans effectively. DCAA offers many online resources available to the public across its many agencies.
Community Broadband Action Network	Community Broadband Action Network works with communities to understand their assets and meet their digital equity needs by providing help with acquiring internet-enabled devices, help to enroll in the Affordable Connectivity Program (ACP), assistance from Digital Navigators, general digital literacy training, college readiness training, cybersecurity or online safety training, help with subscribing to home internet, internet usage training, tech support assisting with electronic devices, and career readiness assistance. In southern Iowa, Community Broadband Action Network also provides direct services: one-on-one skills training, free devices, and support with existing devices.
Computer Science Teacher Association (CSTA)	CSTA Iowa supports and connects educators across Iowa by teaching Computer Science in many ways. CSTA helps Computer Science Teachers with resources to support their practice and connects them with Computer Science educators across Iowa.
Council Bluffs Area Wi-Fi Consortium	The Council Bluffs Area Wi-Fi Consortium offers Blink, a free and open Wi-Fi network that boosts connectivity in many Council Bluffs neighborhoods, all the Council Bluffs Community School District buildings, and many outdoor spaces. BLink is available for students, residents, and visitors.
CultureALL	CultureALL is developing a Digital Storytelling model to support rural Iowans in building community from a distance. This program will not just teach participants how to use storytelling software but also train them on crafting messages and effectively communicating their personal narratives to bridge differences and build a deeper understanding of community members.
Iowa Department of Education	The Iowa Department of Education provides schools and teachers with several resources and guidance on teaching digital literacy, specific software, and coding. Many online resources also focus on helping schools, parents, and students related to digital literacy issues and needs.

Easter Seals Iowa	The Easter Seals Iowa Assistive Technology Program works with Iowans to learn about and access the assistive technology they need to learn, work, play, and participate in community life safely and independently. The Easter Seals Iowa assistive technology team serves Iowans of all ages with all types of disabilities, including persons who are aging. Easter Seals Iowa Assistive Technology Program operates a lending library that allows individuals with disabilities to borrow and trial relevant devices before determining if they should purchase. Easter Seals Iowa Assistive Technology Program offers various services to support awareness and education of assistive technology statewide. Easter Seals Iowa Assistive Technology Program team members provide periodic virtual training covering various topics, from assistive technology devices to do-it-yourself (DIY) assistive technology ideas and Q&A sessions.
Goodwill of the Heartland Career Centers	Goodwill of the Heartland has eight career centers across the state of Iowa that are open to the public. At these centers, people can get assistance learning digital literacy skills and job search. Goodwill of the Heartland offers computer refurbishing services, help to enroll in the Affordable Connectivity Program (ACP), general digital literacy training, training with specific software, workforce development skills, cybersecurity, or online safety training, helps with public assistance portals, help with subscribing to home internet, internet usage training, tech support providing assistance with electronic devices, career readiness assistance, and public access to computers.
Iowa City Senior Center	The Iowa City Senior Center (ICSC) is a community center offering programs, services, and facilities geared toward older adults. Services are offered throughout Johnson County and include online cybersecurity classes.
Iowa City Tech	Iowa City Tech offers various technology services, such as device setup and repair. Additionally, Iowa City Tech provides extensive online resources to assist with computer, device, and overall technology needs.
Iowa Connections Academy	Iowa Connections Academy is a fully accredited virtual school that makes earning a tuition-free K–12 education possible for parents and students looking for an alternative to traditional brick-and-mortar public schools. In partnership with the CAM Community School District, Iowa Connections Academy is state certified and open to students located throughout Iowa, including Dallas County, Story County, and Johnson County.

Iowa Department for the Blind	Iowa Department for the Blind seeks to empower blind Iowans to be gainfully employed and live independently. Iowa Department for the Blind provides help with acquiring internet-enabled devices, training with specific software, college readiness training, internet usage training, and career readiness assistance to those they serve.
Iowa Department of Corrections	The Iowa Department of Corrections (IDOC) is responsible for nine correctional facilities across the state and seeks to assist individuals in becoming productive members of their communities as they reenter society. The IDOC offers online training to case managers through their DRAOR training.
Iowa Department of Transportation	The Iowa Department of Transportation offers public Wi-Fi access at all the state's full-service rest areas and helps with public assistance portals.
Iowa Department of Veterans Affairs	Iowa Department of Veterans Affairs users without the internet can work face-to-face with their county VSOs to submit claims, assistance requests, and other access to state and federal veterans' benefits and programs. Iowa Department of Veterans Affairs provides workforce development skills training, help with public assistance portals, telehealth services, and career readiness assistance.
Iowa Farm Bureau	Iowa Farm Bureau remains committed to the people, progress, and pride of Iowa. As an organization, they "… cherish and represent the values Iowans embody: dedication to hard work, passion for the land, and character rooted in faith and family." Iowa Farm Bureau offers some documents related to cybersecurity or online security training.
Iowa Hospital Association	The Iowa Hospital Association makes some of their training available online to those health care professionals associated with the organization and who are seeking training in various areas.
Iowa Law Enforcement Academy	The purpose of the Iowa Law Enforcement Academy is to provide training for Iowa's law enforcement professionals. By offering online training, Law Enforcement Academy ensures that Iowa's law enforcement community has ample opportunities to stay current and receive the necessary training for their jobs.

Iowa Primary Care Association	Iowa Primary Care Association is the voice and safety net for underserved/under-resourced patients in the state, providing direct patient care through telehealth and digital patient engagement through patient portals and smartphone apps. Iowa Primary Care Association mission is “health equity for all,” which means engaging with patients and supporting them in adopting digital tools to help them own their health care journey.
Iowa Vocational Rehabilitation Services IWD	Iowa Vocational Rehabilitation Services (IVRS) works with individual clients based on their needs. If an individual needs assistance with digital inclusion, IVRS will work through a Community Resource Partner to assist with public Wi-Fi access, training with specific software, college readiness training, workforce development skills, help with public assistance portals, internet usage training, and career readiness assistance.
Knight Moves	Knight Moves works to empower Native American, rural, and urban underserved communities and employ them to break through barriers blocking socio-economic inclusion. Knight Moves provides training with specific software, college readiness training, workforce development skills training, computer coding education, and career readiness assistance.
New Horizons	New Horizons provides training for every member of an organization focusing on Leadership & Development, Information Technology, Project & Service Management, Cloud & Big Data, and everyday Business Applications. Services include computer classes, software training, and computer coding certificate courses.
Office of the Chief Information Officer	The Office of the Chief Information Officer is dedicated to offering government and citizens information technology and business solutions through guidance, service delivery, and partnerships. The Office of the Chief Information Officer provides excellent resources for Internet services and cybersecurity.
Partnership for a Healthy Iowa	Partnership for a Healthy Iowa’s mission is “Connecting young Iowans, and those who care for them, with the resources they need to live free of alcohol, nicotine, drugs, substance abuse, and other high-risk behaviors.” Among their various services, Partnership for a Healthy Iowa also provides general digital lit training and online resources on cybersecurity and media literacy.

Polk County Behavioral Health and Disability Services	“Polk County Behavioral Health & Disability Services Department exists to support improved access to health care and to promote full citizenship for people with mental illness, intellectual disability, or developmental disabilities.” Polk County Behavioral Health & Disability Services offers online training and webinar materials for those needing such support.
Sac and Fox Tribe of Iowa	The Sac and Fox Tribe of Iowa provides internet access to those who request service currently residing in all Tribal homes in the Meskwaki Settlement. The Sac and Fox Tribe of Iowa also provides public Wi-Fi and access to computers.
School Administrators of Iowa	The School Administrators of Iowa provides support to more than 2,000 educational administrators in Iowa. They offer a range of resources that cater specifically to education professionals and schools, students, and parents.
Senior Care of Iowa 211 Iowa	211 Iowa/Senior Care of Iowa provides computer education and access to computer technologies to individuals 55 years of age and older to enhance their lives and enable them to share their knowledge and wisdom. Services offered include general digital literacy training, training with specific software, workforce development skills training, and career readiness assistance.
Iowa State Librarian	The State Library provides a variety of online resources for Iowans. These resources are specifically for several different user types, including all online users, state library card holders, law library users, and specific online resources focused on local libraries and their needs. These resources include career training, workforce development, library continuing education, law resources as well as public access to Wi-Fi. The State Librarian also offers tools for local libraries to help support Wi-Fi access in local libraries.
Tech4Impact	Tech4Impact offers various consulting services to individuals with and without disabilities and businesses in the areas of assistive technology and accessible digital materials, including assistive technology, smart home technology, accessible gaming, accessible websites, and general technology training. Tech4Impact also travels to Iowan’s homes or completes virtually - one-on-one assessments, setup, and training.
The Lonely Entrepreneur	The Lonely Entrepreneur Learning Community is a one-stop shop for the knowledge, tools, and support a current or aspiring entrepreneur needs to start or grow a business.

T-Mobile	T-Mobile is a national wireless telecommunications company, offering both mobile and home internet services. T-Mobile also participates in the Affordable Connectivity Program and offers other low-cost internet and device services.
UScellular	UScellular is dedicated to promoting widespread access to Information and Communication Technologies (ICTs), recognizing the significance of providing high-speed wireless technology access to all individuals and communities, especially those facing disadvantages. UScellular promotes Digital Equity, where everyone has the necessary technology capacity to engage in society, democracy, and the economy. UScellular is focused on Availability, Affordability, and Digital Literacy. UScellular offers help with acquiring internet-enabled devices, enrolling in the Affordable Connectivity Program (ACP), accessing public assistance portals, subscribing to home internet, and tech support providing assistance with electronic devices.
U.S. Department of Veterans Affairs	The U.S. Department of Veterans Affairs offers career readiness training and workforce development through several online programs. These include programs like the VET TEC program, which is designed to help prepare qualifying individuals for jobs in the high-technology industry.
Veterans Tech Support	Veterans Tech Support provides computer equipment to veteran organizations for use by veterans and their families on an on-demand basis. Veterans Tech Support also provides monthly classes ranging from cybersecurity, basic computer skills, specific software usage, telehealth portal usage, online safety, virtual meetings, and more. The aim is to provide digital literacy and self-sufficiency to veterans and their families. Individual technical help is also provided on an as-needed basis. All classes are free of charge, and the equipment is funded by donations and grants received from Veterans Tech Support, a 501(c)(3) based in Iowa.

BEAD Asset Inventory	
Active Rail Lines	The Iowa Department of Transportation maintains data on active rail lines. This layer can assist in understanding potential permitting or obstacles to deployment.
Antenna Structure Registration	The Federal Communication Commission maintains the Antenna Structure Registration (ASR) for storing and maintaining the

	location, height, and several other factors for antenna structures. This data is useful in the identification of potential vertical assets.
Bridge Line	The Iowa Department of Transportation maintains data bridge structures. This layer can assist in understanding potential permitting or obstacles to deployment.
City of Garden Grove	The City of Garden Grove maintains several assets that could be leveraged for the expansion of services in and near the city. This includes a water tower, rights of way, and multiple municipally owned properties, each of which could help support broadband deployment and expansion.
Community Broadband Action Network	The Community Broadband Action Network has been working with communities throughout the state and can be considered a resource regarding potential assets in various communities.
Electrical Service Boundaries	The Iowa Utilities Board maintains location data related to the service boundaries of Iowa's Electric Service providers. This boundary data can help support broadband planning and expansion by identifying primary pole owners and general locations.
Existing Right of Way	The Iowa Department of Transportation maintains an Existing Right of Way data layer that represents data collected from each county and the current rights of way for primary routes.
IA TelCo Exchange Boundaries	The IA Telephone Exchange Boundaries data is maintained by the state and provides boundaries for the state's incumbent local exchange carriers. This data can be used to help support planning and expansion of services by helping identify potential pole owners and partners.
IBEW Local 55	The IBEW Local 55 supports construction throughout the state and can serve as a resource in the planning and expansion of infrastructure throughout the state.
Iowa Department of Corrections	The Iowa Department of Corrections

	maintains a set of communications towers throughout the state that could be leveraged for the expansion of broadband internet.
Iowa Department of Transportation	The Iowa Department of Transportation maintains the state's roads and much of the key infrastructure throughout the state. This includes information related to roads, bridges, rights of way, etc.
Iowa PBS	The Iowa PBS owns four communications towers in the state, which may be suitable for expanding broadband services.
Public Railroad Crossings	The Iowa Department of Transportation maintains a data set of the railroad crossings in the state, which can be useful in the planning and expansion of broadband.
T2021 Network Map AM Endpoints March 2019	The Iowa Communications Network maintains a set of endpoints to which their services are available throughout the state. These endpoints may assist in the planning, partnership, and expansion of broadband in the state.
T2021 Network Map Fiber	The Iowa Communications Network (ICN) maintains a map and information related to the ICN-owned fiber. This data may assist in the planning, partnership, and expansion of broadband in the state.
T2021 Network Map Leased Connections	The Iowa Communications Network(ICN) maintains a map and information related to the ICN-leased fiber. This data may assist in the identification of critical network resources.
Taylor County	Taylor County maintains infrastructure information as well as permitting, which can take up to two weeks to complete. This county is prepared to assist with planning and expansion.

3.4 Needs and Gaps Assessment

In today's increasingly connected world, access to reliable and high-speed broadband internet is crucial for individuals and communities to fully participate in the digital age. However, despite significant progress, there are still notable gaps and needs when it comes to broadband service. The following utilizes 2021 data from the NTIA Digital Nation Data Explorer tool[58].

According to the data, approximately 85.7% of people age 3+ in Iowa utilize the internet at any location, which is slightly higher than the national average of 80.5%. This indicates that a majority of the population recognizes the importance of internet access for various aspects of their lives, such as education, work, communication, and entertainment.

However, when we narrow down the usage statistics to internet access specifically at home, the figures show that 79.8% of people age 3+ in Iowa indicate internet connectivity in their home. The national average is 75.6%. While this is a significant portion of the population, it also highlights that there are still around 17.9% of people age 3+ in Iowa who do not have internet access at home, representing a notable gap in connectivity. It's important to note that in 2021 the U.S. Census Bureau[59] estimated that 88.6% of households in Iowa had an internet subscription which includes: dial up with no other type of internet subscription, cellular data plan, broadband internet, or satellite internet service. This data also includes an estimate that approximately 5.8% of households in Iowa lack any type of computing device such as a smartphone or computer.

When exploring the reasons why these individuals do not use the internet at home from the NTIA Digital Nation Data Explorer tool, several factors come to light. The largest group, accounting for 70.2% of non-users, claim that they simply do not need internet access. This may be due to lack of digital literacy or an underestimation of the benefits and opportunities that internet usage can provide.

Another significant barrier mentioned by 10.1% of non-users is the perceived expense of internet service. Affordability remains a key concern for a portion of the population, highlighting the importance of exploring solutions that address the cost barriers and make broadband more accessible to all. Pair this with the fact that Iowa has a very low enrollment rate of around 18%[60] in the Affordable Connectivity Program, and it's easy to see an opportunity for addressing the affordability component.

A smaller percentage of individuals, comprising 3.7% of non-users, express concerns about privacy or security when it comes to internet usage. Addressing these concerns and providing education on online safety can help alleviate hesitations and encourage greater adoption of internet services.

[58] https://ntia.gov/other-publication/2022/digital-nation-data-explorer#sel=internetUser&disp=map
[59] https://data.census.gov/table?q=internet+in+Iowa&tid=ACSST1Y2021.S2801
[60] https://www.educationsuperhighway.org/no-home-left-offline/acp-data/#dashboard

Lastly, 4.1% of non-users cite the unavailability of broadband service in their area as a primary reason for their lack of home internet access. This underscores the existence of geographic gaps and the need to focus on expanding broadband infrastructure to reach unserved communities.

As discussed in section 5.6, the FCC National Broadband Map Version 2 indicates that Iowa has 84,099 unserved locations which account for approximately 6% of broadband serviceable locations in the state. The interactive map[61] shows that 89.99% of locations are covered utilizing wired and licensed fixed wireless technologies. It also shows the following percent of coverage based on different speeds:

- 98.17% coverage at .2/.2
- 97.15% coverage at 10/1
- 85.15% coverage at 250/25
- 36.35% coverage at 1000/100

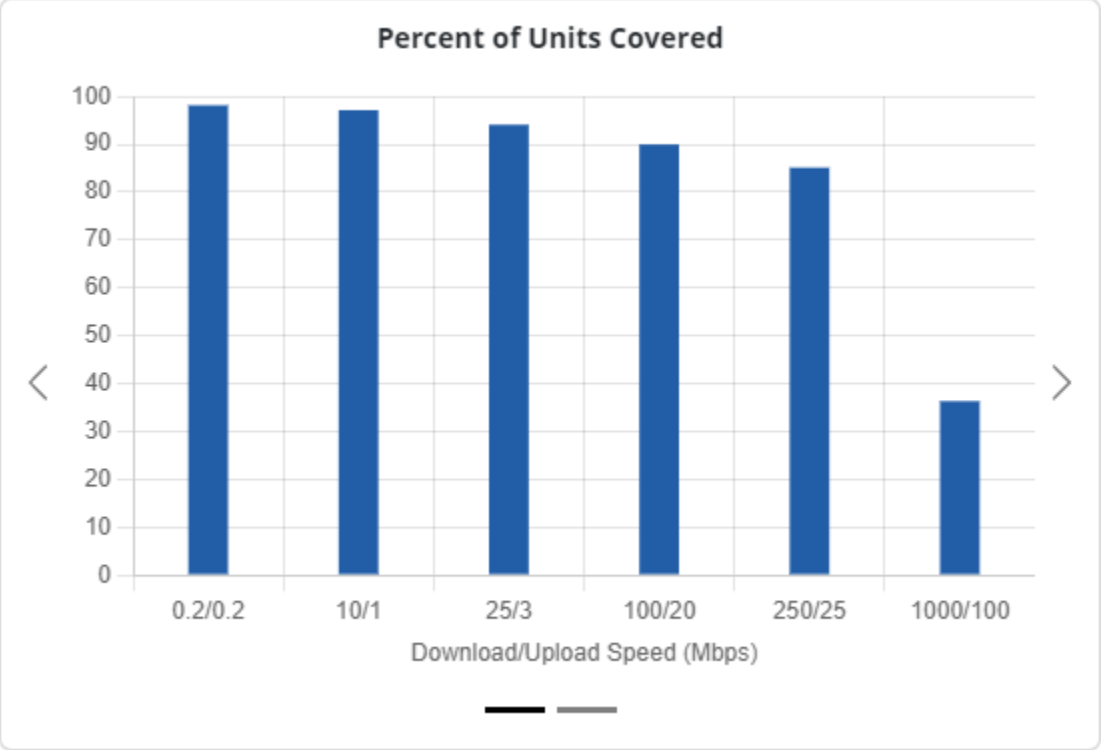


Figure 2: Percent of Units Covered graph

[61]https://broadbandmap.fcc.gov/area-summary/fixed?version=dec2022&geoid=19&type=state&zoom=6.75&vlon=-93.711386&vlat=42.034488&br=r&speed=100_20&tech=1_2_3_7

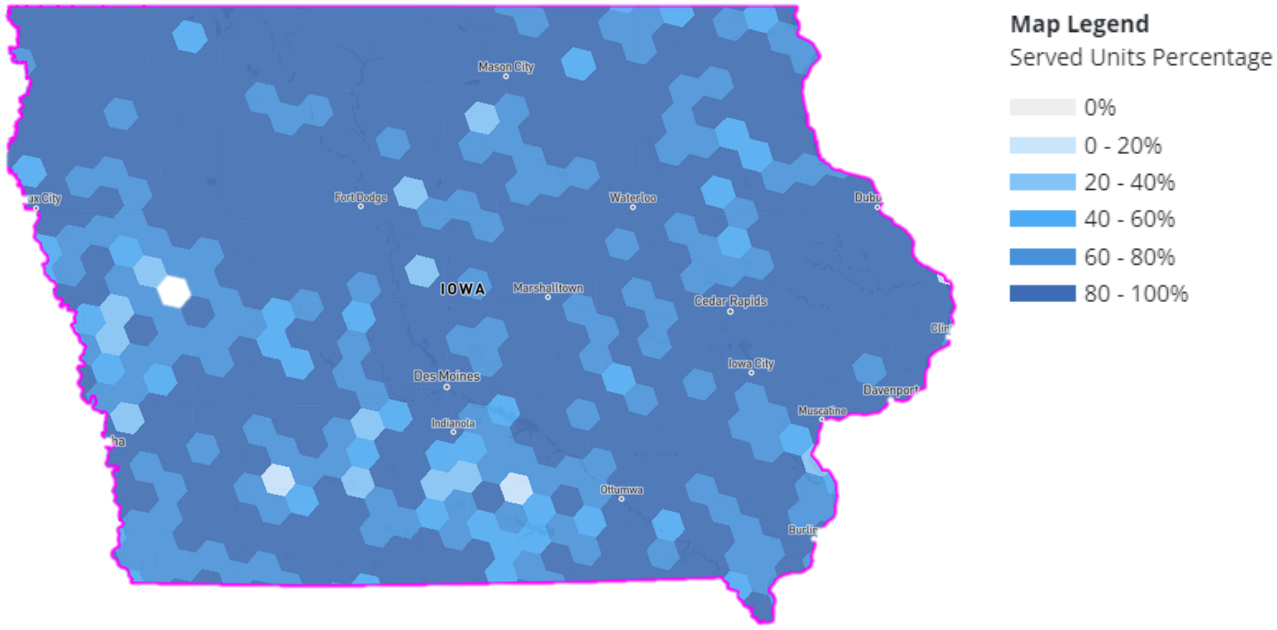


Figure 3: Broadband coverage utilizing wired and licensed fixed wireless technologies

To bridge these gaps and meet the broadband service needs of the population, it is crucial to develop comprehensive strategies that address the issue in a holistic approach. This includes efforts to increase digital literacy and awareness, promote affordability and accessibility, enhance privacy and security measures, and expand broadband infrastructure into unserved areas. By prioritizing these areas of concern and leveraging programs such as BEAD and DE, we can work towards a more connected and inclusive society, where individuals and communities have equitable access to the opportunities and resources that broadband provides.

We intend to utilize an internal mapping team along with external vendors and the National Broadband Availability Map (NBAM) tools to determine unserved and underserved locations and identify CAIs without gigabit service. Identify CAIs without gigabit service.

Digital Equity Plan

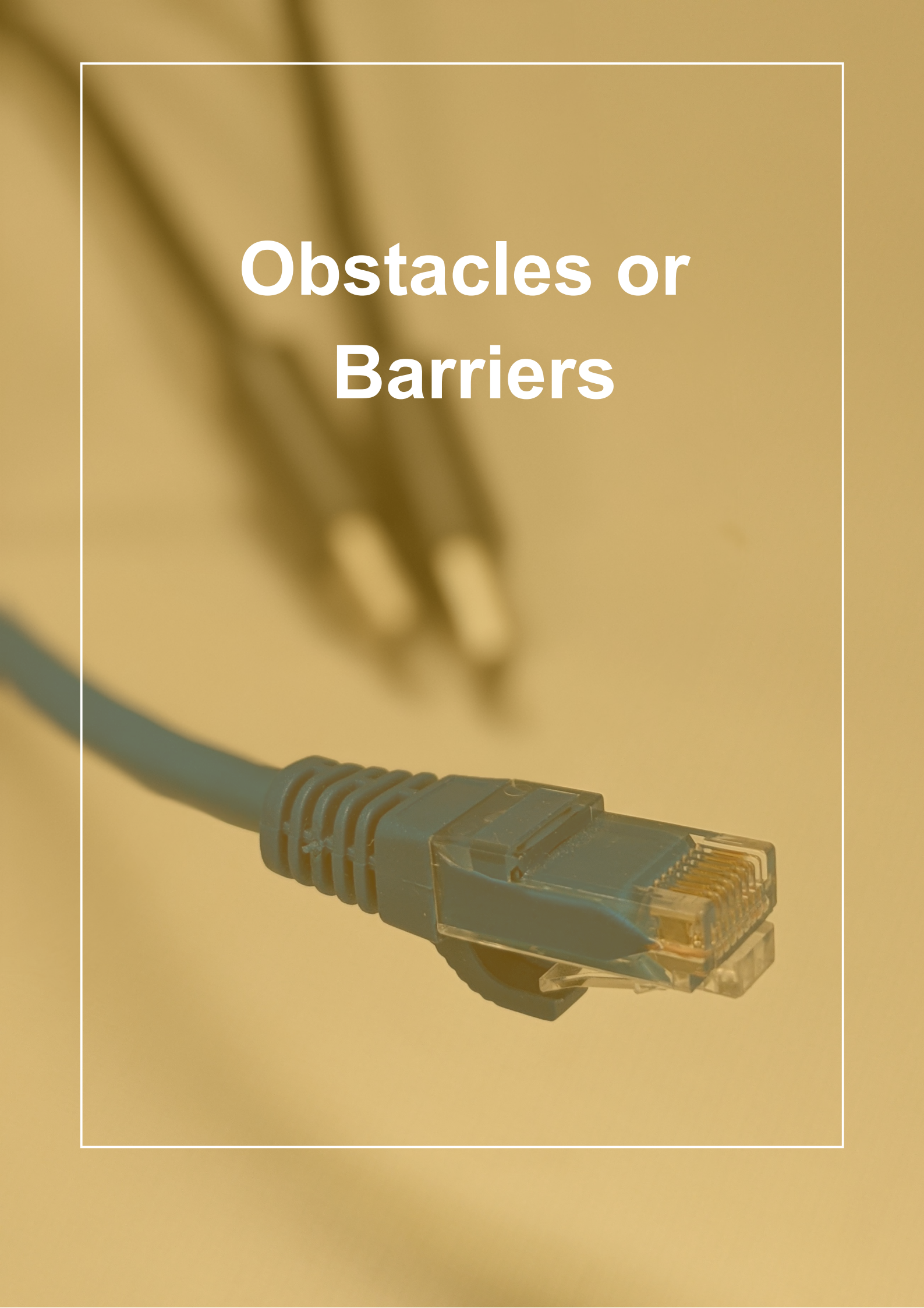
The State of Iowa applied for and received funds to develop a Digital Equity Plan from the Digital Equity Act State Planning Grant Program Notice of Funding Opportunity. The performance period for the creation of the Iowa Digital Equity Plan differs from that of the BEAD Five-Year Action Plan and has an anticipated completion date of the second quarter of 2024. The State of Iowa will utilize an extension to the original performance period to optimize collaboration with partners and continue to build networks of professionals to help develop holistic strategies around affordability, devices, digital skills, technical support, and digital navigation. Those strategies include but are not limited to any overlapping priorities that BEAD funding can help address digital equity issues.

Iowa's Digital Equity Plan Vision, as developed by the Digital Equity Core Planning Team, a group of professionals representing Covered Populations and facets of digital equity, states:

"All Iowans will have access to affordable high-speed broadband internet, useful devices, and the training and support to use the services and equipment to meet their needs for full participation in society."

The State of Iowa contracted with Connected Nation to collect information necessary to develop a Digital Equity Asset Inventory. Full results of that data collection effort will be included in the Digital Equity Plan and housed on the Digital Equity webpage. That information, combined with results from the state-wide public meeting tour and the statewide survey, help inform the needs assessment. The asset inventory and the needs assessment then inform the network of professionals in order to develop holistic strategies necessary in addressing the needs of Covered Populations. Near the end of the performance period, the State of Iowa will run a public comment period for the Digital Equity Plan and will consider public comments before submitting the final plan.

Obstacles or Barriers



Population Density:

- Iowa has vast rural areas with lower population density in many areas of the state which creates obstacles to providing reliable broadband access to all citizens. Higher costs per passing, fewer subscribers per line mile of network, and similar ongoing maintenance costs can result in lower return on investment (ROI) than comparable urban networks. After seven grant rounds in which providers were permitted to choose their project area, it is apparent that more densely populated geographic areas receive greater interest from prospective applicants. As a result, less densely populated geographic areas throughout the state have been left without adequate broadband access, hindering their ability to participate fully in the digital age.
- Additional feedback from providers in the state has indicated that limiting the grant match to 75% in the most difficult to serve locations will be insufficient to incentivize buildout due to minimal ROI. This may make it more challenging to provide broadband access to unserved and underserved communities.

Local Government Engagement

- Initial outreach efforts have revealed a diversity of opinions on the part of local officials concerning the role of local government in broadband development. While the Office received considerable response to its community-focused Invitation to Qualify, many applications were submitted by regional councils of government or local interest groups. Of the 99 applications submitted to the ITQ, many local government resolutions were incorporated to reduce permitting and ROW barriers for telecommunications providers, but only $3.4 million in local matching funds were offered for future broadband construction. Anecdotally, local governments have expressed concerns regarding the ability to fund broadband development. As a result, while statewide surveys of local government plans have not been conducted, it is anticipated that few local governments in Iowa will seek to construct, own, or operate broadband networks. This will leave the primary responsibility for broadband construction in rural and unserved areas to private companies seeking suitable return on investment. This phenomenon may complicate the expansion of broadband in certain areas of the state.
- The Office has made attempts to conduct outreach to local governments, including through Iowa's Broadband Together™ program, which sets forth an 8-step process to assist local governments in the development of structural components required to meet broadband goals. Dozens of initial engagements

and outreach activities have been conducted under the program, but the work has not culminated in substantive new activity on the part of local governments. There are local governments in Iowa that are actively involved in broadband planning efforts, while many others do not have the time or resources to engage in broadband planning or lack the skills or knowledge to effectively pursue broadband activities.

BEAD Project Requirements/Compliance Concerns

- Iowa has completed eight rounds of notice of funding availability for broadband projects using state and federal funds. Generally, we are very familiar with the requirements and associated compliance elements of these funding sources. BEAD has added a number of additional project compliance requirements, however. These requirements represent the most burdensome regime that we have seen for broadband funding sources, and not only make the program more difficult to administer but also more difficult for prospective applicants to participate. Iowa is composed of many small and independent providers with limited staff. These providers may not possess the internal capacity to manage a substantial federal compliance regime. Given that much of Iowa is served by locally-based independent telephone companies and cooperatives, this may have the effect of reducing the number of providers who choose to participate in the program.

Supply Chain Concerns

- Providers in Iowa have encountered significant supply chain disruptions, as well as substantial cost increases for goods and services necessary to construct broadband networks. These concerns extend to the timelines imposed by BEAD. Buildout must be complete in four years, however feedback from providers indicates that orders of fiber optic cable may extend to two years for delivery. They also indicated that the supply chain issues can change over time in ways that are difficult to predict. Fiber optic cable is a large concern, but other materials have also been in short supply periodically.

- These concerns are not isolated to materials. Feedback also identifies similar issues related to booking subcontractors. It is likely in most situations that subcontractors are also booked out one to two years in advance causing increased stress to meet the timelines imposed by BEAD. Further, providers have communicated that subcontractors may be unwilling to participate in competitive procurement processes as required by BEAD, thereby adding time and cost to projects.

Topographic and Geologic Concerns in Rural Areas

- In some cases, Iowa's landscape[62] includes areas that have great topographic variability which may increase the number of wireline miles or the number of towers that need to be installed to cover locations that are not in line-of-sight as compared to an area with less topographic variability. Surficial bedrock also increases trenching costs. Providers have expressed concerns regarding the increased costs of building in these areas due to the complications associated with boring through rock. OCIO has seen real examples of this concern in previous projects. In Allamakee and Clayton counties, costs significantly increased due to machine failure from boring through rock and a lack of understanding of how such topographical features might impact project construction.

Low Income Households

- Analysis of economic trends between 2011 and 2021 conducted by Iowa State University[63] shows that rural and micropolitan areas of the state have a lower household income compared to core metro counties and suburban areas. The household income of these areas is also growing at a slower rate comparatively. Because these communities have a higher proportion of low income households in Iowa, providers who build in these areas may realize a lower take rate and a commensurate reduction in ROI. According to the most recent U.S. Census data,[64] Iowa's rural population accounts for 46% of the state's total population. That percentage of rural to total population is higher in Iowa than 38 states.

Potential Solutions

OCIO has developed initial ideas for solutions to address the above concerns. Mapping initiatives conducted internally by OCIO, as outlined previously in this document, will assist in the identification of unserved and underserved locations consistent with the rules, regulations, and processes established for making these determinations. These initiatives will help OCIO gain a more precise understanding and assessment of the actual barriers residents are facing that impact their ability to access reliable broadband services. It will also help shape an understanding of the different considerations faced by rural and urban populations throughout the state, and help establish a baseline to support solutions to the population density and low-income household concerns that were identified here.

Through the outreach and communications initiatives outlined throughout this document, OCIO will be able to provide assistance to communities as well as gather information on individual community needs surrounding broadband. A key component of this is the no-cost planning

[62] https://www.iihr.uiowa.edu/igs/publications/uploads/ofm-2010-01.pdf
[63] https://smalltowns.soc.iastate.edu/wp-content/uploads/sites/163/2023/03/SOC-3104B_Econ2.pdf
[64] https://www.icip.iastate.edu/tables/population/urban-pct-states

services offered to local governments interested in pursuing broadband projects. Providing education and assistance to communities wishing to communicate their broadband needs and pursue broadband solutions along with the ITQ process, will also help to increase local government engagement and potentially address certain compliance and BEAD requirement concerns.

To help alleviate concerns from the provider community about meeting the unfamiliar federal regulations and compliance requirements, OCIO and partners will provide education and technical assistance to potential subgrantees including guidance, workshops, and training. This will help ensure compliance with the 2 CFR 200, NEPA, NHPA, Buy American Act, labor standards, and any other areas of concern as identified by the providers. OCIO has engaged the Iowa Department of Natural Resources (DNR), the State Historic Preservation Office (SHPO), and the State Climatologist of Iowa within the Iowa Department of Agriculture & Land Stewardship (IDALS) to assist in providing guidance related to environmental, historic and cultural review.

As for the topographic and other geologic concerns, the Iowa Geological Survey[65] (IGS) at the University of Iowa may prove to be an important resource. As mentioned on their website, IGS was formed in 1892 and conducts foundational research to provide Iowan's with the knowledge needed to effectively manage natural resources for long-term sustainability and economic development. They possess advanced expertise, instrumentation, and equipment that can provide critical information to aid planning and decision-making efforts. Popular services include groundwater modeling, geophysical analysis, drilling and sediment analysis and geologic mapping. OCIO is eager to explore how IGS could potentially assist with BEAD related initiatives. The IGS provides landform regional as well as depth to bedrock data that may be useful for the OCIO to use in analysis. In addition, the State Soil Survey provides generalized soil maps that provide soil and other characteristics.

[65] https://iowageologicalsurvey.org/from-the-state-geologist/

Implementation Plan

5.1 Stakeholder Engagement Process

As OCIO prepared for future grant opportunities to expand broadband access within the remaining unserved or underserved locations in the state of Iowa, a new strategy driven by collaboration with Iowa communities was deployed to (1) align with federal program guidelines and, (2) help target limited funding to communities of greatest need.

Invitation to Qualify (ITQ)

The ITQ is a process for communities to identify geographic areas with critical need for broadband investment. The goal of ITQ outreach is to encourage communities to submit an application to qualify as a Broadband Intervention Zone and ultimately attract provider involvement. The ITQ process has been met with largely favorable responses by the public. Many individuals, communities, and organizations have been appreciative of the approach to allow local communities to 'raise their hand' regarding broadband issues in their area. Service providers have also been largely supportive of this process. The full set of ITQ documents can be viewed on the OCIO website.[66]

Prior broadband funding opportunities made available through OCIO allowed broadband service providers to identify areas in the state where the provider wanted to build. To better target areas of greatest need, the Office solicited participation from communities to identify their interest in broadband funding through the ITQ program. Successful responses to the ITQ identified a list of communities for which providers should give special consideration as they establish future broadband development plans and apply to grant opportunities issued by OCIO. This approach promoted involvement within communities that face the greatest need of broadband due to barriers in geographic, socioeconomic factors, and a variety of other determinants that prevent full engagement in a digital society. Although the ITQ did not implement a BEAD-specific process, the OCIO utilized many BEAD concepts in the evaluation criteria in anticipation of BEAD guidelines and objectives. For example, the ITQ solicited from applicants information such as barriers to broadband construction, as outlined in the BEAD NOFO, and also used the BEAD definitions of unserved and underserved locations.

There were 99 applications submitted for the ITQ which cover over 22,000 unserved and underserved locations. OCIO evaluated successful applications and ranked each one according to a Broadband Readiness Score which was informed by seven factors outlined within the ITQ. Those Geographic Areas of Concern then became 96 Broadband Intervention Zones (BIZ). OCIO can now use the BIZ's gathered from the ITQ process to assist in the prioritization for future grant opportunities. The numbers associated with the BIZ's in Figure 2 indicate their ranking (1 being the highest).

[66] https://ocio.iowa.gov/invitation-qualify-001

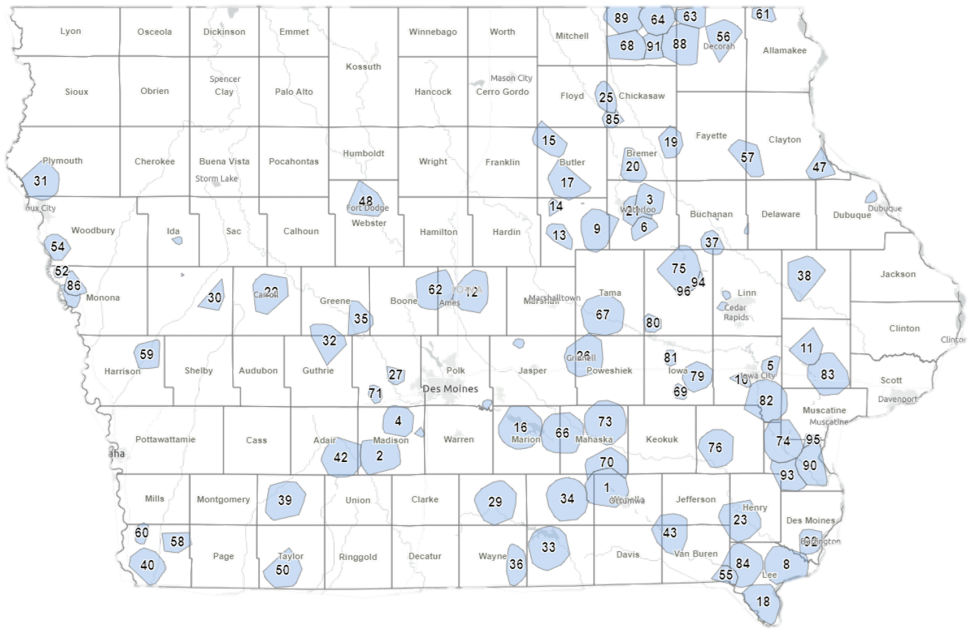


Figure 2: Broadband Intervention Zones (BIZ) Locations

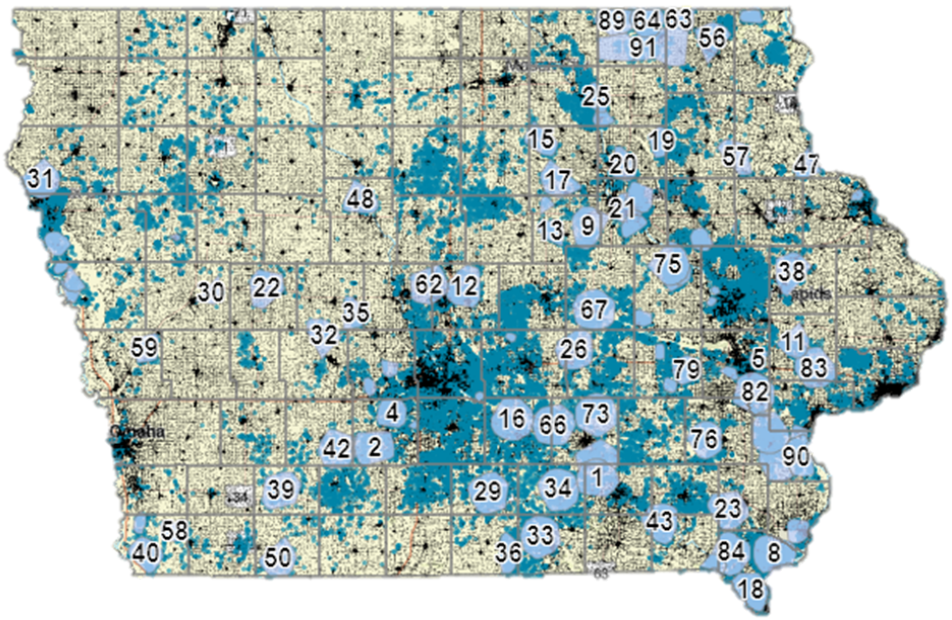


Figure 3: Map v5 used in NOFA 8[67]

[67] https://ocio.iowa.gov/empower-rural-iowa-broadband-grant-program-notice-funding-availability-008

BEAD and DEA Outreach Plan

In 2023, the OCIO also organized and delivered 55 town hall style public meetings across the state. This community outreach initiative helped disseminate information about the BEAD and DEA programs and served as an important venue to gather information about the challenges Iowans face in realizing full participation in our digital society. In addition to press releases and marketing through social and print media, the public meeting plan was shared via professional networks established by the BEAD and Digital Equity teams to professionals working with covered populations to ensure awareness of and allow the opportunity to attend meetings to represent the needs of those populations. Attendees of the meetings included members or representatives of all eight covered populations identified in the Digital Equity Act. The meeting locations covered:

- 55 meeting locations (35 rural, 20 urban) over a three month period between March and May.
- All urban areas, cities with populations in excess of 50,000 Iowans held at least one public meeting in the metro area.
- Rural communities with geographic spread to cover each quadrant of the state plus central Iowa.
- One meeting hosted in partnership with the Meskwaki Nation.
- Locations included utilizing the community colleges network and three Board of Regents institutions, which played an important role in hosting OCIO throughout the state, initiating a partnership in future digital equity work.
- The remaining locations were hosted by public libraries, another important partner for the OCIO in digital equity implementation work.

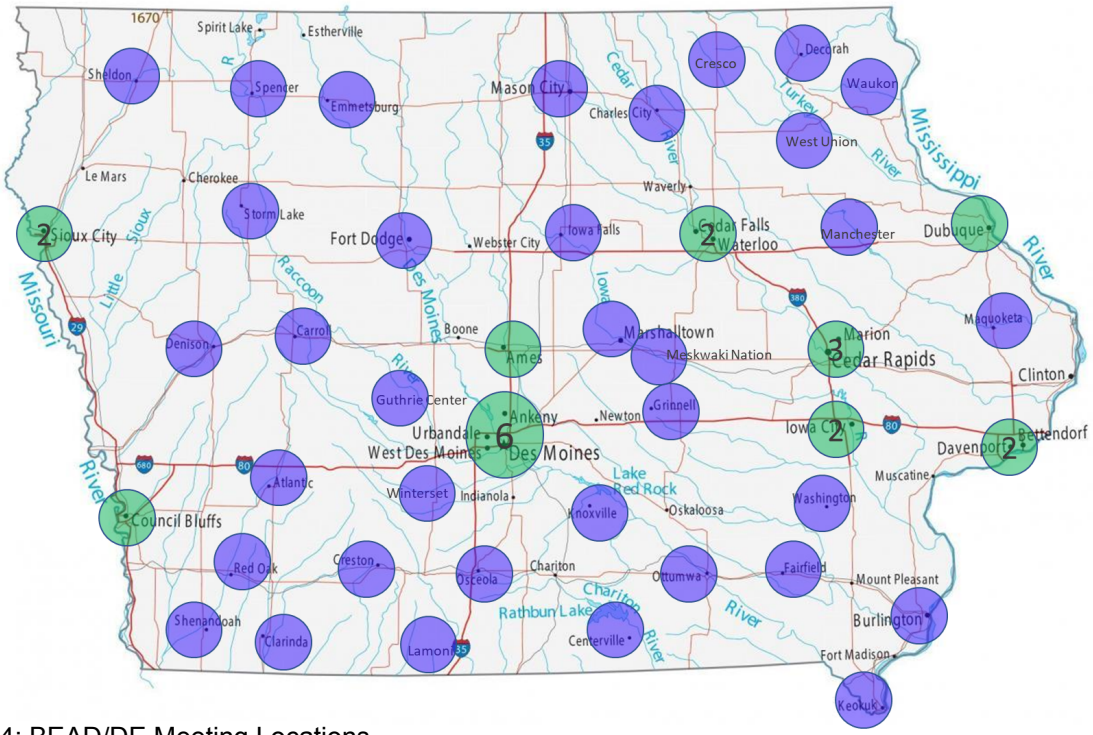


Figure 4: BEAD/DE Meeting Locations

Meeting Locations:

City	Date		City	Date		City	Date
Ames	4/25		Des Moines (Downtown)	3/16		Meskwaki Nation	5/9
Ankeny	3/23		Des Moines (South)	3/30		Osceola	4/18
Atlantic	4/11		Des Moines (East)	4/17		Ottumwa	3/30
Bettendorf	3/21		Dubuque	4/18		Red Oak	4/10
Burlington	4/6		Emmetsburg	4/25		Sheldon	4/24
Carroll	5/9		Fairfield	4/3		Shenandoah	5/11
Cedar Falls	4/6		Fort Dodge	5/2		Sioux City (East)	3/27
Cedar Rapids (South)	3/15		Grinnell	5/15		Sioux City (Downtown)	3/28
Cedar Rapids (Public Library)	4/11		Guthrie Center	5/10		Spencer	4/27
Centerville	4/20		Iowa City	4/12		Storm Lake	4/24
Charles City	5/3		Iowa Falls	5/16		Urbandale	4/10

Clarinda	4/3		Keokuk	4/5		Washington	4/13
Coralville	3/29		Knoxville	3/27		Waterloo	4/19
Council Bluffs	3/22		Lamoni	3/28		Waukon	5/23
Cresco	5/17		Manchester	5/22		West Des Moines	4/24
Creston	4/12		Maquoketa	4/20		West Union	5/24
Davenport	3/14		Marion	4/5		Winterset	3/29
Decorah	5/18		Marshalltown	5/25			
Denison	5/8		Mason City	5/4			

Figure 5: List of Public Meeting Locations and Date

In total, close to 300 Iowans participated in the public meetings. Each public meeting began by asking attendees to sign into the meeting where they could opt to receive updates on OCIO's plan development. Each participant was then encouraged to take a name tag and a strip of colored sticker dots to participate in the facilitated activity described below. The facilitator for the meeting delivered a brief presentation to introduce participants to the OCIO, the purpose of the meeting, and the concepts of broadband and digital equity.

The presentation underscored the importance of broadband and digital equity as a multi-faceted issue. Achieving full participation in society in the digital age requires four interconnected concepts to be satisfied. These concepts were defined as Accessibility (the ability to acquire a high-speed internet connection), Affordability (the ability of the individual to afford service if available), Digital Devices (the ability to afford and acquire the right device for the task), and Digital Skills (the earned ability to use digital devices to achieve the desired outcome). The interconnected nature of these four facets, depicted in Figure 6, proved a recurring theme in meeting discussions.

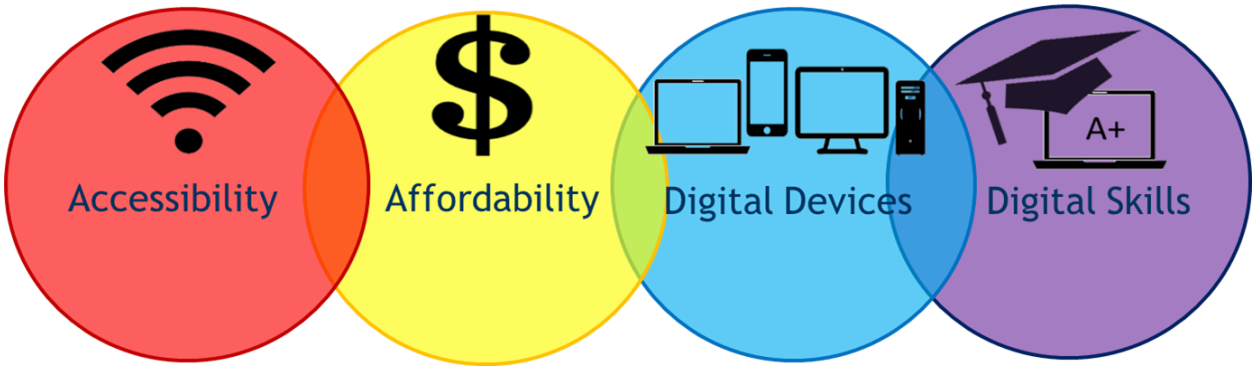


Figure 6: The Four Facets of Digital Equity

After describing the facets of digital equity, participants were encouraged to use their strip of colored dots (red, green, yellow, and blue stickers) and "rank" each facet relative to each other to indicate what constituted the largest barrier to full participation in society by their community. The red dot represented the biggest barrier for their community, the green dot the second,

yellow the third, and blue the fourth biggest barrier. The option of “Other” was offered to participants in case the four identified facets didn’t cover their area of interest. The “other” category earned only a handful of votes across the 55 meetings, mostly relating to the difference between “accessibility” and “reliability.” Note that in the figures below, not all columns add up to the same number. Most of that is due to votes earned by the “other” category mentioned above while some participants chose to simply not use all four stickers.

Figure 7 shows the total voting results from public meeting participants across all 55 meetings. Accessibility easily led the rankings as the largest barrier to achieving full participation in society among participants, receiving 174 first place (red) votes. Affordability and Digital Skills claimed 62 and 46 first place votes respectively, with Digital Devices garnering only four.

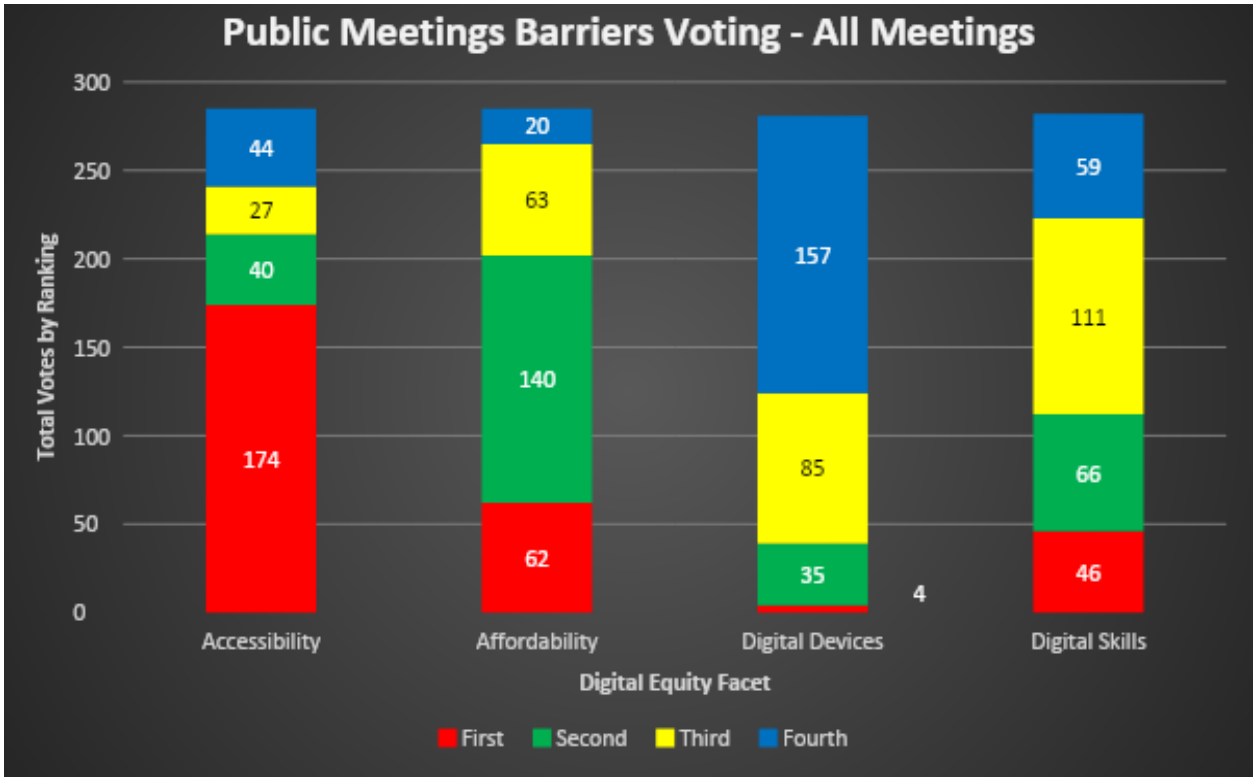


Figure 7: Public Meeting Participant Ranking for Digital Equity Facets, All Meetings

Figure 8 applies a simple scoring system to the votes to determine a “score” for each digital equity facet. This result helps visualize the relative rank of each digital equity facet by viewing the stack height for each. The scoring system gave four points for each red dot vote, three points for green, two points for yellow, and a single point for blue. These two figures (5 and 6) show that the Affordability facet scored a strong second place among meeting participants as to the perceived barriers faced by members of their community.

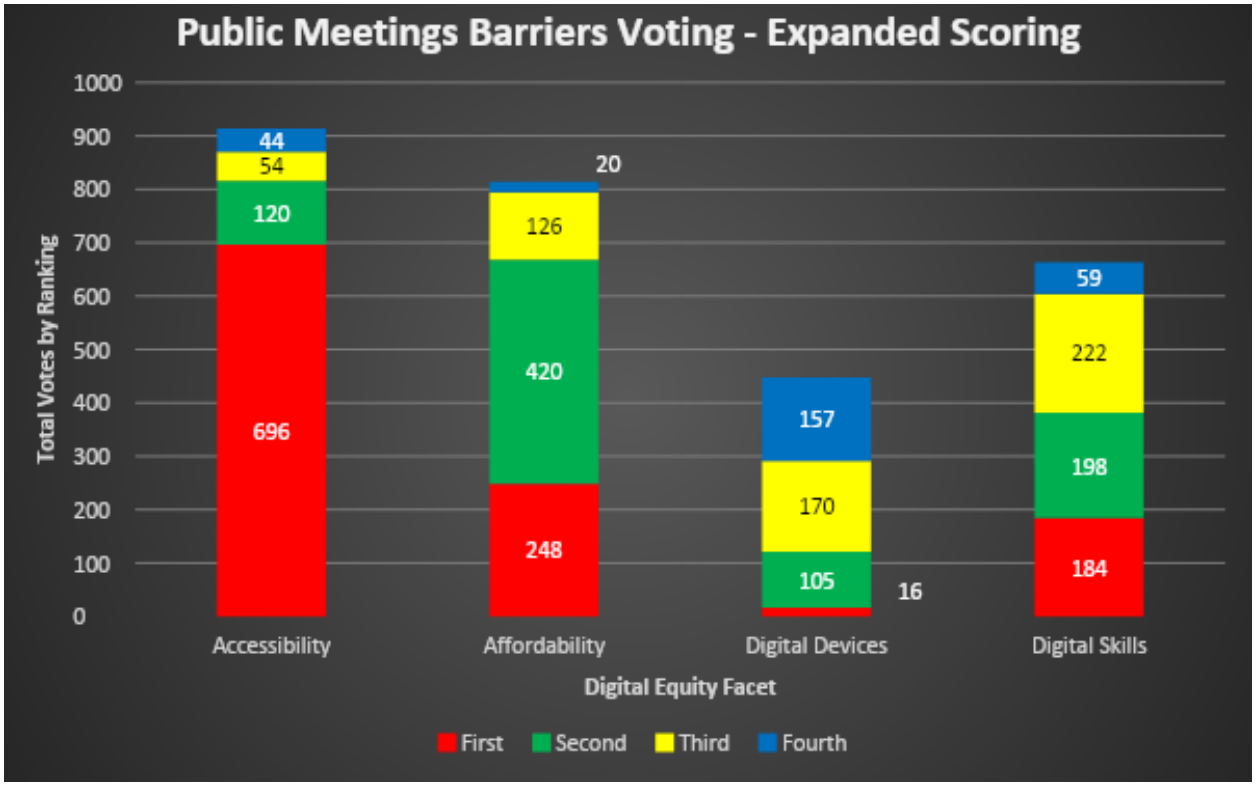


Figure 8: Public Meeting Scoring for Digital Equity Facets, All Meetings

Breaking out the results from the 20 urban area meeting locations separately, Figure 9 tells a more nuanced story than the full results. Affordability earned more first place votes than Accessibility among the urban meeting participants and nearly twice as many second-place votes, resulting in the highest stacked bar in Figure 10. This breakdown makes sense as most of the urban area meetings had accessibility options with some notable exceptions. Urban areas that may have a provider but that accessibility is unreliable or inconsistent voted for access in those meetings. This was true in at least two smaller urban communities that were motivated to help fix the access issue first and foremost.

Importantly, we know both through anecdotal stories and exit survey responses that a significant portion of attendees at the urban meetings were rural residents from surrounding areas. While the 20 urban area meetings comprised 34% of the total votes from the full sample, only 25% of exit survey respondents used an urban-area zip code. That difference helps explain some of the favorable voting for Accessibility in the urban meeting breakout.

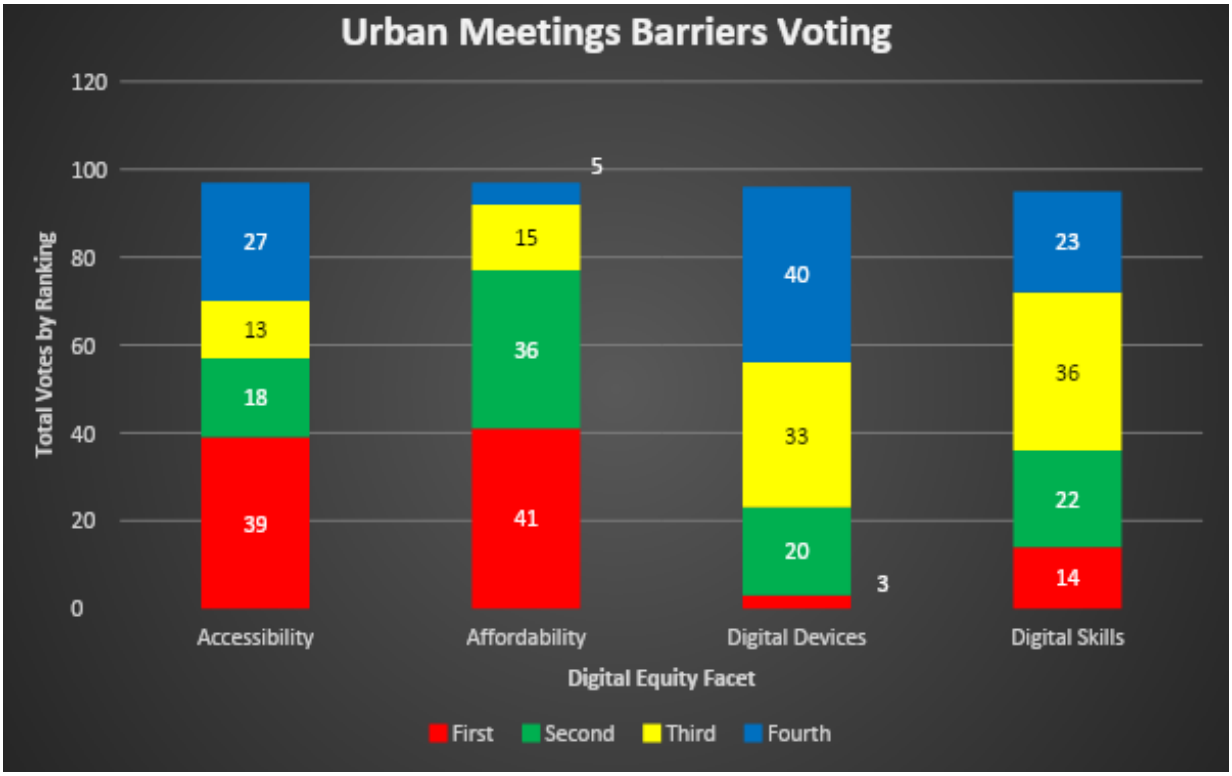


Figure 9: Public Meeting Participant Ranking for Digital Equity Facets, Urban Meetings only

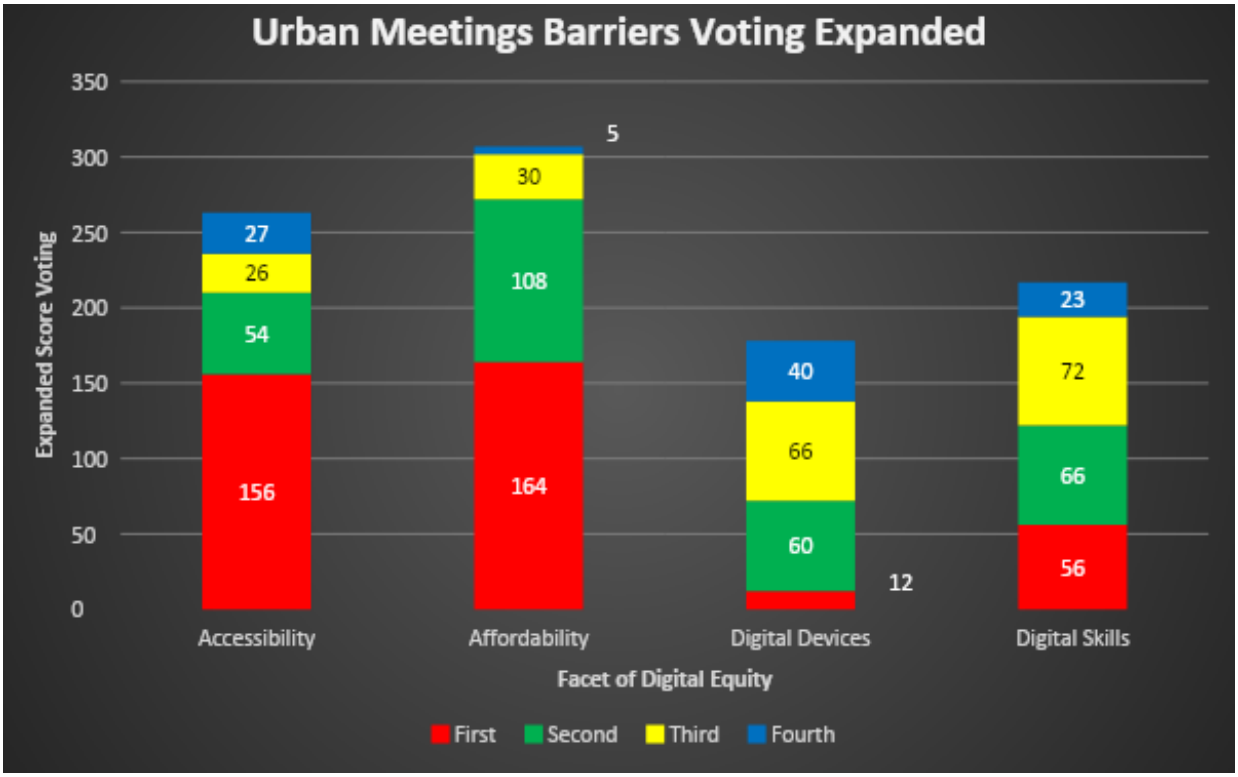


Figure 10: Public Meeting Scoring for Digital Equity Facets, Urban Meetings Only

On the other hand, breaking out the rural area meetings into their own chart in Figure 11 shows the stark ranking of Accessibility as the top barrier to achieving full participation in society in those communities. Many of the 35 rural meeting locations resulted in all voting participants identifying access as their top barrier. In communities where service was present, Digital Skills often rose to the top of those meetings as the top vote earner. While these individual meeting results were less frequent than those with access-motivated individuals, those meeting results helped Digital Skills earn the second-most first place votes in rural area meeting locations.

However, as Figure 12 shows, Affordability received the second highest number of points in the scoring chart due to the strong number of second place votes,representing a slight lead over digital skills. Often, Accessibility and Affordability paired as the first and second place votes of many public meeting participants.

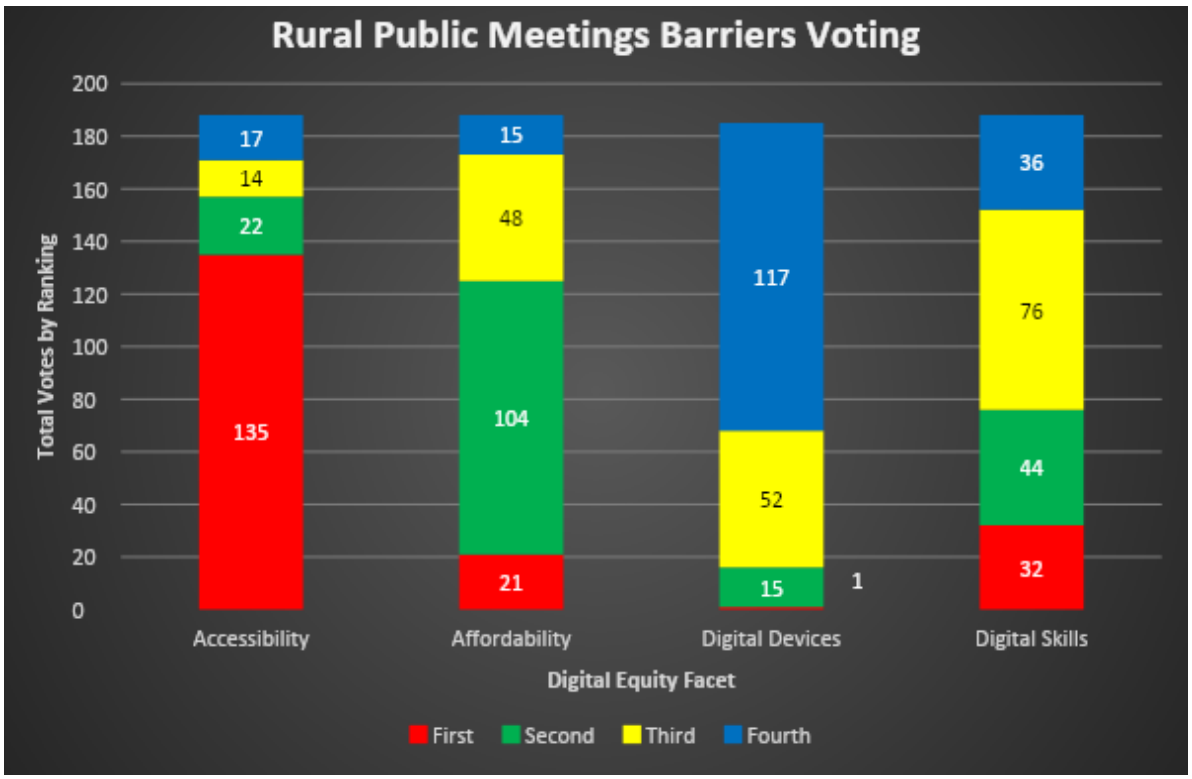


Figure 11: Public Meeting Participant Ranking for Digital Equity Facets, Rural Meetings only

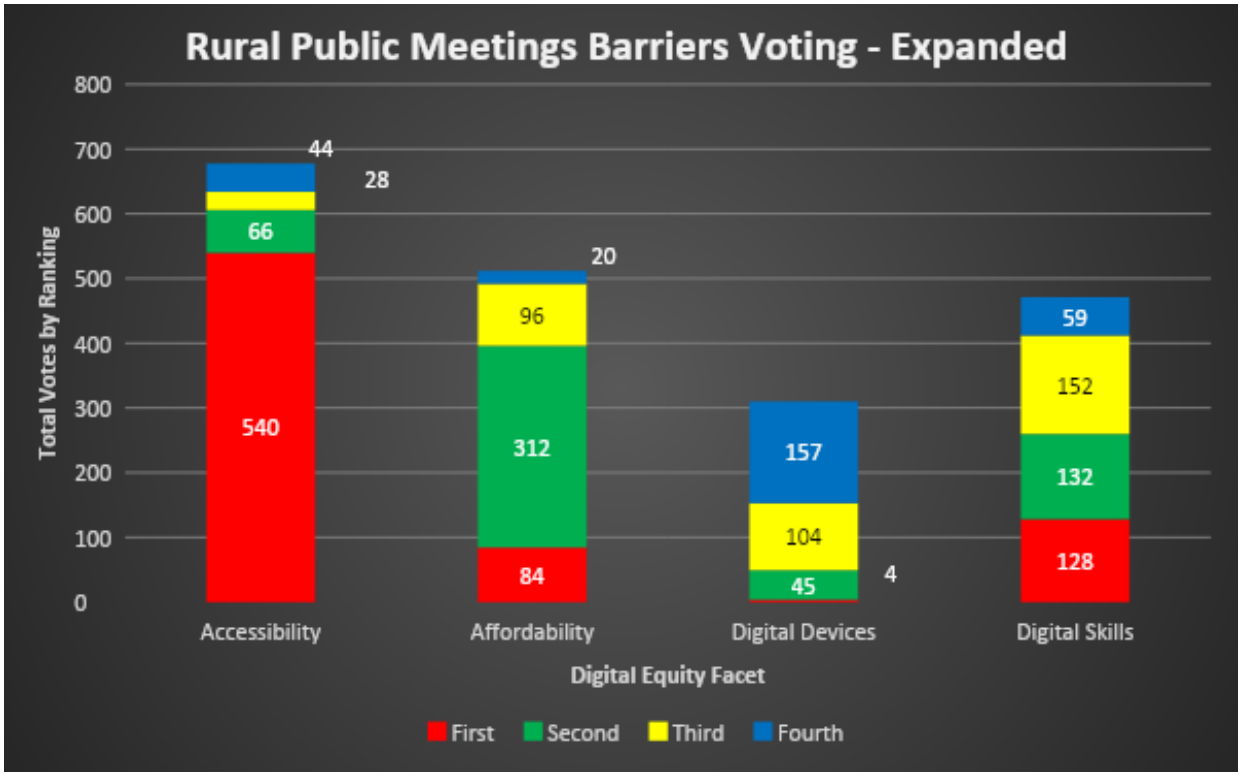


Figure 12: Public Meeting Scoring for Digital Equity Facets, Rural Meetings Only

Taking a look at just the top barrier identified by public meeting participants, Figure 13 shows the influence of the rural meeting location results on the overall percentages. The urban meeting locations resulted in a close split between Accessibility and Affordability while the rural meeting locations pulled the overall results for Accessibility up with the strong showing. Digital Skills and Digital Devices returned essentially the same percentage results across both urban and rural locations with respect to participant's highest ranking barrier. Important to note that this figure uses a percentage of votes as opposed to raw total to show the differences in voting easily by segment height.

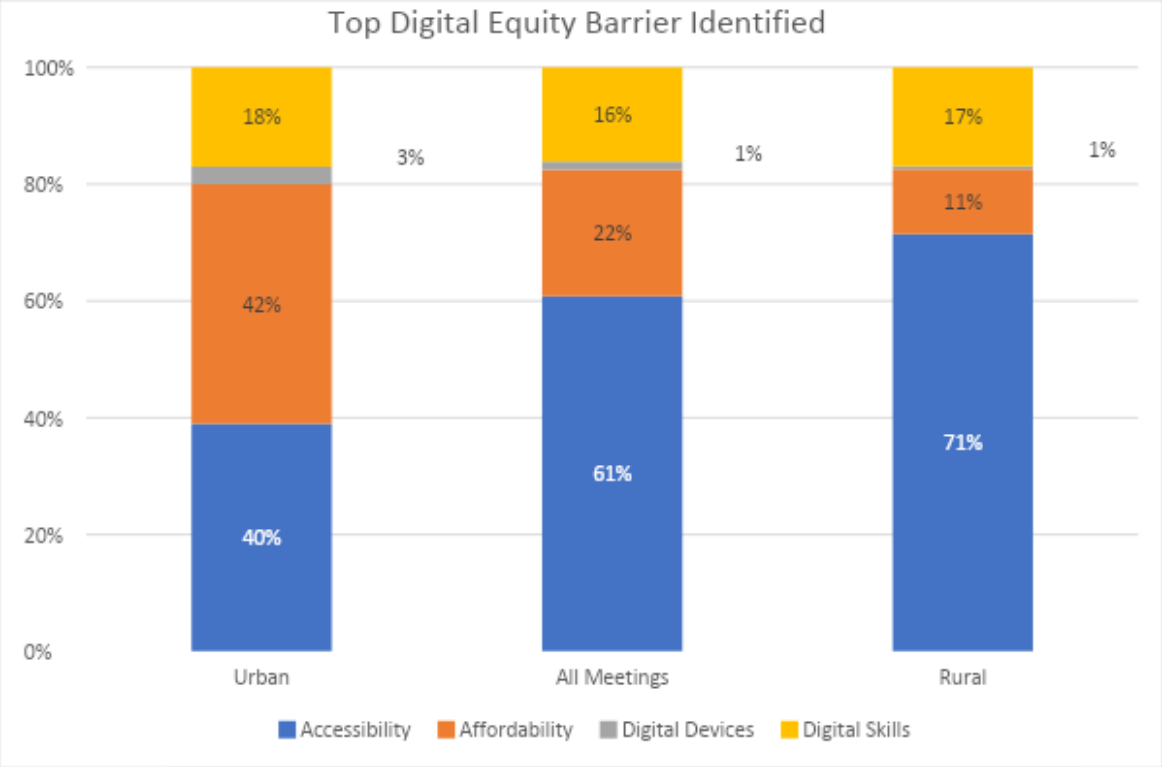


Figure 13: Biggest Digital Equity Barrier Ranking from Public Meeting Participants

Figure 14 looks at the second-place votes in the same way as the figure above. This provides a much more harmonious result between the urban and rural meetings with Affordability earning the most second-place votes across both meeting categories. Digital Skills returned the same percentage of votes while Digital Devices earned a more significant share in the urban meeting locations. Meetings that saw Digital Skills receive significant first-place votes often saw those same individuals vote for Digital Devices with their second-place vote.

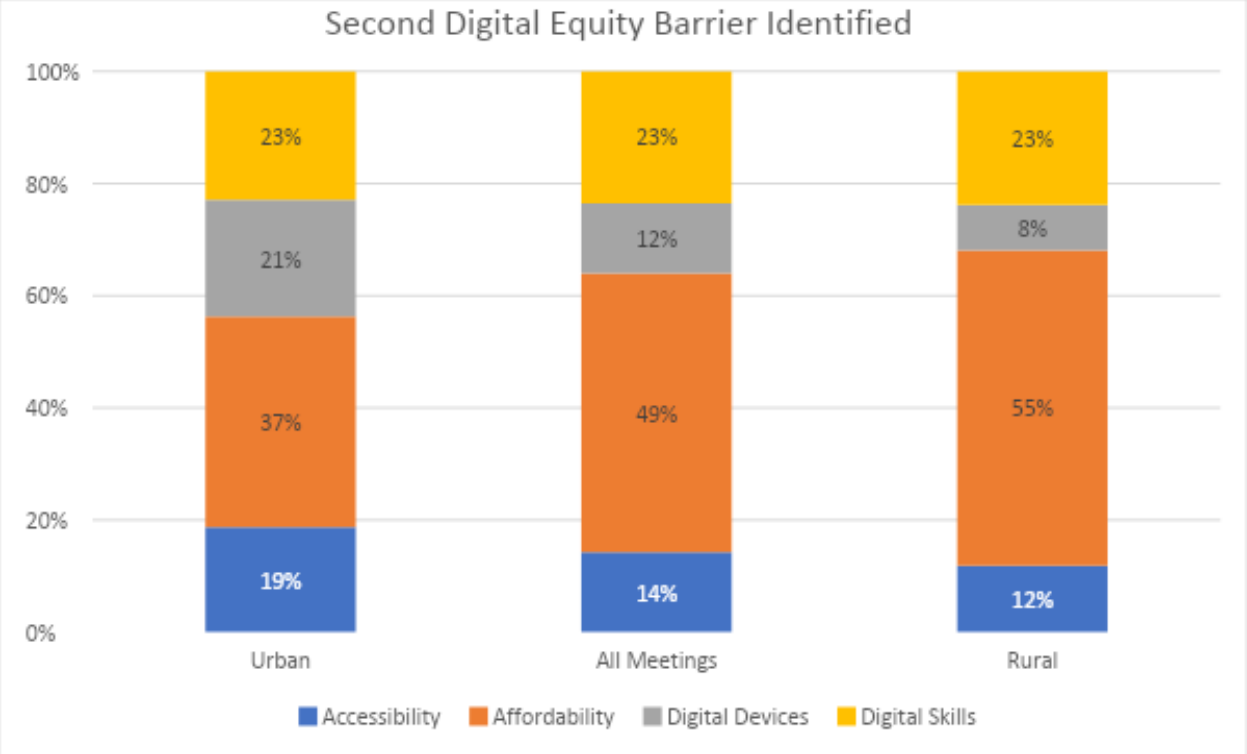


Figure 14: Second Biggest Digital Equity Barrier Ranking from Public Meeting Participants

After the dot voting was complete, the facilitator assessed the results and determined how to structure small group discussions. Participants could break into discussion groups addressing Accessibility, Affordability, Digital Devices, or Digital Skills, normally consistent with their voting preferences. Due to modest attendance and the strong single-issue voting in many meetings, most meetings only covered one or two topics in-depth. Small groups were asked to identify a person to serve as recorder, to take notes of the conversation, and a reporter, who would serve as spokesperson for the group at the end to share results of the conversation with the room. Each group was asked to discuss how the barrier impacted the daily lives of their family (or members of their community if it didn't personally impact them) and what program or project ideas they would like to see that could help solve the issue.

Accessibility

Participants relayed many stories of frustration with slow, unstable internet connections restricting the ability to work from home or complete homework assignments. One Iowan relayed that their son was forced to find housing in an area that had high-speed internet to be able to work and continue taking classes, which created an additional financial burden on the family, instead of saving money on rent by living at home. Others relayed missed opportunities for reentering the job market or taking advantage of a better job opportunity because they couldn't get service to work from home.

Many had personal stories of traveling to places of business that offered free Wi-Fi to gain connectivity to complete tasks. Others expressed frustration that the lack of reliable high-speed internet reduced social opportunities and prevented them from taking advantage of telehealth. Multiple groups mentioned the lack of high-speed internet access as a barrier to installing home safety systems and video-equipped doorbells. Lack of access prevented Iowans from participating in online gaming or streaming shows, which created a form of “Fear of Missing Out” when talking to friends and family.

The lack of connectivity can slow down devices due to a lack of ability to update software, impacting the safety and longevity of the device. Some Iowans talked about having data-limited plans, which can throttle down speeds when approaching caps and impact productivity near the end of the billing cycle. Some participants shared that this issue created inequitable work and social video calls by requiring people to turn off their camera feature in order to participate.

The cost of real estate in neighborhoods was another frequent topic, with anecdotes of home sales falling through or marking down the sale price of a home relative to similar homes with high speed internet access because of the demands from home buyers. Small business owners talked about the significant economic impacts that the lack of connectivity can create, with machines that stop working without remote diagnostic capabilities and the ability to receive online updates. This can have a local impact on rural development as people and businesses may not move to locations without assurances of connectivity. Some participants mentioned the lack of connectivity can also impact farm operations, reducing the ability to properly use precision agriculture tools.

One recurring theme to note was that some participants had access to high-speed internet but the service was so unreliable that it was a constant frustration in their lives. From intermittent drops to unpredictable slow-downs in service, an unreliable network produced many of the same issues as above where there was no connectivity available at all.

When asked to provide program and project ideas to help solve connectivity issues, participants overwhelmingly supported the continuation of state grant programs to help subsidize the cost of broadband infrastructure projects. Some participants encouraged leveraging partnerships with Rural Electric Cooperatives to help use existing infrastructure. Many of the conversations about accessibility thought of high-speed internet as a utility, a necessity like water and electric service, drawing comparisons to the rural electrification movement. Some participants encouraged exploration of high-speed internet as a public good as much as possible, including free Wi-Fi in public spaces and/or community run broadband.

Affordability

Almost every conversation during the public meetings about affordability offered stories of families making difficult decisions to try and fit high-speed internet into their budget. Examples ranged from choosing between broadband and other necessities like reliable transportation and groceries, to eliminating or reducing excursions and home maintenance and upkeep. Many

observed that applying for work often begins with an online application, which is difficult to afford without a job.

Students in households that can't afford broadband often struggle to keep up with school work as many assignments require high-speed internet to conduct research, communicate with teachers and classmates, and submit assignments. This disadvantage can place a high burden on the student and the parents to spend additional time and money finding free Wi-Fi locations to get work done. Additionally, participants talked about potential safety threats of sitting in parking lots to gain access or spending additional money on food and beverage to sit in a restaurant that offers the service.

Participants that had previous knowledge of the Affordable Connectivity Program (ACP) talked about the lack of awareness among their fellow Iowans of the program. Those that did know about the ACP talked about barriers to finalizing applications while others cited discomfort in sharing required information to people helping them fill out the form.

When asked to provide programming and project ideas, many participants wanted better marketing for the ACP to raise awareness levels. Others wanted easier navigation for the process and transparency from their internet service provider on what plans were eligible for the subsidy and how it would be applied to their bill. Some participants talked about working towards removing the perceived stigma of receiving government funding to help meet a need, as some saw this as a major barrier to participation. On the other hand, some participants worried about investing in the ACP when there is uncertainty about the program's future with current funding projected to run out in 2024.

While some participants shared examples of ad hoc community groups providing safe workspaces to connect to a common Wi-Fi point (church basements, community centers), others pushed for more formalized free community Wi-Fi that can serve those needs. An example was cited where a resident could access the community's Wi-Fi network with an established credential through their address. One discussion offered a model for community Wi-Fi that rewarded loyalty by providing discounts after achieving milestone consecutive years of service instead of the more common occurrence of rates increasing to loyal customers over time. Others talked about the need for creating and/or expanding hot spot programs through the community library and other trusted community locations.

Several discussions brought up the idea of focusing efforts towards multi-dwelling units, to use the purchasing power of many residents to drive down service to the one central location, much like a hotel. Some participants encouraged more competition to overbuild in communities, giving residents options for providers, relying on market forces of competition to create more competitive pricing. One participant talked about adding Wi-Fi access to all buses.

Digital Devices

The affordability of devices surfaced in conversations at almost every meeting during conversations about accessibility, affordability, and digital skills, underlining the interconnectivity of all facets of digital equity. Several participants talked about the multiple layers of cost for individuals and families to acquire, maintain, and service the devices needed to support the necessary activities associated with the digital society. The cost of setup and installation fees, capital costs to acquire equipment, plus making monthly payments on devices and services can be overwhelming. Additionally, investment in devices puts the individual on a cycle, where the device can quickly become obsolete and need to be replaced.

Many participants shared examples of individuals lacking the right device for the task at hand ranging from college students owning only a smartphone, limiting their ability to complete coursework, to the limitations of tablet devices in completing more complex office work. Some tasks may be completed with, say, a smartphone that would otherwise be best performed with a laptop, but it takes longer, subjects the task to a high rate of error, and could ultimately not work if the interface isn't mobile friendly. This can lead to a lot of wasted time and increased frustration.

Participants pitched the idea of a checkout of devices, similar to the success of hot spot checkouts at libraries. Others mentioned the importance of tech support for those devices, particularly for aging individuals, on how to acquire and set up a device. Additionally, some participants noted the appeal of a trade-in program for devices once they age out to receive a discount on an updated device.

Digital Skills

The public meeting discussions identified a wide-ranging suite of digital skills lacking in specific populations and in general that limited the participation of citizens in many aspects of the digital world. That limitation in skills limited job opportunities, social event participation, taking advantage of telehealth appointments, and furthering education. Some felt that the digital skills gap was mostly an aging population issue that would eventually be solved over time while others see digital skills as a constant evolutionary challenge as technology continues to advance.

Participants identified the need for cybersecurity training to help aging individuals overcome a fear of being exploited while also providing the training to younger individuals and others to recognize the risks associated with online activities. Several participants told stories of individuals falling victim to scams that resulted in the loss of time, money, and credit. Many identified the difficulty in troubleshooting tech issues at home, which places a burden on a tech savvy family member to serve as support in many instances.

Many participants discussed the lack of people that can provide the help for those lacking digital skills. Librarians throughout the state have been unofficially appointed by many to be digital

skills teachers, some without extensive training themselves. This creates an additional burden on the library system as more help is needed to meet the needs of the public.

Meeting participants discussed free or low-cost digital skills education for adult learners. While some classes can be taught online, many citizens may experience digital skills barriers to enrolling or participating in online courses. As a result, in-person classes were identified as key for beginners. Some participants pointed out how crucial it can be to meet the resident where they are in terms of skill level and location. For example, classes offered at a community college, local library, and local community center may appeal to different populations. Development and distribution of a universal cybersecurity course came up frequently to help people feel more confident engaging in online activities.

Some people identified a possible connection between helping high school students meet their volunteer hour requirements for graduation honors by having those students with higher levels of digital savvy help others with tech support or by teaching basic digital skills. Others took the idea further and described a setup similar to the “Digital Navigators” program being piloted throughout the country where an individual would be embedded in the community to provide tech support and digital skills training for interested individuals.

Exit Survey

The meeting ended with an opportunity for participants to fill out an exit survey. Important to note that not all participants filled out a survey and of those that did, some prompts were left blank in some areas. Additionally, some people attended multiple meetings and were asked to fill out an exit survey only the first time they attended. Given those caveats as to why survey respondent numbers will differ from the dot voting activity above, a significant majority of participants did complete the survey.

Figure 15 depicts responses to an exit survey question that measured each digital equity facet individually. The question was worded as “*How important are each of these possible barriers to broadband and digital services in **your community**?”* Important to note, all four digital equity facets earned a “very” or “somewhat” response in at least 70% of surveys.

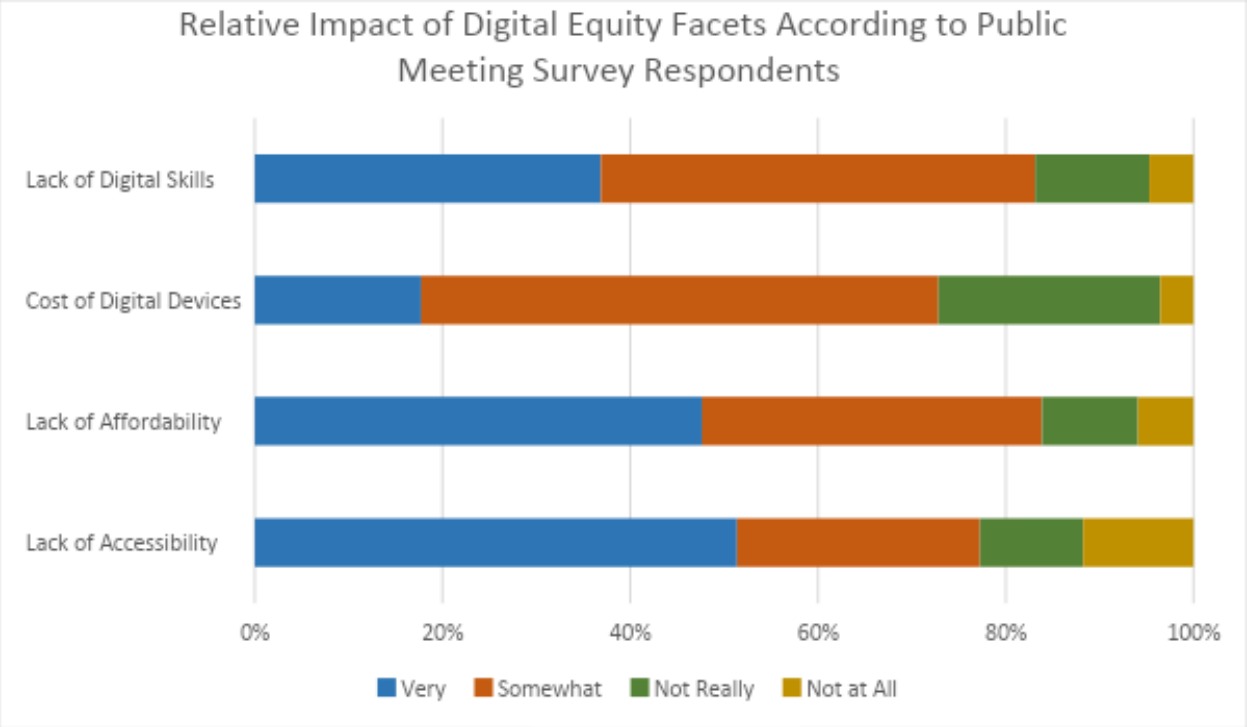


Figure 15: Relative Impact of Digital Equity Facets According to Public Meeting Survey Respondents

Figure 16 depicts responses to the exit survey question "*Which of these barriers to broadband and digital services is the biggest problem for **your household**?"* It should be noted that the survey provided "none" as one of the checkbox options, which narrowly earned the most votes. This figure may speak to the motivations behind why individuals chose to attend a public meeting on broadband and digital equity. While a plurality voted "none," their motivations for attendance may be professional (work at an internet service provider, for example) or as part of community engagement. Interestingly, a little over a quarter of respondents identified Accessibility as their biggest personal barrier whereas the dot voting resulted in a much stronger showing as a barrier for the community (61%).

One of the most surprising results from this question was Digital Devices, the category least voted on during the sessions, earned a significant share of votes when respondents thought about this issue personally and not what impacts other people. This result reinforces the importance of this digital equity facet, even if it didn't score as highly in the dot voting exercise.

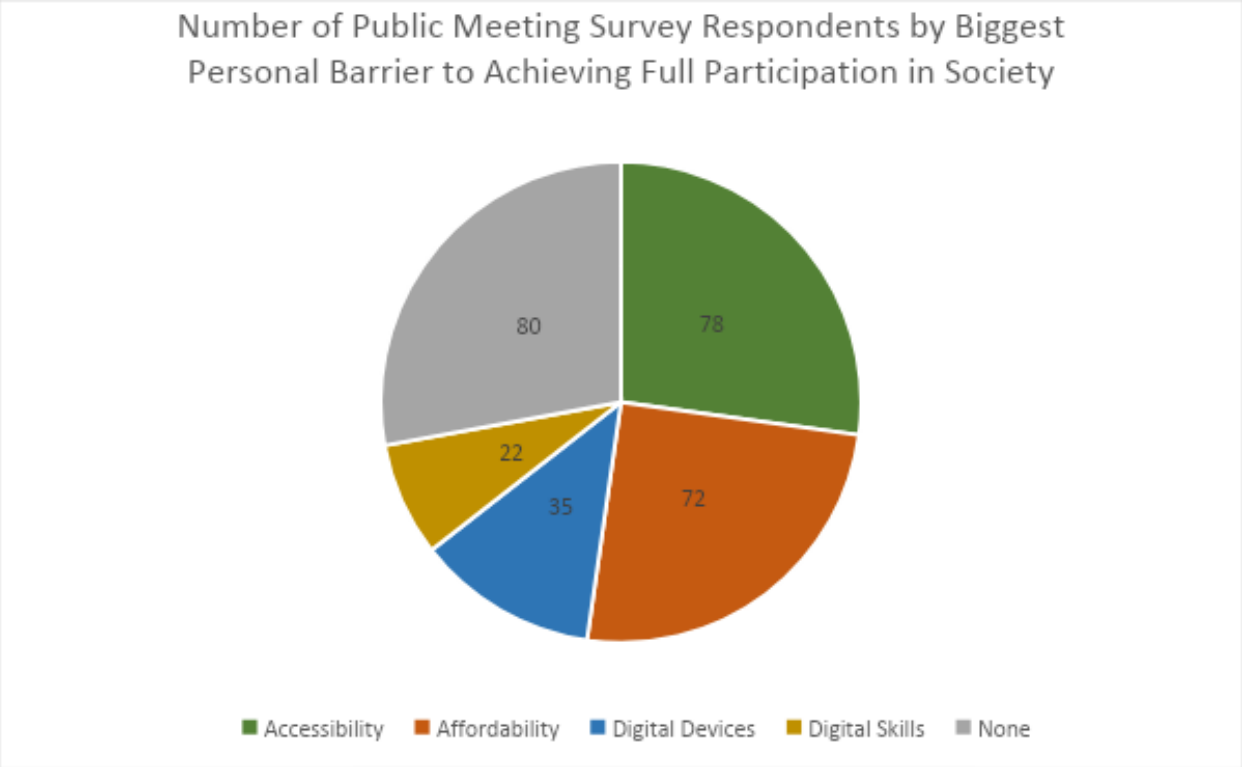


Figure 16: Number of Public Meeting Survey Respondents by Biggest Personal Barrier to Achieving Full Participation in Society

The exit survey also asked "*What do you believe is a fair cost per month to pay for high speed internet service?"* Both the median and mean responses to that answer were $65 per month. It's important to note that survey respondents were largely middle aged and older, and mostly represented households earning over $75,000 per year. Figure 17 shows the demographic breakout of survey respondents by age group while Figure 18 breaks out survey respondents but household income level.

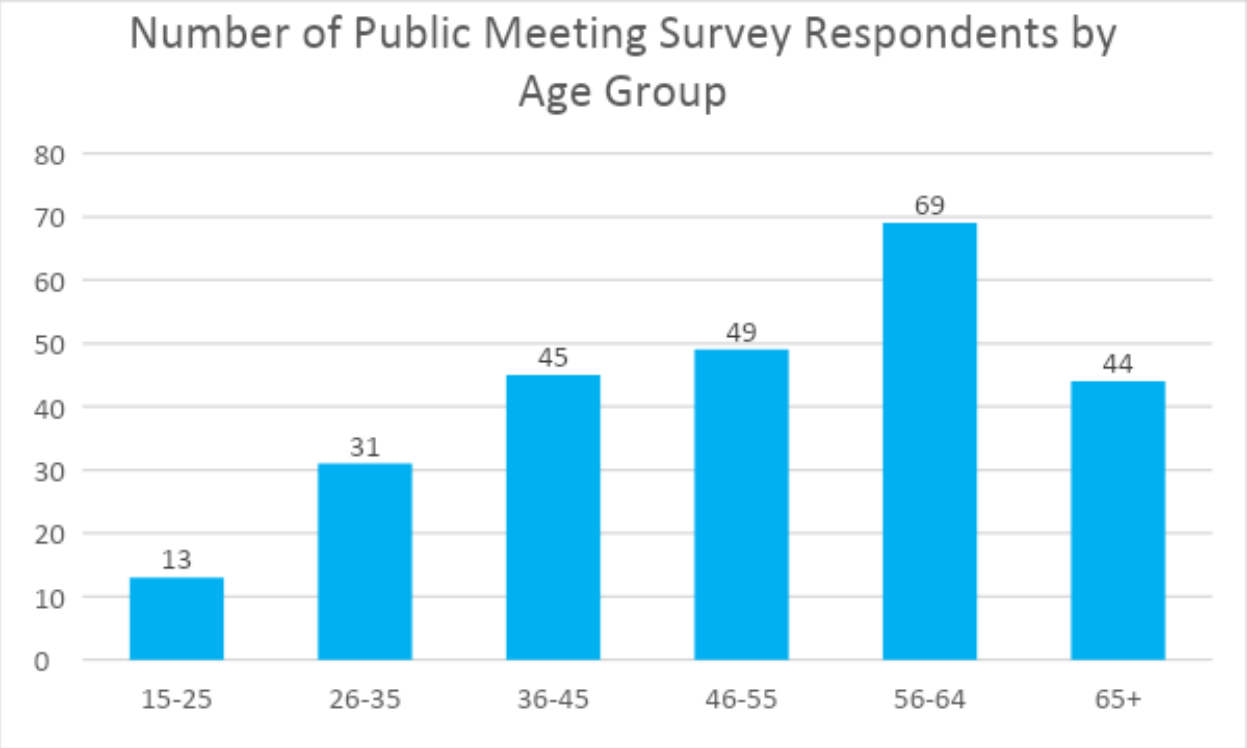


Figure 17: Demographic Breakout by Age Group of Public Meeting Survey Respondents

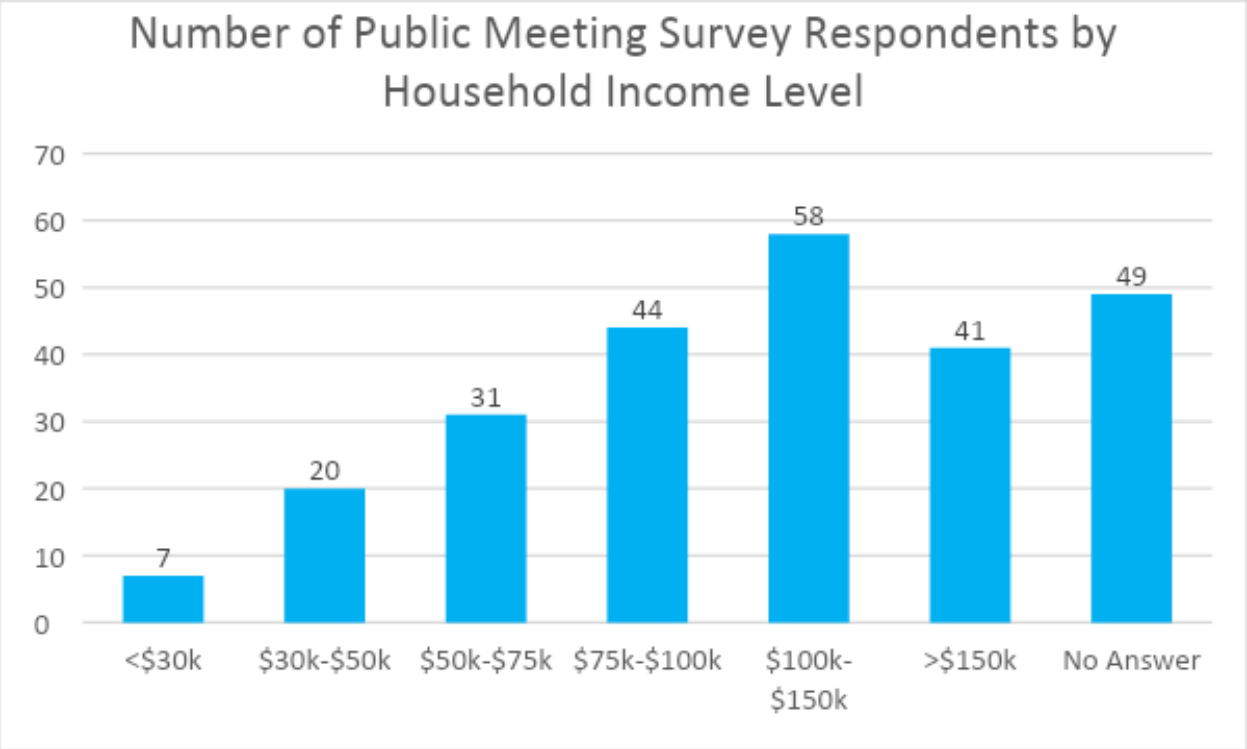


Figure 18: Demographic Breakout by Household Income of Public Meeting Survey Respondents

Relative to the eight identified Covered Populations in the Digital Equity Act, the demographic questions in the survey revealed that participants identified with or lived in a household with someone who identified with seven of the covered populations. Aging individuals, as indicated in Figure 17, accounted for a significant portion of survey respondents. Household income level combined with the answer to the number of individuals living in the home provided enough information to infer that at least 15 survey respondents lived in a covered household. A total of 192 respondents lived in a zip code that corresponds to a rural community, 29 indicated they lived in a household with a veteran, and 25 lived in a household with a disabled individual. A total of 14 respondents indicated they spoke a language other than English at home and eight identified as a racial or ethnic minority. No question was asked regarding the eighth covered population, incarcerated individuals, as the act defines that population as those who are currently incarcerated and it is impossible an individual would be both incarcerated and in attendance at a public meeting at the same time.

Community Engagement

Community Engagement requires working collaboratively with decision makers to understand the needs and requirements of the community they belong to and/or represent. The community engagement process will be iterative to help create long-lasting partnerships that add value to future broadband policies and programs. Expected goals and outcomes of the stakeholder engagement process include:

- The Office will strengthen partnerships and alliances with organizations that represent or work with disadvantaged communities and/or covered populations. This includes building diversity and inclusivity into the process. The objective is to establish shared values and build trust during the planning process.
- The Office will work with planning partners and stakeholders to expand the knowledge of the issues surrounding digital equity and broadband needs. This can include the identification of new insights, resources, and evidence of best practices.
- The planning team will develop measurable objectives for achieving digital equity and bringing broadband service to all unserved and underserved locations in the state.
- The planning team will work to identify gaps and the applicable tasks associated with building community capacity for digital equity and expanding broadband connectivity. One of the outcomes of this step could be to build community resilience to “self manage” their path towards these objectives.
- The Office initiated the Tribal Consultation process through NTIA with the Meskwaki Nation and the three tribes located primarily in Nebraska but with landholdings in Iowa. Depending on availability of Meskwaki Nation staff, the Office has asked for tribal participation on a coordination committee to represent tribal interests.

The Office has contracted with a third-party entity to assist in the facilitation of community engagement. Initial plans for community engagement included the following:

- Local Coordination: Contractor has and will continue to contact stakeholders in all 99 counties to gauge interest in broadband improvement and willingness to participate in the broadband grant program.
    - Outreach to communities for the purposes of strategic planning and consulting for broadband expansion, planning services, insights into the economics of broadband, understanding of the current local broadband landscape, possible funding alternatives, and possible paths to achieve the desired outcomes.
    - Outreach to underrepresented communities, unions and worker organizations.
    - Collaborate with local, regional, and Tribal entities (governmental and non-governmental) and demonstrate collaboration reflective of the local coordination requirements outlined in the BEAD NOFO, including outreach to underrepresented communities and unions and worker organizations.
- Conduct surveys and solicit feedback from communities: Contractor has and will continue to conduct surveys and solicit feedback from all 99 counties, as well as community leaders, organizations, and others as required in the BEAD 5-Year Action Plan to gauge an interest and need for broadband in that area.

Broadband Together

The contractor also created and launched a free community education and assessment program that was targeted at local community leaders, county officials, economic development organizations and similar. It consisted of 8 modules designed to walk a community through the process of potentially creating a broadband project in their community. (Appendix A) Each step/module was developed as a broadband training component. This program is offered to cities, counties, economic development groups, COGs, and other entities that may be interested in addressing local broadband issues. This program facilitated a large amount of conversations that led to valuable input from local communities.

Community Engagement Tracking

The contractor tracks all citizen, provider, or organizational inbound and outbound engagements on a variety of topics related to broadband. The engagements include any contacts that occur via email, phone, or web-based meetings. Since tracking began in September of 2021, there have been over 1,700 engagements as of June of 2023. Engagements include calls and emails

managed by the contractor and OCIO. Scheduled communications are sent out periodically to various stakeholders including all county supervisors, Council's of Government, Iowa associations. The communications have provided key information regarding broadband funding and upcoming available programs and have reached all 99 counties in Iowa.

Affordable Connectivity Program

The OCIO has engaged Education SuperHighway (ESH) to drive Iowa participation for the Affordable Connectivity Program, which provides discounts to offset broadband subscription costs for qualifying households. Per various enrollment trackers, Iowa only garnered 91,382 enrollments in the ACP plan as of April, 2023. Estimates put Iowa at 16% enrollment for eligible households while the national average sits around 31%. Our goal is to raise Iowa's participation to track with the national average. In the OCIO broadband outreach meetings this spring, a regular criticism heard centered on the challenges to applying to the program and the lack of marketing. The Office will look to address both issues.

Media Outreach

The OCIO has undertaken a social media campaign largely utilizing Facebook to reach attendees for the BEAD & DEA Outreach Plan and potential applicants for the ITQ. The OCIO has also worked with the Iowa Newspaper Association to transmit press releases to as wide a media footprint as possible. OCIO's Public Information Officer provides media outlets with interviews and answers to questions for news stories as requested.

Additional Engagement Opportunities

To ensure continued local coordination and engagement, our plan involves offering interested parties the opportunity to connect with our office for information and meetings as needed. We recognize the value of collaboration and input from various stakeholders, including community leaders, local organizations, businesses, and residents. Through open lines of communication, we aim to foster meaningful dialogue, gather feedback, and share updates on broadband initiatives and projects. Interested parties will have the chance to engage with our office to ask questions, express concerns, and contribute ideas. By actively involving local communities, we can build stronger partnerships, gain valuable insights, and ensure that our broadband efforts align with the unique needs and aspirations of each community. Together, we can create a collaborative environment that empowers local stakeholders and drives effective broadband deployment and digital inclusion.

In addition, the Office has begun implementing or exploring other initiatives that can be implemented for continued local coordination.

- Conduct Community Surveys and Needs Assessments

    - Engage with the local community through surveys and needs assessments to gather insights on broadband connectivity, identify gaps, and understand specific challenges faced by residents and businesses. This data can guide decision-making and ensure that efforts are targeted toward addressing the most pressing needs.

- Collaborate with Local Institutions and Organizations
    - Forge partnerships with local educational institutions, libraries, healthcare facilities, and other community organizations to leverage their resources and networks. Collaboration with these entities will improve digital literacy, provide technical assistance, and address specific needs of underserved populations.
- Online Engagement
    - Utilize existing online platforms, such as dedicated websites or social media channels to facilitate ongoing communication and engagement with interested stakeholders. These platforms can be used to share updates, provide resources, and collect feedback, making it convenient to stay informed and actively participate in broadband initiatives.
- Foster Public-Private Partnerships
    - Seek partnerships with local internet service providers or other private sector entities to leverage their expertise and resources. Public-private partnerships can enhance broadband deployment efforts, improve service quality, and increase access to underserved communities.

By implementing these additional measures and continuing to explore local coordination avenues throughout the BEAD program, the Office can benefit from a collaborative and inclusive approach. Engaging the local communities in meaningful ways ensures that their voices are heard, their needs are addressed, and the broadband deployment strategies align with the unique characteristics and aspirations of the state.

5.2 Priorities

Table 6: Priorities for Broadband Deployment and Digital Inclusion

Priority	Description
Invest in deploying last-mile broadband infrastructure	Continue the Empower Rural Iowa Grant program by offering a competitive grant process to address unserved and underserved areas of Iowa.
Streamline processes	Utilize the ITQ and Dig Once programs to streamline processes in selecting subgrantees and deploying broadband infrastructure. This could also include utilizing a memorandum of agreement for project environmental review.
Incentivizing providers	Incentivize providers to upgrade and adapt existing infrastructure to meet future needs.
Multiple options	Develop an approach incorporating multiple options to address the digital divide to maximize the use of funds and meet the digital equity needs and goals.
Leverage existing assets	Identify and leverage existing assets and resources to most effectively and efficiently address the broadband needs in Iowa.
Quality outreach	Enhance public awareness by engaging a wide variety of stakeholders and incorporating ideas to best serve the needs of Iowans.

5.3 Planned Activities

Community Invitation to Qualify

As mentioned throughout this document, the 2023 ITQ will have a significant impact on the anticipated goals and objectives for expanding and improving broadband throughout the state of Iowa. Previously, all Program grant opportunities allowed broadband providers to select where they wanted to propose new service within an eligible area of the state identified on the broadband map. Although this process has resulted in significant broadband buildout in areas lacking broadband service, some counties have received few applications. As a result, there remains a perception that certain areas within the state perpetually go unserved for a variety of reasons.

The ITQ process addresses this concern by giving communities a voice in the distribution of broadband funds. Communities have applied to the ITQ to identify a geographic area with a critical need for broadband service. These areas were then evaluated by OCIO and prioritized for future grant funding. Future grant opportunities will be targeted to these areas. The ITQ itself is not a grant opportunity, but a way for communities to help the state prioritize areas to receive funding in the future.

The idea behind using the ITQ process was implemented as part of the American Rescue Plan Act Capital Projects Fund. As OCIO learned of the BEAD funding and the associated requirements, it became clear that the ITQ concept could be utilized in a similar manner for the BEAD program. It is anticipated that the ITQ process will assist in identifying those unserved and underserved areas that have the greatest need. OCIO believes this approach is beneficial because it creates the ability to target funding toward those areas of Iowa with the greatest need, supports community collaboration and data gathering requirements established within BEAD, and gives communities a voice in the process.

There also may be some risks involved with this approach. This process may take some decisions away from broadband providers, and some areas may be so difficult to serve that even 75% match won't ensure funding. Additionally, any differences between the Iowa broadband map and the FCC map may require major changes to the geographic composition of areas identified in the process. A second ITQ may be needed in the future. Finally, research conducted by OCIO suggests that many local governments and associations may not have the capacity to participate in any program.

The ITQ application process emphasized simplicity. The goal was to make it simple enough so that communities would not need to hire an engineer or broadband expert to apply to this opportunity.

The ITQ application consisted of the following elements:

Data Required	Why?	What?	How?
Geographic Area of Concern	CPF/BEAD eligibility requirements	A geographic area selected on OCIO maps that consisted of unserved and underserved broadband serviceable locations that have not received state or federal money previously	Selection of locations on the broadband map
Work, Education, Health Monitoring	CPF Requirement	Impediments to education, work, and health monitoring	Written Narrative (less than 2000 words)
Community Support	BEAD Community Engagement Requirement	Evidence of community support for funding	Letters or testimonials gathered from community
Community Broadband Capital	BEAD Community Engagement Requirement	In-kind or financial contributions offered by community	List of items such as easement to place antenna on grain elevator
Barriers to Broadband	BEAD 5-Year Action Plan	Perceived barriers that have prevented broadband expansion	Written Narrative response (less than 2000 words)

Figure 19: ITQ Application Elements

Empower Rural Iowa Notices of Funding Availability

OCIO has conducted broadband grant programs under the Empower Rural Iowa name beginning in 2018. The latest iteration is NOFA #008. The full set of NOFA #008 documents can be viewed on the OCIO website.[68] Currently, the Program is focused on advancing the objectives of the BEAD program, including ensuring all residents of Iowa have access to reliable, affordable, and high-speed internet. The BEAD initiative offers additional opportunities

[68] https://ocio.iowa.gov/broadband-grants

for Program grants. Previous Program grants did not have as extensive planning and compliance activities compared to BEAD. As noted in the Obstacles and Barriers section, many of the federal requirements are concerning to the provider community. OCIO has had discussions with many providers not only to discuss the requirements, but also to gauge levels of interest and any additional feedback. Discussions with these providers will continue in order to find suitable solutions to issues outlined in Section 4. Figure 5 below shows an outline of the general process taking the ITQ into consideration.

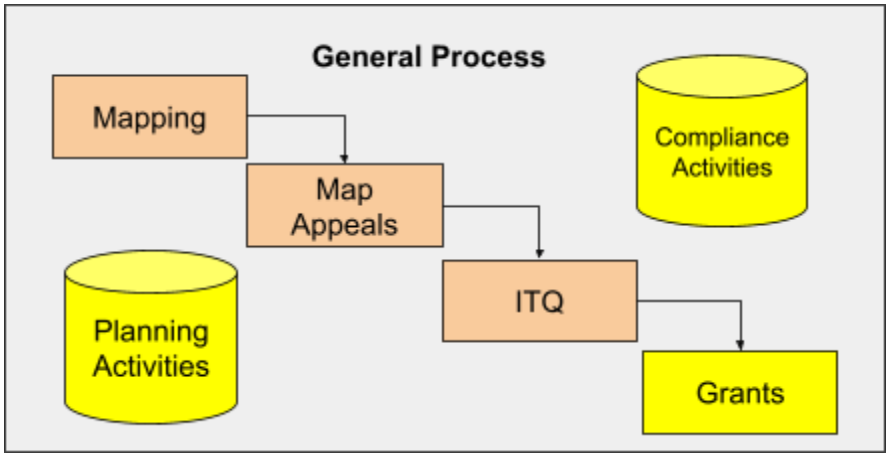


Figure 20: General Process

OCIO plans to continue the Program utilizing BEAD funds. The Program has methodically addressed broadband needs throughout the state. The ITQ now adds an additional tool to the toolbox when allocating grant funding. Previous Program grants relied more so on the provider community to identify the appropriate areas of the state that needed broadband access. With the addition of the information acquired during the ITQ process, OCIO is now able to adapt the Program toward addressing broadband needs that Iowa citizens and communities have identified. This has the potential to offer more reliable coverage where it's needed most.

Depending on the available funding and the identified unserved and underserved locations across the state, combined with the obstacles outlined within this document, there may be recognized funding gaps when attempting to meet 100% coverage. Careful consideration and prioritization of projects, varying match requirements, and creative solutions will be needed to achieve the goals of BEAD.

Again, the ITQ will assist in the prioritization of projects, so using that information when analyzing the applications is important to ensuring the BEAD funds go as far as possible. Previous Program grant opportunities included application scoring strategies to rank proposals and ultimately offer various funding match amounts based on the rank. This strategy will also assist in furthering the BEAD funds. Creative solutions regarding the appropriate technology for different areas of the state may also help. Considering the rural nature of the state along with the challenging topography, there may be various technologies necessary to obtain 100%

coverage. Conducting the internal review process with an open mind and open dialogue with providers and communities will be an important step. Also, combining the needs identified as part of the digital equity process may generate creative solutions in addressing concerns that go beyond access.

All of these, and possibly more, will be important to keep in mind during the grant application process. However, the success of the program will also be dependent on the level of commitment and willingness of the provider community to address the needs of the state. OCIO will need to carefully develop the Program NOFO in such a way to secure 100% coverage, but also to encourage providers to participate to meet the identified broadband deficiencies. Utilizing the ITQ and continuing the Empower Rural Iowa Program will increase broadband access and adoption in underserved and unserved areas of Iowa. Through these programs, OCIO will be able to monitor and evaluate the effectiveness of Iowa's broadband programs and policies.

Digital Equity Plan

Developed in parallel to the 5-year action plan, Iowa's Digital Equity Plan articulates the vision for inclusion of all Iowans to be able to better achieve full participation in society. The plan engaged citizens at multiple levels through a statewide survey, focus groups, and a 55-meeting statewide town hall tour to better understand the barriers and needs of Iowans with respect to access, affordability, digital devices, and digital skills. The planning process engaged individuals who identify with one or more of the eight identified covered populations to help identify potential barriers to that full participation in the digital aspects in society. The planning process engaged professionals who work with those covered populations and those with subject matter expertise in the facets of digital equity to develop measurable objectives and implementation strategies to help remove those potential barriers.

Empower Rural Iowa Initiative

The Empower Rural Iowa Grant Program is a large part of the overarching Empower Rural Iowa Initiative[69] implemented as part of the Iowa Economic Development Authority's community development programs. The key components include:

- Investing in Rural Iowa: rural housing shortage, derelict and dilapidated buildings, online business presence, business transition planning, and entrepreneurship.
- Growing Rural Iowa: leadership development in rural communities, creating welcoming communities, and attracting and retaining residents or workers.
- Connecting Rural Iowa: financing broadband connectivity, leveraging connectivity, and remote worker readiness.

[69] https://www.iowaeda.com/empower-rural-iowa/

Highlights from the FY22 and FY23 Empower Rural Iowa Initiative Annual Report's[70] Connecting Rural Iowa section includes two initiatives that depend on reliable broadband. Those two initiatives are:

- Rural Emergency Response Pilot: Program which leverages technology and volunteers to decrease emergency response time throughout the county. This launched the development of a committee to assess the potential for a rural model of the program in Iowa, using an app-based platform to dispatch volunteers who can stabilize emergency situations while waiting for EMS or Paramedic response. A pilot program is currently under development by a committee of task force members.
- Center for Rural Revitalization Technical Assistance Program: The Center for Rural Revitalization has formed a committee to develop a technical assistance grant program for communities and businesses. Identified as a continued missing resource within state government, this program will create specific teams to send to grantees, providing technical expertise, guidance, and resources. Grant funds will be used to support training, planning, or design projects.

Continuing the partnership with the Iowa Economic Development Authority and its programs will help further foster innovation and economic growth through broadband development. Because broadband is a key component of this initiative, the platform exists to promote the use of broadband infrastructure and digital technologies in sectors like agriculture, healthcare, education, and small businesses particularly in rural communities. It also helps foster encouragement and partnerships from the private sector to invest in broadband infrastructure. Precision agriculture and the ability to monitor farmland and livestock is enhanced with reliable broadband. The ability for the most rural areas of the state to participate in high quality healthcare and education with the help of broadband access and for small businesses in these areas to participate in the digital economy will help these rural areas thrive. The Empower Rural Iowa Initiative is funded through an annual state appropriation.

Other Partnerships

OCIO recognizes the importance of key partnerships when accomplishing goals and plans to leverage existing partnerships and seek out new opportunities as well. OCIO has already established relationships with universities in Iowa and partnered on aspects of broadband projects. Additionally, OCIO has begun engaging state partners and tapping into their expertise. With the wide array of requirements in the BEAD program and the all-inclusive nature of broadband in today's society, it is imperative that OCIO continues to seek out partners to fully execute the scope of the program. Further developing these relationships with an assortment of

[70] https://www.iowaeda.com/UserDocs/documents/IEDA/eri_report_122022.pdf

stakeholders will likely foster innovation and growth as well as supporting existing remote services and exploring new opportunities.

The University of Northern Iowa has assisted in community engagement. They have utilized their research and outreach experience to help foster engagement from local communities and gain valuable insights into the state of broadband in Iowa. This partnership uses funding from the Digital Equity Act. Iowa State University has assisted with the classification of address locations. Their expertise in mapping and data validation helps improve the accuracy of the locations of the Iowa Location Fabric by adding or correcting addresses. BEAD planning funds are being used for this partnership.

Connected Nation, an organization that has assisted OCIO for the past 10 years, will support the mapping and data development efforts our office undertakes as part of the BEAD implementation process. Connected Nation is currently tasked with developing broadband availability data. This will include the building of a broadband program and a digital asset inventory. These deliverables will be used to determine how to achieve universal service in the state.

The workforce component of BEAD is also very important. Iowa Workforce Development has multiple programs to monitor the workforce landscape in Iowa and develop solutions as needed to address any areas of need. A number of these programs are outlined in the Alignment section. OCIO has begun working with Iowa Workforce Development to analyze the state of the workforce in Iowa related to broadband services. This partnership will be important to ensure that Iowa is positioned well and ready to proactively address any potential workforce gaps. Developing a skilled workforce to support Iowa's broadband efforts now and in the future will pay dividends to the success of the BEAD program and help close the digital divide.

Other important inclusions in the BEAD program are the environmental and national historic preservation requirements. OCIO has initiated discussions with the Iowa Department of Natural Resources, the State Historic Preservation Office, and the State Climatologist in an effort to assist in meeting the requirements of the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and any other applicable requirements at the state and local level. These state partners have the necessary expertise to ensure that OCIO and subgrantees adhere to the requirements as well as acquire the appropriate documentation and ultimately minimize any adverse environmental impacts while completing projects associated with the BEAD program. Any funding necessary to achieve these goals will utilize BEAD funds.

5.4 Key Execution Strategies

Compliance With Statutory Requirements

Eligible Entity Obligations[71]

Consider All Provider Types

- Establish inclusive eligibility criteria
    - Clearly defining the eligibility requirements in a manner that does not exclude any specific provider types.
    - Specifying that all provider types, including cooperatives, nonprofit organizations, public-private partnerships, private companies, public or private utilities, public utility districts, and local governments, are eligible to apply for grant funds.
    - Focus eligibility criteria on factors such as service coverage, scalability, sustainability, and the ability to meet program goals rather than specific provider classifications.
- Conduct outreach and engagement activities
    - Proactively reach out to all provider types to inform them about the grant program.
    - Engage in targeted outreach efforts to ensure all provider types are aware of the opportunity and encouraged to participate.
    - Collaborate with industry associations, trade organizations, and community networks to promote the grant program and encourage diverse provider types to apply.
- Provide technical assistance
    - Offer technical assistance and guidance to potential applicants from all provider types, ensuring they understand the application process, requirements, and evaluation criteria.
    - Establish points of contact to address questions and provide clarification to potential applicants.

[71] BEAD NOFO IV.C.1.

- Develop tools, materials, or informational sessions that cater to the needs of different provider types, sharing best practices and important information.

- Evaluate proposals objectively
    - Design an evaluation process that considers the unique strengths and capabilities of each applicant, ensuring fair assessment.
    - Establish evaluation criteria that focus on the provider's ability to meet the program's goals, deliver quality service, and demonstrate sustainability.
    - Include a diverse panel of evaluators to ensure comprehensive and unbiased review of all proposals.

Ensure Subgrantee Accountability

- Clearly define program requirements and expectations
    - Develop comprehensive program guidelines and documentation that outline the specific requirements, obligations, and performance expectations for subgrantees.
    - Clearly communicate these requirements to potential subgrantees during the application process, ensuring they understand the obligations they must meet to receive and maintain the grant funding.

- Implement a robust monitoring and reporting system
    - Establish a monitoring framework to regularly assess subgrantee performance and progress toward program goals.
    - Define reporting requirements that outline the information subgrantees need to provide, including project updates, financial reports, and performance metrics.
    - Set up a system for subgrantees to submit timely and accurate reports.

- Provide technical assistance and capacity building
    - Offer training and technical assistance to subgrantees to enhance their capacity to meet program requirements and deliver successful outcomes.
    - Provide guidance on best practices, compliance procedures, and project management to help subgrantees effectively utilize the grant funds and achieve desired results.

- Offer targeted technical assistance to grantees without experience in managing federally-funded grants.

- Establish consequences for non-compliance
  - Clearly communicate the consequences of non-compliance or failure to meet program requirements in the grant agreement.
  - Outline steps for corrective action or remediation to address issues of non-compliance and provide subgrantees with an opportunity to rectify deficiencies.
  - Consider provisions for penalties, grant fund recovery, or termination of the grant agreement in cases of severe or persistent non-compliance.

Local Coordination

- Establish local coordination mechanisms
  - Develop a framework that fosters coordination with political subdivisions, tribal governments, local and community-based organizations, and unions and worker organizations.
  - Create partnerships and collaborations with these stakeholders to ensure their meaningful involvement.
  - Establish channels for regular communication and information sharing to keep local stakeholders informed about the program.

- Ensure full geographic coverage of the state
  - Develop strategies to ensure full geographic coverage of the state, including rural, unserved, and underserved areas.
  - Conduct targeted outreach campaigns to engage communities in areas that have historically been underrepresented or marginalized.
  - Collaborate with local organizations, community leaders, and grassroots initiatives to amplify outreach efforts and build trust within these communities.

- Facilitate diverse stakeholder engagement
  - Create opportunities for diverse stakeholder groups to participate.

- Organize public forums, workshops, or town hall meetings that provide a platform for stakeholders to voice their perspectives, concerns, and recommendations.
- Use inclusive and accessible communication methods and accommodations for all individuals to participate.

- Utilize multiple awareness and participation mechanisms
  - Employ a variety of communication channels and strategies to raise awareness about the grant program, including websites, social media platforms, traditional media outlets, and direct outreach to targeted audiences.
  - Develop user-friendly and accessible materials, such as brochures, infographics, and FAQs, to provide clear information about the grant program's purpose, eligibility criteria, and application process.
  - Encourage stakeholder feedback through surveys, online feedback forms, or dedicated email addresses, allowing for easy input and suggestions from the public.

- Emphasize transparency and publication of outcomes
  - Develop documentation and reporting mechanisms to capture and track the progress, outcomes, and impact of the grant program.
  - Publish regular reports or updates that provide transparency on the allocation of funds, awarded projects, and the overall achievements and impact of the program.
  - Ensure that the documentation and publication of results are easily accessible to the public through online platforms or public repositories.

- Leverage partnerships and community networks
  - Collaborate with local and community-based organizations to leverage their expertise, networks, and established relationships within target communities.
  - Engage labor organizations and unions to promote workforce development and equitable job opportunities related to broadband infrastructure deployment and digital skills training.
  - Foster long-term partnerships with these stakeholders to sustain and enhance broadband initiatives beyond the grant program's duration.

Equitable and Nondiscriminatory Distribution of Funds

- Establish clear non-discrimination and equity requirements
    - Develop explicit guidelines and policies that prohibit discrimination in the distribution of funds.
    - Ensure that all applicants, including subgrantees, are aware of and acknowledge their commitment to non-discrimination and equitable practices in the grant application and contract documents.
- Incorporate equity considerations into the evaluation process
    - Explore equity criteria to be used within the grant application evaluation process. Assess how each applicant's proposed project promotes equitable access and benefits to marginalized communities.
- Include equity provisions in subgrantee contracts
    - Develop contract agreements that require subgrantees to adhere to non-discrimination and equity principles in their project implementation.
    - Outline expectations for subgrantees to engage and serve underrepresented communities, promote digital inclusion, and address any existing disparities.
- Monitor and enforce equity requirements
    - Implement a monitoring and oversight mechanism to ensure subgrantee compliance with non-discrimination and equity obligations.
    - Explore reporting requirements for subgrantees to document their efforts and outcomes related to equity and non-discrimination.

Fair Labor Practices and Highly Skilled Workforce

- Establish clear labor compliance requirements
    - Develop explicit guidelines and policies that outline the federal labor and employment laws with which all applicants, subgrantees, contractors, and subcontractors must comply.
    - Clearly communicate these requirements to all stakeholders through the grant application, contract documents, and any associated guidelines and materials.

- Incorporate labor compliance evaluation criteria
    - Include labor compliance as a distinct criterion in the grant application evaluation process. Assess each applicant's demonstrated record of compliance with federal labor and employment laws and their plant to maintain compliance throughout the project.
    - Assign weightage to this criterion to emphasize its importance and ensure that projects with a strong record of compliance are given preferential consideration.
- Collect labor compliance information
    - Develop a standardized process to obtain and evaluate information on the labor compliance record of prospective subgrantees, contractors, and subcontractors.
    - Request relevant documentation to assess their adherence to federal labor and employment laws.
- Conduct labor compliance assessments
    - Establish a mechanism to evaluate the labor compliance practices and procedures of subgrantees, contractors, and subcontractors.
- Collaborate with labor organizations
    - Engage with labor organizations and unions to seek input and expertise in promoting fair labor practices and a highly skilled workforce.
    - Establish partnerships to facilitate ongoing dialogue and collaboration with labor organizations.
- Monitor and enforce labor compliance
    - Implement a monitoring and oversight mechanism to ensure ongoing labor compliance throughout the duration of the project.

<u>Advancing Equitable Workforce Development and Job Quality Objectives</u>

- Establish workforce development requirements
    - Include explicit requirements in the grant program guidelines and contract documents that subgrantees must invest in workforce development initiatives.

- Specify that subgrantees should prioritize the development of a skilled workforce, including provisions for apprenticeship programs, job quality, local hiring, and the inclusion of underrepresented populations.

- Encourage apprenticeship programs
  - Emphasize the importance of apprenticeships by requiring subgrantees to implement apprenticeship programs as part of their project implementation.
  - Collaborate with local apprenticeship programs, trade unions, and community colleges to facilitate the establishment and operation of apprenticeship initiatives.

- Promote quality jobs
  - Define quality job criteria that exceed the local prevailing wage, include basic benefits, and provide opportunities for skill development and advancement.
  - Encourage subgrantees to prioritize the creation of quality jobs within their projects, ensuring that workers have access to fair compensation, benefits, and opportunities for career growth.

- Prioritize local hiring
  - Encourage subgrantees to prioritize hiring workers from the local community, including those residing in the project's service area.
  - Establish guidelines that promote partnerships between subgrantees and local workforce development organizations, job placement centers, or community-based organizations.

- Focus on underrepresented populations
  - Encourage subgrantees to actively recruit and provide opportunities for underrepresented populations, including women, minorities, veterans, individuals with disabilities, and other marginalized groups.
  - Support subgrantees in establishing inclusive hiring practices, creating outreach programs, and offering training opportunities to ensure fair representation and equal access to employment.

- Collaborate with labor organizations and community groups

- Foster partnerships with labor organizations, unions, and community-based organizations to facilitate workforce development efforts.
- Seek input and guidance from these stakeholders to design and implement programs that align with the needs and priorities of workers and communities.

- Monitor and evaluate workforce development initiatives
  - Implement a system for monitoring and evaluating subgrantee adherence to workforce development requirements, including establishment of apprenticeships, quality jobs, local hiring, and diversity inclusion.
  - Track progress, identify challenges, and provide support or guidance to subgrantees as needed.

Civil Rights and Nondiscrimination Law Compliance

- Non-discrimination requirements in contracts
  - Require subgrantees to agree, by contract or other binding agreement, to abide by the non-discrimination requirements set forth in the NOFO.
  - Clearly communicate that failure to comply with these requirements may result in the cancellation or termination of the grant award.

- Compliance training and guidance
  - Provide subgrantees with training and guidance materials to ensure their understanding of the non-discrimination requirements and their responsibilities in upholding civil rights.

- Reporting and documentation
  - Establish mechanism for subgrantees to document their compliance with non-discrimination requirements.

- Monitoring and oversight
  - Implement a comprehensive monitoring and oversight program to assess subgrantee compliance with non-discrimination requirements.

- Technical assistance and guidance

- Offer technical assistance to subgrantees to help them understand and meet their obligations under non-discrimination laws and regulations.
- Provide resources, contacts, or referrals to support subgrantees in implementing effective practices that promote equal opportunity and prevent discrimination.

Climate Resilience

- Utilize weather and climate data
  - Access available weather and climate data from reliable sources such as the National Oceanic and Atmospheric Administration (NOAA) as well as other federal, state, or local agencies.
  - Incorporate historical and projected climate data to assess the potential risk and vulnerabilities associated with infrastructure projects.
- Conduct risk assessments
  - Develop a standardized framework for conducting risk assessments that consider current and future weather and climate-related risks.
  - Include key factors such as extreme weather events, flooding, heatwaves, and other climate-related hazards.
- Engage with experts and stakeholders
  - Collaborate with climate scientists, meteorologists, and other experts to understand the local and regional climate risks and their implications for infrastructure projects.
  - Seek input from stakeholders such as engineers, planners, community representatives, and environmental organizations to ensure comprehensive risk assessments.
- Integrate resilience measures
  - Develop guidelines or requirements for incorporating climate resilience measures into infrastructure projects.
  - Promote the use of resilient design practices to mitigate weather and climate-related risks.
- Use available tools and resources

- Explore tools and resources provided by NOAA as well as other federal, state, or local agencies that assist in assessing climate risks and incorporating resilience measures.
- Provide guidance to subgrantees on how to access and utilize these tools effectively.

- Consider long-term planning and support capacity building
  - Encourage subgrantees to adopt a long-term planning approach that accounts for climate change impacts throughout the lifespan of infrastructure projects.
  - Encourage the integration of climate change adaptation strategies and flexibility in project design to accommodate future changes.
  - Assist subgrantees in seeking technical assistance or resources to help build capacity in climate risk management and develop expertise in climate resilience.

- Foster collaboration and knowledge sharing
  - Facilitate knowledge exchange and collaboration among subgrantees to share best practices, lessons learned, and innovative approaches for addressing climate-related risks.

Administrative and National Policy Requirements[72]

Uniform Administrative Requirements, Cost Principles and Audit Requirements

Department of Commerce Financial Assistance Standard Terms and Conditions

Property Trust Relationship and Public Notice Filings for Grant-Acquired Property

- Familiarize grant applicants and subgrantees with the requirements
  - Provide clear and concise guidance to grant applicants and subgrantees regarding the uniform administrative requirements, cost principles, and audit requirements outlined in 2 C.F.R. § 1327.101, 2 C.F.R. Part 200, 2 C.F.R. § 200.316, and Department of Commerce Financial Assistance Standard Terms and Conditions.
  - Develop training materials to educate grant recipients about their responsibilities and obligations under these regulations.

[72] BEAD NOFO VII.D.

- Incorporate compliance measures into the grant application and agreement process
    - Ensure that the grant applications and agreements include provisions that explicitly reference 2 C.F.R. § 1327.101, 2 C.F.R. Part 200, 2 C.F.R. § 200.316, and Department of Commerce Financial Assistance Standard Terms and Conditions.
    - Require grant applicants and subgrantees to certify their understanding and commitment to comply with the regulations as a condition of receiving grant funds.
- Establish monitoring and oversight mechanisms
    - Develop a comprehensive monitoring plan to assess subgrantee compliance.
- Provide technical assistance and guidance
    - Offer technical assistance to subgrantees to support their understanding and implementation of the requirements.
    - Develop resource materials to address common compliance questions and provide clarification on specific areas of the regulations.
- Maintain accurate records and documentation
    - Require subgrantees to maintain accurate and complete records related to the use of grant funds, financial transactions, and program activities in accordance with the regulations.
    - Establish clear guidelines on record retention periods and the format in which records should be maintained.
- Foster a culture of accountability and transparency
    - Emphasize the importance of accountability and transparency in the grant program.
    - Encourage subgrantees to proactively communicate their compliance efforts and any issues they encounter.
- Engage external auditors or oversight agencies as needed
    - Collaborate with external auditors or oversight agencies to conduct independent audits or reviews of subgrantee compliance.

- Utilize their expertise and recommendations to enhance the effectiveness of compliance measures.

Environmental and National Historical Preservation Requirements

- Conduct Environmental Assessments
  - As needed, require subgrantees to conduct thorough environmental assessments for their proposed projects.
  - Clearly outline the scope and requirements of the environmental assessments, including considerations for impacts on natural resources, ecosystems, air and water quality, and cultural and historic resources.
- Engage environmental experts
  - Encourage grant applicants to consult with environmental experts or relevant agencies to assess potential environmental impacts and develop appropriate mitigation measures.
  - Provide resources or guidance to help applicants identify and engage the necessary experts or agencies.
- Obtain permits and approvals
  - Emphasize the importance of obtaining all necessary federal, state, and local government permits and approvals before commencing any project activities.
  - Clearly communicate the specific permits and approvals required based on the nature of the proposed project.
- Minimize adverse environmental impacts
  - Encourage grant applicants to design their projects in a manner that minimizes potential adverse impacts on the environment.
  - Encourage grant applicants to seek guidance on best practices for environmental sustainability and resource conservation.
- Address historic preservation requirements
  - Ensure that grant applicants are aware of and comply with national historic preservation requirements, including the National Historic Preservation Act and any applicable state or local historic preservation laws.

    - Encourage applicants to consult with relevant historic preservation agencies or organizations to assess potential impacts on cultural and historic resources and develop appropriate mitigation measures.

- Provide technical assistance
    - Offer technical assistance or resources to grant applicants to support their compliance with environmental and historic preservation requirements.
    - Establish partnerships with environmental agencies, preservation organizations, or other relevant entities to provide expertise and guidance throughout the grant applicant and implementation processes.

- Monitor and enforce compliance
    - Develop a monitoring and enforcement framework to ensure subgrantee ongoing compliance with environmental and historic preservation requirements.

<u>Domestic Preference for Procurements (Buy American)</u>

- Include Buy America requirements in grant documentation
    - Incorporate the Buy America requirements into the grant application materials, agreements, and award documents.
    - Clearly outline the expectations for compliance with the Buy America requirements including the use of U.S. produced iron, steel, manufactured products, and construction materials.
    - Provide guidance to educate applicants and subgrantees on the Buy America requirements and their implications.

- Establish verification and reporting guidelines
    - Develop a system for grant recipients to verify and document the origin of materials used in their projects.
    - Establish reporting requirements to track the use of U.S. produced materials and ensure transparency and accountability.

- Communicate waiver process and criteria
    - Clearly communicate the process and criteria for requesting a waiver from the Buy America requirements, if applicable.

- Provide guidance on the necessary documentation and justification needed for waiver consideration.
- Engage with relevant federal agencies for guidance and clarification on Buy America requirements.

Contracting with Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms

- Establish inclusive outreach efforts
  - Develop a comprehensive outreach plan to actively engage and inform minority businesses, women's business enterprises, and labor surplus area firms about the grant program.
  - Utilize multiple channels, such as industry associations, minority business organizations, and local economic development agencies to reach a diverse pool of potential applicants.
- Encourage subgrantee compliance
  - Include requirements in the grant agreement that emphasize the importance of utilizing minority businesses, women's business enterprises, and labor surplus area firms in subgrantee projects.
  - Clearly communicate expectations and obligations to subgrantees regarding their affirmative steps in subcontracting and sourcing.
- Collaboration and partnerships
  - Collaborate with local business development organizations, women's business centers, and others to foster relationships and partnerships.
  - Leverage these partnerships to identify qualified minority businesses, women's business enterprises, and labor surplus area firms for potential subcontracting opportunities.
- Technical assistance and capacity building
  - Provide technical assistance and capacity building support to minority businesses, women's business enterprises, and labor surplus area firms when possible.
  - Explore partnerships with organizations that can offer training programs, workshops, or mentoring initiatives to enhance their competitiveness and ability to participate in grant-funded projects.

Reporting[73]

Reporting Requirements

- Clear reporting guidelines
    - Develop comprehensive reporting guidelines that outline the specific reporting requirements, formats, and deadlines.
    - Clearly communicate the reporting expectations to subgrantees.
- Regular communication
    - Maintain open lines of communication with subgrantees to address any questions or concerns regarding reporting requirements.
    - Provide a designated point of contact who can assist subgrantees throughout the reporting process.
- Streamlined reporting
    - Implement user-friendly reporting platforms that simplify the reporting process.
    - Provide standardized reporting templates or tools that align with the specific reporting requirements.
- Compliance monitoring
    - Establish a monitoring system to verify that subgrantees are submitting reports in a timely and accurate manner.
    - Implement procedures to validate the accuracy and reliability of the reported data.

[73] BEAD NOFO VII.E.

5.5 Estimated Timeline for Universal Service

The estimated timeline for achieving universal access to high-speed internet may vary based on the scale and complexity of infrastructure projects funded under the BEAD program and whether the funding allocated to the State of Iowa by NTIA is sufficient to ensure that all unserved and underserved locations in the state can receive service under the program. However, assuming that the BEAD and DE funding are significant enough to support the needed projects to attain universal access, it is the intent of the Office that the period of performance outlined in the BEAD NOFO will serve as the guide.

There may be additional federal funding programs that could potentially alter the timeline. There are also existing programs outlined in Section 3 that consist of projects currently in progress that are projected to conclude before the BEAD period of performance that assist with this timeline. Barring any significant interruptions to the existing programs and the BEAD program and assuming the BEAD funding allocation is adequate to ensure the needs of unserved and underserved locations across the state are met, Iowa estimates reaching universal service at the conclusion of the BEAD program by 2030.

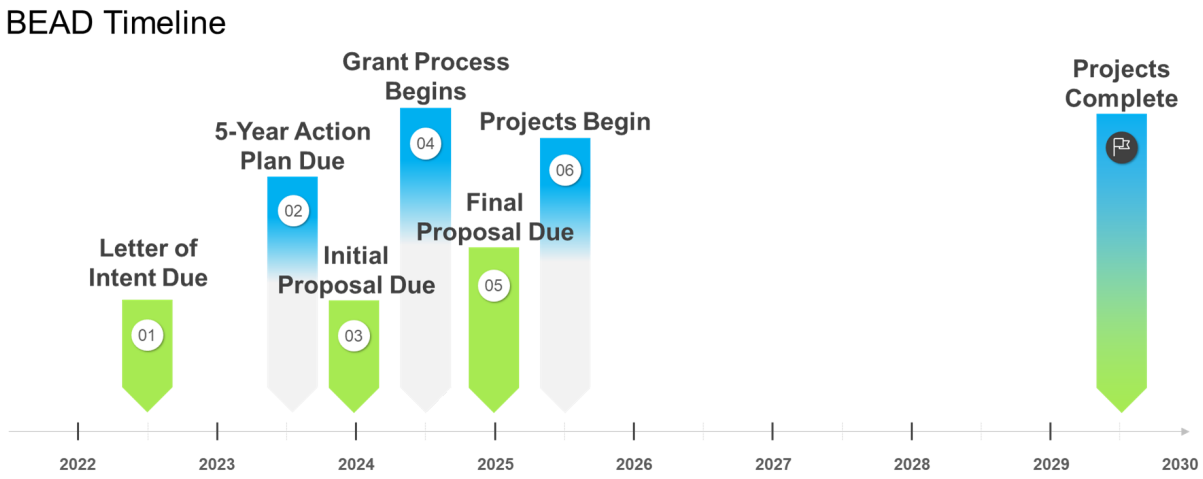


Figure 23: Estimated timeline
*All dates are an estimate and are subject to change

7/18/22
Letter of Intent Due

- Letter of Intent to participate in the BEAD Program.

8/28/23
5-Year Action Plan Due

- The 5-Year Action Plan establishes Iowa's broadband goals and priorities and serves as a comprehensive needs assessment.

12/28/23
Initial Proposal Due

- The Initial Proposal is the “first draft” of the Final Proposal for grant funding which explains how Iowa intends to ensure that every resident has access to a reliable, affordable, high-speed broadband connection.

6/1/24
Grant Process Begins

- OCIO will begin accepting applications for grant funding for infrastructure projects as allocated by the BEAD program.

12/31/24
Final Proposal Due

- The Final proposal is the final version of the detailed plan explaining how Iowa will meet all requirements set forth in the BEAD NOFO and ultimately achieve universal broadband access.

6/30/25
Projects Begin

- Awarded projects are allocated funding and able to begin to deploy the planned broadband network and provide services within the state.

6/30/29
Projects Complete

- Subgrantees that receive BEAD Program funds must complete projects not later than four years after the date they receive the subgrant award. Iowa now has universal broadband service.

5.6 Estimated Cost for Universal Service

Data released by NTIA in May of 2023 indicated that Iowa has 84,099 unserved locations. To estimate the cost for universal service, a starting point is to address the unserved locations as those are the highest priority. OCIO has conducted seven rounds of grant funding to address broadband needs throughout the state. This estimate will utilize data from the two most recent funding opportunities as those most similarly represent today's costs, although costs may vary significantly depending on a myriad of factors. All figures outlined below represent total project cost including awarded and private funds combined.

NOFA 6 and NOFA 7			
Category	**Fiber**	**Fixed Wireless**	**Total**
Locations Served	40,242	11,635	51,877
Total Project Cost	$418,315,590	$16,859,115	$435,174,705
Minimum Cost Per Location	$948	$274	
Maximum Cost Per Location	$67,715	$39,214	
Average Cost Per Location	$10,395	$1,449	

Figure 24: Summary of NOFA 6 and NOFA 7 Cost

First, exploring data from NOFA 6 and NOFA 7, there were 51,877 locations served between the two funding opportunities with an awarded amount of $298,081,976.52. Of those locations, 40,242 were served with fiber to the home via 161 projects. The minimum cost to serve a location with fiber to the home was $948 and the maximum cost to serve a location with fiber to the home was $67,715. The average cost, which was determined by dividing the number of locations served (40,242) by the total awarded amount for fiber to the home projects, was $10,395 per location. If the average cost per location were to remain the same under the BEAD program, the total cost to serve all unserved locations with fiber to the home service, calculated by $10,395 x 84,099 locations, would equal $874,209,105. This number does not include serving underserved locations or community anchor institutions. It also does not include the likelihood that costs will rise between now and 2025/2026 when many projects will likely begin due to seasonal construction schedules, environmental impact assessments, etc. To incorporate increased cost and other factors such as delays due to workforce and supply chain pressure, unknown economic climate, and additional federal requirements, we've added a 50% buffer on top of the estimate.

NOFA 6 and NOFA 7		BEAD	
Fiber		**Fiber**	
Locations Served	40,242	Unserved Locations	84,099
		Underserved Locations	
Average Cost Per Location	$10,395	Average Cost Per Location	$10,395
Total Cost	$418,315,590	Total Cost	$874,209,105
		Total Cost +50% Buffer	$1,311,313,657.50

Figure 25: Fiber only estimate

Under NOFA 6 and NOFA 7, all projects were not completed with fiber to the home service. A number of them were completed using fixed wireless technology. Of the 51,877 locations served between the two funding opportunities with an awarded amount of $298,081,976.52, 11,635 locations were served with fixed wireless via 6 projects. The minimum cost to serve a location with fixed wireless technology was $274 and the maximum cost to serve a location with fixed wireless technology was $39,214. The average cost, which was determined by dividing the number of locations served (11,635) by the total awarded amount for the fixed wireless projects, was $1,449 per location. If the average cost per location were to stay the same under the BEAD program, the total cost to serve all unserved locations with fixed wireless service, calculated by $1,449 x 84,099 locations, would equal $121,859,451. This number does not include serving underserved locations or community anchor institutions. It also does not include the likelihood that costs will rise between now and 2026 when these projects will likely begin.

NOFA 6 and NOFA 7		BEAD	
Fixed Wireless		**Fixed Wireless**	
Locations Served	11,635	Unserved Locations	84,099
		Underserved Locations	
Average Cost Per Location	$1,449.00	Average Cost Per Location	$1,449.00
Total Project Cost	$16,859,115.00	Total Project Cost	$121,859,451
		Total Project Cost +50% Buffer	$182,789,176.50

Figure 26: Fixed wireless only estimate

It is unlikely that all unserved locations will be served by only fixed wireless technology or only fiber to the home, but the two calculations laid out above give an estimated range between $122 million and $1.3 billion to serve only unserved locations in Iowa. That range reflects cost buffers incorporated into the tables set forth above. In an effort to further refine this range, a supplemental calculation is provided based on the percentage of projects from NOFA 6 and NOFA 7 that utilized fiber to the home vs. fixed wireless technology.

In NOFA 6 and NOFA 7, the percentage of locations that were served via fiber to the home was 77.57% (40,242 / 51,877). If we assume that the same percentage of locations will be served by fiber to the home for the total unserved locations for the BEAD program, we arrive at 65,235 locations to be served by fiber under the BEAD program (77.57% of 84,099). Accordingly, 22.43% of locations from NOFA 6 and NOFA 7 were served via fixed wireless technology (11,635 / 51,877). If we assume that the same percentage of locations will use fixed wireless technology for the total unserved locations for the BEAD program, we arrive at 18,863 locations to be served by wireless under the BEAD program (22.43% of 84,099).

NOFA 6 and NOFA 7			BEAD		
	Fiber	**Fixed Wireless**		**Fiber**	**Fixed Wireless**
Locations Served	40,242 (77.57% of total locations served)	11,635 (22.43% of total locations served)	Unserved Locations	65,235 (77.57% of total locations served)	18,863 (22.43% of total locations served)
			Underserved Locations		
Average Cost Per Location	$10,395	$1,449	Average Cost Per Location	$10,395	$1,449
Project Cost	$418,315,590	$16,859,115	Project Cost	$678,117,825	$27,332,487
Total Project Cost	$435,174,705		Total Project Cost	$705,450,312	
			Total Project Cost +50% Buffer	$1,058,175,468	

Figure 27: Fiber and Fixed Wireless combined estimate

Again, assuming the same ratio to calculate the estimated cost for locations to be served with fiber to the home, we arrive at the following formula:

65,235 (77.57% of unserved locations) x $10,395 (average cost per location served with fiber to the home from NOFA 6 and NOFA 7) = $678,117,825 in total estimated fiber costs for projects submitted to the BEAD program.

Similarly, assuming the same ratio to calculate the estimated cost for locations to be served with fixed wireless technology, we arrive at the following formula:

18,863 (22.43% of unserved locations) x $1,149 (average cost per location served with fixed wireless technology from NOFA 6 and NOFA 7) = $27,332,487 in total estimated wireless costs for projects submitted to the BEAD program.

Using the same ratio from NOFA 6 and NOFA 7 as outlined above, the total estimated cost for unserved locations would therefore be $705,450,312 ($678,117,825 + $27,332,487).

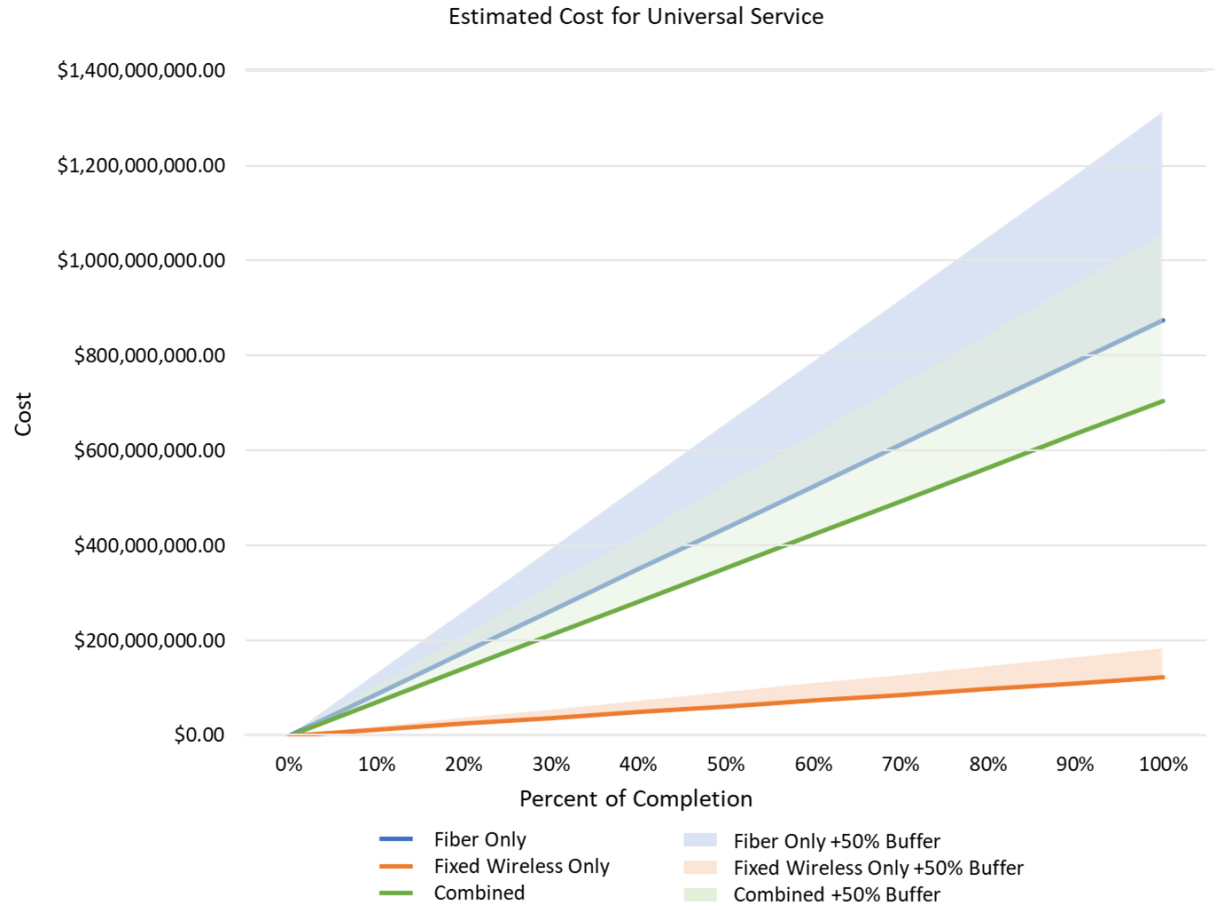
Note: This number does not include serving underserved locations or community anchor institutions. It also does not incorporate the proposed buffer set forth in previous tables, which anticipates the likelihood that costs will rise between now and 2025/2026 when many projects will likely begin construction. And, it assumes that the ratio of projects that use fiber to the home and fixed wireless technology will be the same. To incorporate increased cost and other factors such as delays due to workforce and supply chain pressure, unknown economic climate, and additional federal requirements, we've added a 50% buffer on top of the above estimates to arrive at an alternative total estimated cost for serving unserved locations in Iowa at $1,058,175,468.

Summary

To summarize these estimates, we consider the upper tier as solely fiber to the home which would require approximately $875 million to serve all unserved locations. We can consider the lower tier as solely fixed wireless technology which would require approximately $122 million to serve all unserved locations. Finally, we can consider the estimate incorporating both fiber to the home and fixed wireless technology to require approximately $705 million to serve all unserved locations. Adding in the 50% buffer to each number, we get the following estimates:

- Fiber Only: $1,311,313,657.50
- Fixed Wireless Only: $182,789,176.50
- Combined: $1,058,175,468

The graph in Figure 28 below shows the estimated cost for fiber to the home, fixed wireless technology, a combination of both, and the 50% buffer. The graph also shows the cost to serve different percentages of the existing unserved and underserved locations.



5.7 Alignment

Governor Reynolds' Vision for Iowa identifies a number of focus areas, including but not limited to: education, health care, workforce, and government. Implementing the aspects of BEAD through the Five-Year Action Plan, Initial Proposal, Final Proposal, and ultimately the BEAD grant program align directly with the Governor's Vision for Iowa. Reliable, affordable broadband is a key component to ensuring that the identified focus areas are successfully implemented to achieve the vision.

Education

Governor Reynolds has identified the need for educational flexibility and parent empowerment in the educational system in Iowa. In order for the educational system in Iowa to flourish, access to reliable, affordable broadband must be a priority. With broadband accessible to everyone including all of Iowa's students, they will be able to achieve greater success in the classroom. The ability to access assignments and conduct research will greatly increase the knowledge and productivity of students, give them the flexibility to complete schoolwork from anywhere, and create the ability to collaborate with classmates and teachers easier. Additionally, parents will be empowered to make choices regarding their child's education without being restricted by poor access to reliable broadband services. They will have greater access to the curriculum and increased communication with teachers.

Health Care

Iowa is not immune to health care challenges like provider shortages, rising costs, and lack of access to services. Reliable broadband access can help alleviate these challenges. Telehealth services can provide access to services for anyone that needs it at any time. It can also be more cost effective for the visit itself and without having to travel long distances, which is especially important for Iowans in areas with provider shortages. Telehealth is not the only way broadband can improve health care services. Many medical devices used for monitoring, medication management, and diagnostic technologies need reliable broadband to work properly.

Broadband is now considered a social determinant of health. According to the FCC, social determinants of health are conditions in the places where people live, learn, work, worship, age, and play that affect a wide range of health, functioning, and quality-of-life outcomes and risks, including mortality rates. They represent non-medical factors (e.g., health care access, health insurance coverage, poverty, education level, access to healthy foods, access to transportation, neighborhood crime, etc.) that affect health. Experts have found social determinants of health factors to account for an estimated 80-90% of a person's health status and that such factors are more likely to be major contributors to premature death, yet these factors underlie preventable disparities in health status and disease outcomes.

Workforce

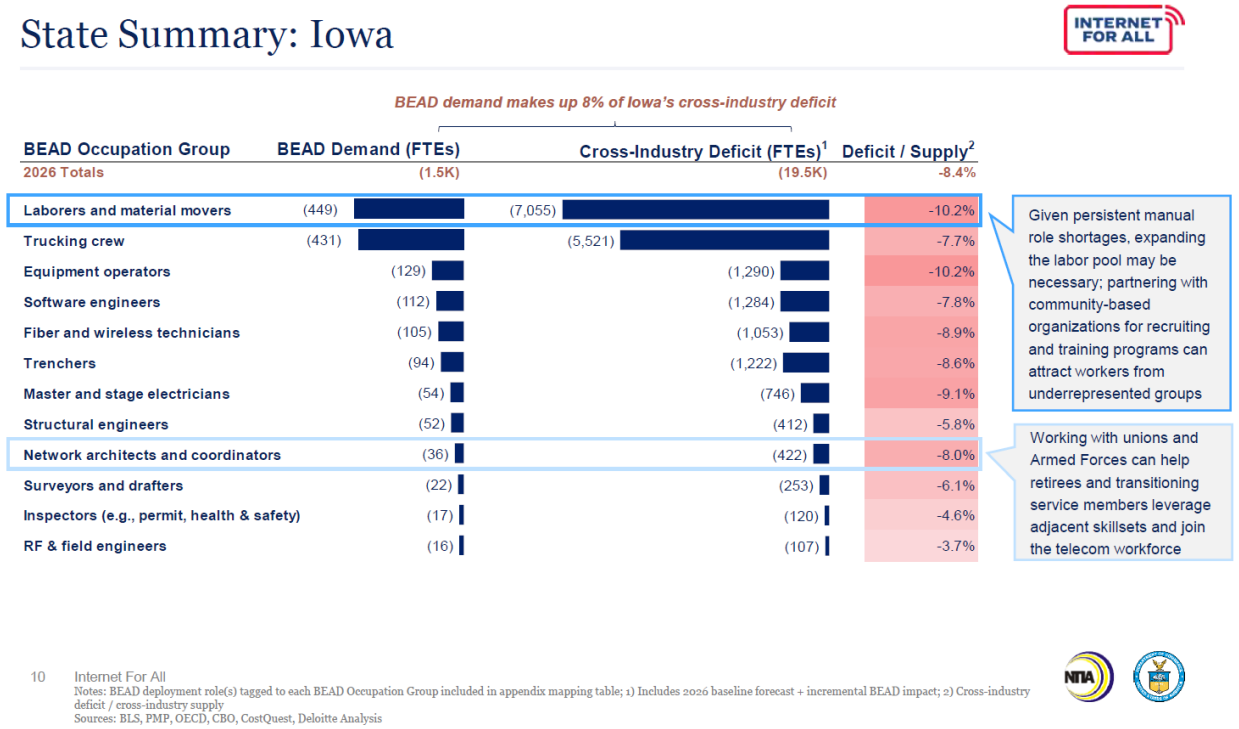
Workforce is a key component of BEAD and Governor Reynolds' Vision for Iowa. The Governor created the Iowa Office of Apprenticeship within Iowa Workforce Development. This office will manage apprenticeship programs and oversight at the state level similar to the US Department of Labor's Office of Apprenticeship. OCIO is looking forward to exploring what this new office will bring forward to address workforce concerns regarding broadband.

Initial discussions with Iowa Workforce Development (IWD) have taken place to determine the best path forward to address any workforce-related issues. A report recently released from NTIA shed light on projected demand for BEAD-related occupations and the potential deficit of workers to fill these positions. The two largest areas of demand for BEAD-related jobs in terms of shear numbers of positions are laborers/material movers and trucking crew. These positions are high-demand in multiple industries. There were a number of occupations listed that show an 8% or higher potential deficit. Those are: laborers/material movers, equipment operators, master and stage electricians, fiber and wireless technicians, trenchers, and network architects and coordinators.

Additional discussions have taken place with Community Colleges for Iowa. Community Colleges for Iowa is a nonprofit, volunteer membership association that advocates on behalf of Iowa's community colleges. Iowa's community colleges are not a system with a centralized administration. They are 15 separate and independent community colleges. There are programs in place that address many of the future workforce needs. Some community college programs even offer free tuition, gap assistance, apprenticeship programs, and credit and non-credit opportunities. Some initial areas to explore include educating/reeducating incarcerated individuals and English language learners. It appears to be recognized that the skills of the existing workforce do not align with the future workforce needs for many positions and a holistic approach will be needed to address these issues.

The NTIA report notes that demand for jobs specific to BEAD makes up 8% of Iowa's cross-industry deficit. It suggests that given persistent shortages of workers with the trade skills necessary to construct new broadband networks, expanding the labor pool may be necessary. Potential solutions to address the deficit include partnering with community-based organizations for recruiting and training programs which might attract workers from underrepresented groups. Also, working with unions and Armed Forces can help retirees and transitioning service members leverage adjacent skillsets and join the telecom workforce. OCIO is eager to continue the discussion to analyze the available data and develop solutions where there may be opportunities and large potential deficits in the workforce.

The infographic below shows data from the NTIA report specific to Iowa that shows the projected deficit for certain positions.



Government

Following the 2023 Iowa legislative sessions, Governor Reynolds signed new legislation designed to transform and reorganize state government in a more efficient and effective manner. Strategically aligning operations and consolidating multiple state agencies will offer a more streamlined approach to state government. In order to complete the alignment, reduce the state government's office space footprint, and consolidate systems and services, broadband access for state agencies and state employees will be key. The need for employees to work from outside of the office along with additional reliance on digital services makes accessible, reliable broadband extremely important. Additionally, the citizens of Iowa expect to interact with their government on a 24x7 basis, through new online portals and applications. It is more important than ever to ensure that the entire state, citizens and public servants, can participate in the digital economy.

Governor's Economic Recovery Advisory Board

In 2021, the Governor's Economic Recovery Advisory Board (ERAB) issued a report which provided the foundation for future economic growth in Iowa. The Board was established in 2020 to make recommendations to improve the state economy in response to the pandemic and to focus on modernizing Iowa's economy. There were eight focus areas, including connectivity and

workforce development. The report included multiple recommendations related to workforce development. Broadband specific recommendations were highlighted as part of the overall goal of making Iowa a global leader in broadband.

Current broadband program initiatives conducted by OCIO and future initiatives made possible with BEAD and DE funding will directly support many of the findings and recommended actions outlined by the Board including:

1. Universal broadband access for Iowans
2. Subsidize low to no cost broadband access to negate the financial barriers of adoption
3. Increase lack of a skilled labor force to implement and build
4. Adequate access to broadband impacts health, learning, and working, as well as the agriculture and manufacturing sectors
5. Lack of universal adoption of broadband resources
6. Expand statewide connectivity and create a statewide Learning Management System (LMS)
7. Lack of new technologies are roadblocks to universal broadband adoption for a variety of reasons
8. Expand remote working opportunities for government employees
9. Support virtual care and telehealth services

The complete ERAB report including all findings and recommendations can be found at: https://governor.iowa.gov/sites/default/files/documents/GovAdvisoryBoard_Report_112020_F.pdf

Existing Programs

Examples of programs that are already in place to help meet the recommendations outlined are below.

Statewide Youth Broadband Advisory Council

The Statewide Youth Broadband Advisory Council (SYBAC) is a unique opportunity for motivated high school students to research and discuss broadband and Internet topics, learn about Iowa technology companies, and discover technology careers. Meetings will take place monthly, throughout the school year, via video conference, teleconference, and/or in-person.

SYBAC is open to 10th – 12th grade Iowa students. Students will identify effective strategies to improve broadband connectivity and community environments, which could assist in advocacy efforts for rural Internet connectivity.

Iowa Workforce Development/Future Ready Iowa

Future Ready Iowa is an initiative to build Iowa's talent pipeline. Education or training beyond high school is the new minimum to earn a living wage. Careers today and in the future require advanced knowledge and/or technical skills. Finding workers with the right skills -especially for

many high demand jobs is a growing challenge for Iowa businesses. Many of the high demand jobs require some post-secondary education and training up to a 2-year degree. The initiative encourages Iowans to pursue high-demand jobs -jobs where the starting wage is at least $14 per hour and have the highest percent growth or projected openings in the next 10 years. The goal of Future Ready Iowa is for 70 percent of Iowa's workforce to have education or training beyond high school by 2025.

Examples of Future Ready Iowa programs include:

Industrial New Jobs Training Program (260E)

The Iowa Industrial New Jobs Training (260E) program assists businesses creating new positions with new employee training. Eligible businesses may be new to Iowa, expanding the Iowa workforce or relocating to the state.

- Administered by Iowa's 15 community colleges(link is external) and financed through bonds sold by the colleges
- Depending upon the number of new jobs pledged and the starting wages for the new jobs, an award amount is calculated and a training plan developed
- The award amount is paid back and bonds retired by the business diverting 1.5% or 3% (dependent upon wage thresholds) of gross payroll, from the Iowa state withholding taxes generated by the new positions
- Training is available at essentially no cost since bonds are retired with dollars that otherwise would have been paid to the state as withholding taxes
- Participants may be eligible for reimbursement up to 50% of the approved award amount for on-the-job training
- May be eligible for a corporate new jobs tax credit if the company's existing Iowa employee base is increased by at least 10%

Who Qualifies

- Must be located in, or relocating to Iowa
- Must be engaged in interstate or intrastate commerce for the purpose of manufacturing, processing, assembling products, warehousing, wholesaling, or conducting research and development
- Service-providing businesses must have customers outside of Iowa
- Cannot have closed or substantially reduced its employment base at any of its other business sites in Iowa in order to relocate substantially the same operation to another area of the state
- To qualify for training services, employees:

- Must be employed in newly created positions
- Must pay Iowa withholding tax
- Must occupy positions that did not exist six months prior to the date that the business and community college agreed to pursue a training project

Iowa Jobs Training Program (260F)

Training Current Employees of Iowa Companies

The Iowa Jobs Training Program (260F) provides job training services to current employees of eligible businesses.

- Helps companies train current employees with new skills
- Eligible businesses work with the local community college, which will assess training needs, determine funds available and provide training
- Valuable employee training for little to no cost

Funding Community College-Sponsored Employee Training Projects

The Community College Consortium (260F) program provides funding assistance for community college-sponsored employee training projects in which two or more businesses participate.

- Iowa's 15 community colleges work with eligible businesses to assess training needs, determine funds needed and provide training
- Valuable employee training at little to no cost

Accelerated Career Education (260G)

Partnering with Community Colleges to Enhance Iowa's Workforce
The Accelerated Career Education (ACE) program is designed to provide businesses with an enhanced, skilled workforce. ACE assists Iowa's community colleges to either establish or expand programs that train individuals in the occupations most needed by Iowa businesses.

- Businesses enter into an agreement with a community college to sponsor a portion or all of the positions created by establishing a new or expanding a current educational program
- By sponsoring the educational program, a company agrees to consider the student for employment upon completion of the respective training

- Businesses must assist with program design and provide a 20% match of the program costs, pro-rated by the percentage of positions sponsored
- Businesses that enter into an agreement with a community college offset the costs of the program through tax benefits
    - Contingent upon the number of program job credits a company accrues and are awarded based upon the number of seats they sponsor
    - Can be up to 10% of the hiring wage (minimum wage being 200% of the federal poverty guideline for a family of two) that a sponsoring business would pay to an individual that completes the program requirements
    - Job credits are a diversion of a company's current state of Iowa personal income withholding tax and are paid to the community college over the life of an agreement, which is usually five years

Who Qualifies

Eligible businesses will be engaged in interstate or intrastate commerce for the purpose of:

- Manufacturing, processing or assembling products
- Construction
- Conducting research and development
- Providing services

Iowa Registered Apprenticeship Act - 15B

The Iowa Apprenticeship Act (15B) provides annual funding to support training or ongoing costs within any active Iowa Registered Apprenticeship program. Funding available under this grant is based on the applicant's proportionate share of the statewide total of qualified registered apprentices participating in a qualified registered apprenticeship program. A qualified apprenticeship program must be registered with the DOL/OA and the program must provide a minimum of 100 in-person contact hours to qualify for funding.

Iowa Registered Apprenticeship Development Fund - 15C

The Iowa Apprenticeship Act (15C) provides annual funding to support the growth of new Registered Apprenticeship programs, particularly programs that feature high-demand occupations. These competitive grants are available annually for RA programs that create a new program with an eligible high-demand occupation or add an eligible high-demand occupation to their existing program.

Last-Dollar Scholarship

This program, as the name implies, is intended to cover any remaining gap between federal and state grants/scholarships and tuition and qualified fees. Credentials include post secondary certificates, diplomas and associate degrees. The Last-Dollar Scholarship is available to students who recently completed an Iowa high school diploma, a homeschool program, or high school equivalency diploma, enroll at least part-time in an eligible program of study, apply for all other available state and federal grants and scholarships, and meet ongoing requirements. Eligible institutions are Iowa community colleges or accredited private colleges in Iowa that offer qualified programs of study and that agree to provide student services (including orientation and academic and career advising) and to facilitate the assignment of a volunteer mentor if a student requests one. Eligible programs include, but are not limited to:

- Telecommunications Technology
- Electric Utility Technology
- Network Technology-Telecommunications/Data Communications
- Advanced Manufacturing Technology
- Utility Technician
- Civil Engineering Technology
- Electrical Trades
- Construction Technology
- Information Technology/Network Administration
- Networking for Systems and Security
- Cybersecurity and Systems Administration

Employer Innovation Fund

The Future Ready Iowa Employer Innovation fund is a grant opportunity for our partners to carry out creative solutions that address local workforce issues. It encourages employers, community leaders, and others to lead efforts for developing regional workforce talent pools. Employers can promote credit and non-credit education and training opportunities in high-demand jobs. The fund can be used in innovative ways to help Iowans achieve their training and education goals.

Iowa Language Learners Job Training Program

In March 2023, Governor Reynolds announced[74] new grant awards intended to reduce language barriers in the workforce. The Iowa Language Learners Job Training Program will help

[74] https://www.futurereadyiowa.gov/iowa-grant-will-help-employers-lower-language-barriers-workplace

employers provide sustained programs for language instruction, to increase proficiencies that support improved communication with staff and overall recruitment and retention.

Ongoing Research Activities

Iowa State University Center for Wireless, Communities and Innovation (WiCI) is working on a number of projects[75] related to research and new technologies:

Real-Time Liquid Wireless Networking for Data-Intensive Rural Applications

Rural broadband is a foundation for a strong rural economy and quality of life, and many rural applications require real-time data-intensive communications. Wireless networks are essential building blocks of rural broadband; however, rural wireless is subject to environmental factors such as weather, terrain, foliage, and crop types and densities, and rural wireless networks need to provide coverage to much larger areas with less density than urban networks. To support real-time data-intensive rural applications, this project will investigate Real-Time Liquid Wireless Networking (RT-LWN). The RT-LWN framework is expected to become a foundational component of rural broadband solutions, and the enabled real-time data-intensive rural applications such as agriculture automation and immersive online education are expected to have a transformative impact on rural industries and communities. This project will generate first-of-its-kind real-world measurement data and models of rural access and backhaul links, and they will be of broad use by the research and education communities. This project will create exciting opportunities for broadening participation in computing, and it will help enrich undergraduate and graduate research and education as well as K-12 outreach. Project results will be broadly disseminated.

OPERA: An Open-Source Ecosystem for Broadband Prairie

Rural broadband is a foundation for a strong rural economy and quality of life, yet 39% of the rural US lacks broadband access, and most agriculture farms are not connected at all. To address the challenge, the project proposes to develop the OPen-source Ecosystem for bRoadband prAirie (OPERA). OPERA will enable researchers to transform their rural broadband research experiments into open-source software, data, and hardware designs that can be integrated with open-source platforms to generate rural-focused broadband solutions. This will enable broadband technology researchers, open-source communities, and rural regions to collaborate in addressing the rural broadband challenge. Accordingly, the project is expected to not only enable rural-focused broadband technology innovation today but also empower rural regions to become active participants in continuous broadband innovation in the long term.

ARA-NRDZ Radio Dynamic Zone

Rural America poses unique needs and opportunities for wireless spectrum sharing. On one hand, addressing the rural broadband challenge calls for spectrum accessibility that would be difficult without spectrum sharing. On the other hand, wireless spectrum tends to be less heavily used in rural regions today, and this offers opportunities of experimenting with novel spectrum

[75] https://wici.iastate.edu/projects/

management strategies for the unused spectrum. In addition, many spectrum users in rural regions tend to be sparsely distributed, and their spectrum use tends to vary over space and time too, offering opportunities for dynamic spectrum sharing. To address the need and to leverage the opportunity for spectrum sharing in rural regions, this project will investigate the ARA-NRDZ radio dynamic zone to enable research, education, innovation, and field testing of a wide range of dynamic spectrum sharing solutions and applications. The enabled spectrum sharing will help improve real-world spectrum use efficiency, reduce spectrum access cost, and empower rural communities to participate in addressing the rural broadband challenge. This project will create exciting opportunities for broadening participation in computing and networking, and it will help enrich undergraduate and graduate research and education as well as K-12 outreach. This project will also integrate the research findings and education materials into the ARA wireless living lab activities which are expected to engage broad stakeholders from industry, communities, government, and academia in advancing the state of the practice in rural broadband and spectrum sharing.

ARA: Wireless Living Lab for Smart and Connected Rural Communities

ARA is an at-scale platform for advanced wireless research to be deployed across the Iowa State University (ISU) campus, City of Ames (where ISU resides), and surrounding research and producer farms as well as rural communities in central Iowa, spanning a rural area with diameter over 60km. It serves as a wireless living lab for smart and connected rural communities, enabling the research and development of rural-focused wireless technologies that provide affordable, high-capacity connectivity to rural communities and industries such as agriculture.

ICICLE: Intelligent Cyberinfrastructure with Computational Learning in the Environment

As a national infrastructure that enables artificial intelligence at the flick of a switch, ICICLE will transform today's AI landscape from a narrow set of privileged disciplines to one where democratized AI empowers domains broadly through integrated plug-and-play AI. Converging under one virtual roof, ICICLE will foster interdisciplinary communities, advance foundational AI and CI, and transform application domains. Through its innovative approach to training and technology transfer, ICICLE will grow an AI-enabled workforce and incubate innovative companies with sustained diversity and inclusion at all levels. Ultimately, ICICLE will enable a transparent and trustworthy national infrastructure for an AI-enabled future to address pressing societal problems and enable decision-making for national priorities.

CyNet: End-to-End Software-Defined Cyberinfrastruture for Smart Agriculture and Transportation

Image processing- and other sensor-based understanding of plant behavior are becoming key to the new discoveries in plant genotypes leading to a more productive and environment-friendly farming. Similarly, connectivity and autonomy are two main drivers of a safe, efficient, and sustainable transportation vision, and real-world study of connected and automated vehicles (CAVs) is a key tool towards realizing that vision. Existing research and education in agriculture and transportation systems are constrained by the lack of connectivity between field-deployed

equipment and cloud infrastructures. To fulfill this gap, we will establish the CyNet cyberinfrastructure at Iowa State University (ISU). CyNet features advanced, field-deployed wireless networks with open-source hardware and software platforms, 10Gbps software-defined optical networks, high-performance cloud computing infrastructures, as well as infrastructure virtualization and management systems that transform the CyNet hardware platforms into a software-defined, shared-use infrastructure.

CyNet is expected to stimulate research and field deployment of PRRT wireless networks (e.g., those considered in 5G and beyond). CyNet is also expected to enable transformative plant science studies and farming practice which promise to move agriculture into a new era in which inputs are optimized, farmer profitability is increased, production levels are less variable from year to year, and the ecological foot-print of agriculture is minimized. CyNet will also enable transformative research in connected and automated transportation, which is key to transportation safety, efficiency, and sustainability. CyNet will enable exciting interdisciplinary education activities in networking, computing, agriculture, and transportation, and it will help engage under-represented students in STEM education.

5.8 Technical Assistance

The following information outlines the additional support and technical assistance needed by the Office to ensure that the BEAD requirements are met in entirety during the duration of the program.

Program Guidance for NEPA/SHPO Review Specific to Telecommunications/Broadband Projects[76]

- Outline or checklist from NTIA for all required environmental documentation to be submitted with the Final Proposal related to telecommunication/broadband/construction projects.
- Outline or checklist from NTIA for all necessary federal permits and approvals for telecommunications/broadband/construction projects.
- Guidance on best practices in designing projects that minimize the potential for adverse impacts on the environment and suggestions on communicating with and ensuring subrecipients adhere to the regulations.

Program Guidance for Complying with the Buy American Preference[77]

- Additional guidance on ensuring that subrecipients adhere to the applicable requirements would be beneficial. This guidance might include pertinent information to include in contracts between the Office and subrecipients as well as between subrecipients and contractors. Additionally, guidance recommending compliance and monitoring activities to ensure that these requirements are met throughout the life of the program.
- While the memo[78] from the Office of Management and Budget issued on April 18, 2022, is helpful, development of an outline or checklist for all required Buy American documentation that is easily digestible and written in a way that subrecipients can understand, would be beneficial.

Contract Provisions Guide for Subrecipients

- A guide outlining the required provisions to include in contracts for subrecipients would be beneficial. The guide should specify which contract provisions are applicable based on the type of contract, amount of the contract, and any other criteria used to discern the appropriate provisions to include.

[76] Section VII. Federal Award Administration Information; D. Administrative and National Policy Requirements; 4. Environmental and National Historical Preservation Requirements. (NOFO pages 86-87)

[77] Section VII. Federal Award Administration Information; D. Administrative and National Policy Requirements; 6. Domestic Preference for Procurements (Buy American) (NOFO pages 87-88)

[78] https://www.whitehouse.gov/wp-content/uploads/2022/04/M-22-11.pdf

Middle Mile Infrastructure Data Analytics to Assist with Targeting Potential Last Mile Providers

- Explore infrastructure asset inventory and mapping options for assisting in creating and analyzing data in order to target last mile providers. This might include external vendors, federal resources, or assistance creating datasets internally to help build out a usable data layer. Utilizing outside plant audits, radio frequency analysis, or other types of field validation options, more accurate broadband service area data may be available.

NTIA Contacts for Program/Grant Questions

- A list of NTIA contacts for specific program or grant questions would be useful. Knowing which person to contact for specific questions or categories of questions would help streamline the process of finding a solution.

Federal Contacts or Resources for Identifying All Federal Incentives Related to Broadband in the State of Iowa

- A list of federal contacts or resources that are available to assist the Office in identifying all federal incentives related to broadband and digital equity in the state of Iowa would be beneficial.

An Updated Digital Equity Viewer with Census Block or County Level Data That Can Export into a CSV File

- While the Indicators of Broadband Need tool[79] is useful, additional granularity would help the Office determine needs statewide. Currently, the map is limited to six layers. The Digital Nation Data Explorer on the NTIA website[80] offers datasets up to November of 2021 that details many more options to dig into the available data, but it is only at the state level instead of county or census block. Combining the data from these two sources into a comprehensive tool that can also be exported would be beneficial.

[79]broadbandusa.maps.arcgis.com

[80]https://ntia.gov/other-publication/2022/digital-nation-data-explorer#sel=teleworkUser&demo=&pc=prop&disp=both

Additional Information on How Public/Private Partnerships Can Implement Projects with Grant Funding

- Procurement and contracting guidance in particular for public/private partnerships.
- Successful examples of these partnerships and best practices when implementing these types of projects.

Broadband Onboarding Program, Process, or Resources to Assist New State and Non Federal Entity Staff

- Training materials (videos, documents, guides) to assist state and local staff with broadband specific resources similar to FEMA

Conclusion

This Five-Year Action Plan is a comprehensive and ambitious initiative that sets the course for transforming Iowa's broadband landscape. With a clear vision of connecting every community and ensuring equitable access to high-speed internet, we have established a solid foundation to drive economic growth, enhance education, improve healthcare, and promote community development.

The plan's goals and objectives provide a roadmap for achieving our vision, focusing on key areas such as expanding infrastructure, increasing adoption rates, and fostering digital literacy. By employing existing programs and building strategic partnerships, we can leverage existing resources and expertise to maximize our impact. The asset inventory and needs and gaps assessment enables us to better understand the landscape and ensure that all communities are able to have their voices heard.

Our priorities are clear, and we have planned a range of activities to achieve our goals. Key execution strategies have been outlined to guide our efforts and ensure efficient implementation. While the timeline is estimated, we are determined to work diligently to progress and deliver results as timely as possible.

It is important to acknowledge that achieving the vision requires a large financial investment. While the estimated cost of the plan is significant, we recognize the long-term benefits and return on investment for the state. Solid public-private partnerships are crucial to the success of this opportunity.

Our plan aligns with broader state initiatives and national strategies, ensuring that Iowa remains at the forefront of digital innovation and competitiveness. Additionally, technical resources will be needed for communities, organizations, and individuals to navigate the complexities of broadband deployment and utilization, fostering sustainable and effective outcomes.

The Iowa BEAD Five-Year Action Plan represents a transformative opportunity to bridge the digital divide, create opportunities, and empower every resident of our great state. By working together, engaging stakeholders, and executing our plan with determination, we will build a connected Iowa that thrives in the digital age. Together, we can unlock the full potential of broadband and shape a future where opportunities are within reach for all.

Appendices

Appendix A

Step 1: Broadband Goals and Definitions

Broadband TOGETHER™

1. **Broadband Goals and Definitions**
   This step leads participants through a discussion that articulates specifically what attributes broadband could have in the community. This formal definition becomes the "true north" that helps frame subsequent discussions.
2. **Broadband Delivery Methodology**
   This step outlines the options and the pros and cons of various broadband delivery structures, including public private partnerships.
3. **Basic Broadband Data**
   This step quantifies both the existing broadband products and the providers per the Iowa broadband map. A basic internet profile of service providers is performed along with a rudimentary user survey to identify perceived gaps.
4. **Broadband Currency**
   This step aids in the identification and cataloging of any noncash currency that communities could provide to support the delivery of new broadband services and facilitate usage.
5. **Broadband Adoption Initiatives**
   This step explores options for communities to leverage in order to build support, increase constituent understanding, and generate greater demand for broadband.
6. **Project Costing Considerations**
   This step outlines "Plan - Build - Operate" project components inclusive of the elements of a broadband project costing exercise.
7. **Project Funding Alternatives**
   This step leverages the information gathered in the previous steps and reviews options for how funding alternatives could integrate into your broadband approach.
8. **Broadband Strategy Document**
   This step focuses on compiling a strategy document that defines the community's direction for future action. This final step is a well-defined starting line for your broadband journey.

Broadband is in many ways just a word. It's used in a myriad of ways for a myriad of purposes. Because broadband is just a word until it's specifically defined, it can be made to have many different meanings.

A broad technical description of broadband might be "the bandwidth characteristics of a transmission medium and its ability to transport multiple signals and traffic types simultaneously". What does that really mean and of what value is something that broad in the creation of your broadband project?

The most relevant definition of broadband is the one that is metrically quantified that fits a specific set of users based on attributes determined to meet the specific needs of those users.

The following topics should be discussed, understood, and quantified in detail in order to create a comprehensive definition of broadband that fits your community.

Why do you think you don't have the broadband that you want or need?

It's not broadband itself that is important but rather what can be done using broadband. It's often a productive exercise to determine if it actually is bandwidth you are lacking or other service-related issues that are lacking (reliability, ease of service, etc.).

What does broadband really do?

Broadband allows users to run applications. These applications vary by user. You should discuss and articulate the specific applications that are important for your users to be able to execute.

What Covid taught us.

The primary lessons of Covid were threefold.

1) Yes. Having adequate broadband does have a huge impact on how one lives their life.
2) There is a new "triple play". It's no longer about Voice-Video- Internet. It's about Working from Home – Learning from Home – Being Treated at Home.
3) Broadband is consumed at the family level simultaneously. What once was an adequate level of broadband becomes inadequate when the entire family is using it at the same time all the time.

Bandwidth

This is the size of the broadband signal and measured in megabits per second (mbps). Bandwidth represents the volume of data that can move across a connection in a specific period of time.

Symmetry

Bandwidth travels in two directions. It has a downstream path which retrieves information, and it has an upstream path which sends information. These functions occur virtually at the same time. In the early stages of the internet almost all content that required significant bandwidth was retrieved (i.e. downloaded) from the internet. Users "surfed" the web for content. As applications became more sophisticated, they became more interactive. Sending and receiving (uploading and downloading) became in some cases equally important. A symmetrical broadband connection of adequate size allows interactive video applications to function properly.

Latency

Latency is the measure of how fast the data carried via a broadband signal takes to get to and from its destination across the network. It is measured in milliseconds. It is important because many applications are designed to function with specific levels of latency. Lower latency is better than higher latency. In defining what broadband is required to be for you, consider the latency requirements of the applications you will be using.

Location (Where)

Broadband exists at the end of a connection at a user's location. Availability of a broadband connections can change dramatically from one side of the street to the other. Certain delivery platforms have distance sensitivities. Defining the geography that you require broadband be available in is one of the most critical aspects of setting your goals. Each geography presents opportunities and challenges particularly as it relates to funding strategies.

Cost / Data Caps

Broadband that is not affordable either for one time cost or monthly recurring costs is of little use to anyone. Define what affordable is to your community and why. Many smaller rural locations with less potential users pay more for broadband than urban locations that have high density of users. Generally, if there are less users available to support broadband infrastructure, more capital offset is required to deliver affordably priced broadband. Defining this variable at the beginning of the journey impacts a number of important variables down the road.

When

This may seem like an odd defining criterion however it often times is the most relevant. It's likely that if one waits long enough that the right level of broadband will eventually find them. Many communities however would like to impart a greater degree of catalyzation to the creation of adequate broadband. If the level of interest or need in a community is low, then waiting for the market to make it happen may be fine. If not, then driving the creation of a project is often the best course. Most community driven broadband projects define a specific timeline they wish to have new capabilities available.

Summary and Output

Step 1 of Broadband Together will engage in a discussion with the community on the above elements of a community broadband definition. This process includes understanding why specific attributes are important. After this discussion, we will assist in the articulation of how broadband is defined by your community.

This definition will frame future discussions. Others may suggest that "you don't need that much broadband". Your detailed well-reasoned broadband definition however serves as the guiding star for all subsequent steps of your unique Broadband Together journey. If something changes, everyone knows why it changed and what that change means in the context of your overall broadband project. The path becomes much less convoluted and confusing when the required dialogs are held in the context of your quantified broadband definition.

Totally by way of example a broadband definition may look like the following.

"Our community has determined the minimum level of broadband we require is 100 mbps. This bandwidth needs to be symmetrical with upload and download data volume being equal. Latency needs to not exceed 40 milliseconds for any user. This configuration allows for interactive video applications (such as Zoom meetings) to occur. This base level broadband service needs to be available throughout the city limits of Smalltown, Iowa as well as within a half mile radius outside the city limits, to every home and business at a cost of no more than $99 per month with an initial one-time installation cost to the user of no more than $250. This new broadband capability needs to be created within 30 months of September 1, 2021.

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Step 2: Broadband Delivery Structures

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This step walks potential broadband project sponsors through a discussion of the various types of organizational methodologies typically used to deliver broadband.

All methodologies have examples of success and failure, and all methodologies have operational pros and cons dependent upon your goals.

The Broadband Together journey requires that a service provider direction be established at some point as the process evolves. It's important to understand that the challenges that face service providers in the delivery of broadband are fundamentally the same challenges no matter what structure is selected. The difference is mainly in perspective and motivation for solving the challenge.

Almost all barriers to broadband are in some way economic. For example, service providers don't serve low density markets simply because they don't want to. They are often slower to serve or upgrade service to these markets because it is economically impractical for them to do so. Most providers have a business plan that contains capital investment requirements and limitations as well as return on investment (i.e., profit) expectations. Sometimes the goals of users and the goals of providers can appear be in conflict. A service provider with an existing investment in infrastructure may want to grow new capabilities slower than their customers believe is needed in an effort to maximize their initial investment. Creating new levels of broadband service to those markets that have preexisting copper or coax last mile infrastructure (as opposed to fiber) often requires attacking the economic challenges on multiple fronts with all stakeholders working together. Step 2 of the Broadband Together journey reviews the perspectives, advantages, and disadvantages of each delivery methodology as a way to gain a better understanding of viable alternatives for a community to consider.

Types of Broadband Service Providers

Existing Incumbent Independent Provider(s)

In every market there is almost always an existing, generally dominant, broadband provider of some sort. Most incumbent providers today are "progressive" in the sense that they know broadband is important to their customers and is becoming more so each day. They want to serve their customers, however in that endeavor, often have complex financial issues to resolve.

- How would you define the relationship between your community and your existing incumbent provider(s)?
- Do effective channels of communication exist between you and them? What are those?
- Is your provider formally aware of your broadband goals and the gaps that you feel exist?
- What reasoning have those providers offered for not making the changes you feel are necessary to reach your broadband goals?

New Independent Entrant

In the current environment where broadband is considered increasingly more and more vital to commerce, some service providers are willing to consider organic expansion outside of their current service areas. "Overbuilding" an existing incumbent provider(s) duplicates certain elements of infrastructure making it an economic decision that is not taken lightly. Duplicating infrastructure can be a very different proposition than "deploying broadband infrastructure where nobody else is". Many funding sources also discourage funding projects where "adequate

broadband service is already deemed to exist". Market opportunities do not always simply expand with the presence of more providers. The economic broadband "pie" remains somewhat the same creating additional economic challenges for all providers. However, there are situations where progress towards your specific broadband goals cannot be made without existing incumbent providers. If this proves to be the case, a discussion with a new entrant(s) to the marketplace who is willing to explore ways to provide broadband service consistent with your goals can be an appropriate and productive path.

- Who are the new service providers that may be interested in expanding into your community with the broadband products that meet your goals?
- What would or could they do differently that would improve your situation?
- What support would your community need to provide a new broadband entrant to make it practical for them to enter your community?
- Has this level of support been discussed with existing providers?

Rural Electric Cooperative (REC)

REC's becoming a service provider for broadband in areas they offer electric service is a quite active and growing space. REC's by their nature usually serve rural customers where broadband tends to be most difficult to deliver. REC's understand infrastructure because they deliver power to customers. They have a natural advantage in their ability to lower infrastructure deployment costs in that they already own or control power related infrastructure (poles, etc.). These organizations are often member based and motivated by member needs. REC's also often use fiber-based infrastructure and technologies to manage their own power grids. Expanding fiber for purposes of broadband service delivery can be a natural extension.

- Does your project thinking already include any REC areas?
- Have you approached them about your goals for broadband delivery?
- Are they aware of the gaps you feel exist in available broadband?

Municipal Utility (Full or Open Access Infrastructure only)

A Municipal Utility is where the community itself becomes the broadband service provider whereby all the challenges of delivering service become theirs to solve. There are versions of this delivery methodology where the community may provide broadband infrastructure only as a utility (ex. fiber or conduit) on an "open access" basis for a service provider(s) to use in the delivery of their broadband products. The Municipal Utility model offers the closest connection between the community and the broadband service itself resulting in a greater measure of control. Municipal Utility delivery that requires the community itself to deliver service can be more operationally complex. The key to Municipal Utilities that wish to offer broadband service is a well thought through business plan combined with strong community support.

- Has your community gone through the required processes (ex. referendum) to create a Municipal Utility entity in Iowa? How positive was the community response to this option?
- Have your community sponsors fully considered the mechanisms required to deliver all the required elements of broadband service to customers?
- Have you considered an "open access" infrastructure only model?

A Public / Private Partnership (P3) is the concept whereby the community and the service provider find formal and organized ways to work together in support of solutions to the common challenges present in the delivery of broadband service. Goals are aligned. Common challenges are understood. The parties work with each other towards a common positive mutually beneficial end result. Communication and organization of a working relationship are key. P3 is presented here as a "concept" rather than an independent structure / methodology because it can overlay and impact all structures. P3 can be a significant catalyst to creating new broadband capabilities if organized and executed properly. Many communities engage outside expertise of various types (particularly legal and financial) to guide them through the nuances of creating an effective P3 arrangement.
The output of Step 2 of the Broadband Together journey is acknowledgement of the discussion points / questions and establishment of a preferred delivery direction. This may change as your journey proceeds. However, establishing a preference can aid immensely in understanding the context of future steps.

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Step 3: Basic Broadband Data

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Before communities dive too deeply into broadband related studies it's often a good idea to organize some of the available basic broadband data about products, service providers and user perceptions. Much of this data can be gathered from existing sources such as Iowa's broadband map or the internet. Other data points need to be created through directly interfacing with users. This cursory level of data is not intended to replace full survey, study or analysis of project elements that may be required as your Broadband Together journey progresses. Rather, the basic level of data created in this step is meant to help you frame your basic strategy and provide a level of understanding of how much additional data you may require to adequately define and support your project.

Areas that the Broadband Together process will analyze and summarize in this step are as follows:

A summary of the levels of broadband currently stated to exist in your project area / marketplace based on the current Iowa Broadband Map.

- This data can be an important element in understanding eventual project funding eligibility.
- This data outlines a basic product matrix within your project area.
- This step discusses the methodologies used to gather and report this data.
- This step discusses perceptions of broadband reporting accuracy and gathering techniques including ideas to mitigate inaccuracies.

Provides a list of the service providers associated with the broadband products that are stated to exist in the proposed project area.

- Organizes any available contact information for the providers who reported available service to be used for potential clarification of stated products or P3 discussion.

Identifies additional product information that these providers offer visibility to via their web presence by performing a basic web search and findings summary.

Identifies, via survey, general perceptions of key anchor entities and business users in your community regarding the adequacy of the broadband products

available to them

- *See attached Basic Broadband Data_Community Survey.doc*
- Selects up to six businesses or key anchor entities in your area for FG to execute a basic broadband survey capturing perceptions on broadband product adequacy, cost and service levels.
- Creates an assessment document outlining survey results.
- Outlines potential areas additional user research may be appropriate.

Overlays the data captured in Step 3 with the goals and definitions articulated in Step 1 delivering a basic gap analysis.

The process of overlaying formal basic broadband data with formal broadband definitions and goals serves to clarify future discussions between stakeholders on the Broadband Together journey. It also gives communities an initial indication of what areas they may wish to acquire more data / information in support of project creation.

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Step 4: Broadband Currency

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"Broadband Currency" is defined as those things a local community or county can provide to better facilitate the deployment of broadband service within their localities. All stakeholders in the deployment of broadband – including service providers – have some level of broadband currency. Examples of broadband currency include:

Cash

This is always an attractive option if it is available. Unfortunately, available cash for broadband initiatives once they get past the initial study stage is not always available in an environment of competing municipal priorities.

Utilization of Tax Increment Financing (TIF), Self-Supported Municipal Improvement Districts (SSMID) or other economic development tools

At its core, a broadband project is ultimately driven economic development factors. Economic development entities have tools available in their fund-raising arsenal that often (not always) can be a positive factor in a broadband project. These tools should be explored in the context of your broadband journey.

- **TIF:** Tax increment financing is a public financing method that is used as a subsidy for redevelopment, infrastructure, and other community-improvement projects. The original intent of a TIF program is to stimulate private investment in a blighted area that has been designated to be in need of economic revitalization.
- **SSMID:** A "self-supported municipal improvement district" is informally referred to as a SSMID District. Generally, it is an area of contiguous property within a city - often in the downtown area - either zoned for commercial or industrial purposes or a duly designated historic district. A tax levy is imposed on property within a SSMID District in addition to all other tax levies. The added revenues can be used for improvements to the District, administrative fees, and debt for the cost of improvements.

Property tax exemption

Understanding how broadband infrastructure is taxed and looking for ways to mitigate or lower that cost borne by service provider is a form of currency.

Rights of way / permitting / franchising / local regulation

Deploying broadband infrastructure is costly. Part of that cost is the legal requirements imposed on infrastructure deployment by a community to comply with codes and statutes. Anytime these requirements can be streamlined in such a manner that it lowers the cost of deployment, currency is created. This is not to imply that construction rules should be eliminated but rather, codes and statutory requirements should be reviewed with an eye to streamlining wherever possible without impacting their original purpose.

Anchor businesses or users

Broadband revenue is currency. Various P3 strategies can be augmented by quantifying dollars spent on broadband by existing users and focusing those dollars on your specific broadband journey and goals.

Public / private partnerships

The P3 concept was covered in Step 2 as a potential accelerator to your desired deployment methodology. Any time multiple parties can find mechanisms to "share" costs to a mutually beneficial end currency is created.

Broadband adoption initiatives / citizen engagement

This is covered in greater detail in Step 5 of the Broadband Together journey. The concept here is that creating actual market demand for broadband products adds to the economic formula associated with deployment. Finding ways to support more users buying more broadband is a distinct form of currency.

Existing city/county-owned infrastructure (fiber, conduits, poles or pole rights, towers, roof-top rights, other vertical structure rights such as water towers, monuments)

Many if not most communities already have certain infrastructure components under their control that if made available could lower the cost of a broadband project. Cataloging these items and determining their appropriateness and / or availability for use in your strategy can pay large dividends. Existing infrastructure that does not have to be duplicated is currency.

Broadband currency is something a community can bring to the table in discussions with potential service providers on how to make better broadband more economical to deploy. It also demonstrates that the community is invested in trying to find solutions to help service providers improve broadband offerings. The key to leveraging this "noncash" form of currency is to understand where to look, understand the economic offsets to new infrastructure deployment and creation of an organized well-articulated catalog of broadband currency that can support your strategy.

Step 5: Broadband Adoption Initiatives

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Much of the emphasis found in broadband thinking currently is on creating more access to adequate broadband. This is the infrastructure approach to creating more broadband.

There is, however, another important aspect of creating new broadband capabilities that is somewhat more nuanced regarding its impact. This is the concept of Broadband Adoption.

Broadband Adoption, or Adoption as we will refer to it in this discussion, can broadly be defined as the number of homes or businesses that actually subscribe to available broadband products. Infrastructure that is deployed in the absence of an actual user is a financial drag on the entire process.

It is logical that the most significant barrier to not being able to adopt broadband is not having access to it in the first place. If broadband doesn't exist for you, it can't be adopted. Lack of access is therefore the most significant barrier adoption.

The second most significant barrier to Adoption is cost. This barrier does not apply to all potential users in the same way. Many users can afford the available broadband offerings even if they are priced on the higher end of the spectrum. Many users, however, cannot afford the higher end products.

The third barrier to adoption can broadly be categorized into several sub-categories primarily related to education or awareness.

Many potential users, particularly some older adults , struggle with understanding or interfacing with the applications that broadband enables. Once these potential new users are oriented to the basic principles of internet usage or the advantages of the online experience, this becomes less of a challenge.

Adoption is important for another reason as well. Broadband Adoption has a direct correlation to the economics of broadband. The Broadband Together journey guides communities through a basic understanding of those elements and realities that make infrastructure projects possible or practical. Areas that have high levels of Adoption are considered high demand areas by service providers. Higher demand translates into more broadband usage and more usage translates into more revenue. More revenue enables service providers to deploy more broadband cost effectively in lower user density areas.

Adoption and access creation are linked in this manner.

It's from this perspective the Broadband Together journey will discuss Adoption. Any time a community can take direct action to increase Adoption by removing or tempering barriers to Adoption, they are contributing in a positive fashion to their broadband access strategy.

How might certain barriers to Adoption be mitigated?

As we mentioned earlier, lack of access is the most obvious barrier to Adoption. Community efforts at understanding and positively impacting new infrastructure deployment remain critically important. The previous four steps in the program provide communities with a solid start in understanding the fundamentals of project creation which advances broadband access.

Broadband that is too expensive to purchase has the same effect as having no

access. Communities should become familiar with and leverage federal or state programs that may provide cost offsets for not only the broadband products, but the devices required to utilize a broadband connection (laptops, tablets, etc.).

Lifeline is the FCC program that makes communication services more affordable for low-income consumers and should be considered in your broadband strategy.

https://www.fcc.gov/lifeline-consumers

The Emergency Broadband Benefit is also an FCC program that helps struggling households afford internet service during the pandemic.

https://www.fcc.gov/broadbandbenefit

The Next Century Cities initiative offers some very well-organized concepts by which communities can help potential users adopt broadband at higher levels.

https://nextcenturycities.org/becoming-broadband-ready/

A barrier to adoption that can be significantly impacted by organizing your community is broadband education.

One approach is to provide a platform for the youth in your community to interface with and educate older adults on the basics of broadband. It's rare for people under the age of 25 to require much of a push to adopt broadband. They were raised using applications driven by broadband. These applications were often integrated into the education curriculums. Creating programs that allow younger people who are more proficient to interface with older people who may be less proficient on how to use broadband can pay big dividends on numerous fronts.

Another approach is to directly engage your health care providers to better understand what is available in the way of tele health applications in your community. Offer to assist them in communicating this information throughout the community. Your local library is considered a community anchor institution by many broadband funding sources. Contact them regarding what specific programs available to them to promote Broadband Adoption. Consider supporting the costs for larger broadband connections at the library and other locations the public may access the internet.

Your program should connect with local businesses that use broadband extensively (which almost all do) to investigate what training they may have or be willing to share on broadband use with the community in general.

Position your community to participate in Broadband Forward and Telecommuter Forward certification programs as they become available.

Leveraging the power of organized initiatives within your community is the best mechanism to increase local broadband awareness and subsequent adoption rates which in turn translate into stronger interest by service providers to create more access in the community.

Strong broadband Adoption initiatives lead to stronger availability of broadband access.

As your Broadband Together journey continues you will find that more and more opportunities to promote greater broadband Adoption programs will present themselves. Awareness of broadband issues is a significant contributor to the creation of Adoption initiatives.

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Step 6: Project Costing Considerations

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The purpose of the first five steps of the Broadband Together Journey include: community definitions; data collection; definition of needs; market analysis; and geographic analysis that will lead you to a probable destination regarding the "what" that needs to be built.

The result can be as complex as proposing to build a broadband utility from the ground up, or as simple as negotiating with an incumbent to increase their focus in your community. Since these early steps have defined a strategy for your community or county, it's time to plan for the project, put together a build budget, and find out what operational costs must be supported.

This "Plan-Build-Operate" step of the Broadband Together Journey will define the level to which you need to seek funding to reach your goals.

To create a project that will be judged and approved by a grant committee your project will need to answer several specific questions. These include what you will deliver, to whom it will be delivered, what will the cost be, and can the system be sustained over the course of time. These parameters will all be judged against the criteria that the granting entity has defined, so the detail contained in your design must be balanced toward a sound service delivery model.

You and your partners will need to understand the plan for your project, and you will have to understand the details of your build process and how that system will operate. While all the minute details of Build and Operate will not be solved in Planning, you should gain an understanding as to the complexity of these steps so your community can select a valid strategy to delivery.

There will should be three phases of your program: plan, build and operate, as follows:

- **Plan - Grant/Funding Preparation**
  - Product and Geography
  - Approach
  - Initial Design and Cost Modelling
  - Timing and Phasing Estimation
  - Application Development
  - Grant Application
- **Build - Post Grant Development**
  - Final Engineering
  - Project Supply Acquisition
  - Network Deployment
  - Test and Accept
- **Operate - Post Development Business Development**
  - Market and Sell
  - Fulfill
  - Service and Repair
  - Customer Service Center
  - Billing

Each of these will have a cost, and your delivery strategy will define who bears those costs, and how they will be included in your project. Based on our previous steps, you can look at this outline to determine how costs and responsibilities will be borne.

As you proceed with planning for your project, you reach a point where you must commit to a direction. After you have defined the product and selected the geography, the method for delivery will require your partner's assistance, a contract consultant, or your internal engineering team to engage. At this point on your journey, you will decide – will you have a partner?

Once you have made that decision, it will be time to design your network and apply costs to it so that a budget for required capital can be assembled. This will require a level of expertise from your team, your partner's team, or a contracted resource.

- The initial design must include required infrastructure to deliver the service to the target areas.
- The initial design must include required connections (and equipment) to connect the addresses to the delivery infrastructure.
- It must include costs for connectivity to connect the infrastructure to required Broadband destinations.
- It must include maps, routes, and quantities of all the involved elements.
- It must define the intended capacity loading of each element to ensure that the proposed structure can support the target population.
- The initial design should consider savings tied to your currency.

Upon completion of the initial design, your assembled experts can determine the cost of the components used. Some considerations to apply to this work:

- **Consideration should be given to line items in the BOM**
  - Is an RFP required to get pricing?
  - Is a particular brand viable?
  - Does the pricing reflect a discount or list price?

- **How were labor/construction costs estimated?**
  - Consideration for Federal Labor laws?
  - Was the cost estimated or quoted?

- Have you included management/oversight costs?
- Have you included all permitting and land lease/purchase requirements?
- Was your detailed engineering/design cost included?
- Is the customer end point considered to be a capital cost or a fulfilment cost?
- Is your design built considering growth to your business plan, or is it built to maximum capacity?

The development of your network infrastructure will define the capital costs required, but it will be necessary to consider the operating cost of your infrastructure. On either end of the development scale a grant program will require a business plan that represents the on-going support of the project.

- **You must consider cost of sales**
  - Marketing
  - Sales Force
  - Customer Service

- **You must consider Service and Repair**
  - This includes maintaining a stable operation.
  - This includes monitoring growth and expanding infrastructure as needed.

- **You must consider rate of acquisition and consumption**
  - How many users will be added?
  - How much capacity will they use?
  - What is the growth rate?

- **You must build a business plan that balances these costs and the investment made for the development**
  - Include your currency.
  - Include any match dollars expected.
  - Demonstrate that the project will sustain itself over time.

Having completed a full analysis of the development and the operation of your proposed project, you can proceed to the next step in your journey.

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Step 7: Project Funding Alternatives

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6. **Project Costing Considerations**
   This step outlines "Plan - Build - Operate" project components inclusive of the elements of a broadband project costing exercise.
7. **Project Funding Alternatives**
   This step leverages the information gathered in the previous steps and reviews options for how funding alternatives could integrate into your broadband approach.
8. **Broadband Strategy Document**
   This step focuses on compiling a strategy document that defines the community's direction for future action. This final step is a well-defined starting line for your broadband journey.

One of the most common – and often most problematic – approaches to broadband is to focus on how to get broadband funded as a 'first step'. As discussed, prior, funding cannot occur (from any source known to FG) without having two items established first:

1) A defined project. This includes a community's definition of broadband (speed, attributes, geography, and retail cost considerations), and
2) A service provider capable and willing to provide that definition of broadband in the community. That could be an existing service provider, a new entrant, or the community itself as either an infrastructure and/or municipal service provider.

These are basically the minimum prerequisites to any funding discussion. There are multiple state and federal funding opportunities that could be utilized to deploy faster, better broadband. You can find a full listing of federal funding programs here **https://www.nga.org/broadband/#funding**

Sorting through the myriad of funding options can be challenging, and will most likely require additional, professional assistance including legal opinions (county or city attorney or outside counsel) . There are roughly 30 such programs listed at the link above. For the purposes of this program, we are going to focus on three key funding programs that you should become aware of / familiar with.

Empower Rural Iowa Broadband Grants Program:

It is anticipated that the State of Iowa will likely launch additional broadband Notice of Funding Availability (NOFA) in a manner materially similar to previous programs. These NOFAs are issued to service providers to establish or improve broadband offerings in specific areas around the state. More information on the most recent Iowa Grant Funding Opportunity can be found here **http://ocic.iowa.gov/empower-rural-iowa-broadband-grant-program-notice-funding-availability-006**. It is good idea for all communities to familiarize themselves with the basic components of the NOFA even if they will not be the direct applicant. Each NOFA outlines in detail program definitions and rules. Gaining a working knowledge of these rules can be integral in establishing certain elements of your strategy. OCIO in the past has offered a number of ways your applicants and interested parties to become familiar with NOFA requirements. The Rural Digital Opportunity Fund (RDOF) is a Federal Communications Commission program designed to close the digital divide in the United States by investing billions of dollars in the construction of rural broadband networks. The budget allocated for this funding initiative amounts to $20.4 billion, which will be awarded over a 10-year period to winning providers after the auction process is complete. More information on RDOF can be found here **https://broadbandnow.com/report/rural-digital-opportunity-fund/**

The American Rescue Plan Act of 2021 (ARPA):

Signed into law on March 11, 2021, The American Rescue Plan Act of 2021 ("ARPA") provides $350 billion in additional funding for state and local governments. The state funding portion is approximately $195 billion with $25.5 billion distributed equally among the 50 states and the District of Columbia and the remaining amount distributed according to a formula based on unemployment. The local funding portion is approximately $130 billion, equally divided between cities and counties. Localities will receive the funds in two tranches–the first after the U.S. Treasury certifies the proceeds to each jurisdiction and the second one year later.

Final ARPA rules have not been released, but the preliminary guidance allows for ARPA funds to be used for "broadband infrastructure projects" (which has not been definitively defined). Projects do not need pre-approval, and non-profit and private organizations may receive funds from the NEUs (i.e. cities or counties).

The interim rules for ARPA encourage broadband projects to consider the following per the Department of the Treasury:

- The construction and deployment of broadband infrastructure projects are eligible for funding if the infrastructure is designed to deliver, upon project completion, service that reliably **meets or exceeds symmetrical download and upload speeds of 100 Mbps.**
- Treasury encourages recipients to focus on projects that will achieve **last-mile connections.**
- Recipients are encouraged to prioritize **investments in fiber-optic infrastructure** where feasible.
- Treasury encourages recipients to prioritize projects that involve broadband **networks owned, operated by or affiliated with local governments, non-profits, and co-operatives.**
- Recipients are encouraged to **address affordability as a barrier to full use of the internet** when developing their plans.
- Recipients are also encouraged to **consult with the community** as part of the process they undertake to consider affordability.
- Recipients are encouraged to require that services provided by a project **include at least one low-cost option** offered at speeds that are sufficient for a household with multiple users to simultaneously telework and engage in remote learning.
- Recipients will be required to **report pricing data** as part of program performance and monitoring.
- Recipients are also required to ensure that the service provider **participate in federal programs that provide low-income consumers with subsidies** on broadband internet access services.

National Telecommunications and Information Administration (NTIA) Grants:

NTIA manages three broadband grant programs funded by the Consolidated Appropriations Act, 2021. While these programs are currently closed, it is anticipated that another round of broadband funding will become available. Future NTIA broadband grant information will be posted here: **https://www.ntia.doc.gov/category/broadband**

OCIO Office of the Chief Information Officer

Broadband TOGETHER™

FG to Help Local Governments Develop Broadband Strategies through New OCIO Program

Successfully funding broadband in your community starts with defining both the project and the service provider. You also need an actionable roadmap. Through a new program created by the State of Iowa Office of the Chief Information Officer (OCIO), your community can advance its broadband goals.

The OCIO is partnering with FG (Fiberutilities Group), an Iowa-based network services company, to bring the Broadband Together™ program to Iowa cities and counties. Through August 2023, FG will provide strategic broadband consulting services to help your community formulate a broadband strategy. While these consultative services are available at no cost, you may have to pay fees for your actionable roadmap should you engage other entities.

FG is available to your community:

- as an educational resource to better understand broadband.
- to provide opportunities to enhance or expand broadband alternatives.
- to coordinate various broadband-related resources; or
- to work with your selected service provider to explore broadband options.

Together with FG, you can create your community's unique broadband strategy by following eight steps.

Overview of the Broadband Together™ Program

Step 1: Broadband Goals and Definitions

Clarify what attributes broadband could have in your community. This formal definition becomes the "true north" that helps frame all subsequent discussions.

Step 2: Broadband Delivery Methodology

Explore the pros and cons of broadband delivery structures, including public-private partnerships.

Step 3: Basic Broadband Data

Quantify the existing broadband products and the providers per the Iowa broadband map. Perform a basic internet profile of service providers along with a basic user survey to identify gaps.

Step 4: Broadband Currency

Help identify and catalog any noncash currency your community could provide to support the delivery of new broadband services and facilitate usage.

Step 5: Broadband Adoption Initiatives

Explore options to build support, increase constituent understanding, and generate greater demand for broadband in your community.

Step 6: Project Costing Considerations

Outline "Plan – Build – Operate" components of a broadband project through a costing exercise.

Step 7: Project Funding Alternatives

Leverage the information gathered in the previous steps and review options for integrating funding alternatives into your broadband approach.

Step 8: Broadband Strategy Document

Create a strategy document that defines your community's direction for future action. This final step is a well-defined starting line for your broadband journey.

Web: ocio.iowa.gov | Email: BroadbandTogether@NetworkBetter.com

FREQUENTLY ASKED QUESTIONS (FAQs)

WHO can benefit from FG's services?

Iowa cities and counties that want to better understand their existing broadband and how they can enhance, improve, or expand local broadband opportunities.

WHY is broadband more critical than ever?

Broadband provides critical infrastructure for economic development, growth, and community sustainability. In the wake of COVID, a new normal has impacted our communities as basic life services, such as work, education, and healthcare, shift to a content-rich, digital-delivery model. The need for broadband has become more essential and more urgent as cities and counties adapt to the realities of a global pandemic and the availability of government program funding.

WHAT benefits will I receive in the Broadband Together program?

FG offers consultation and expertise in key areas of broadband strategy development:

- Strategic consulting and advising
- Broadband planning approaches
- Guidance related to the definition and delivery of broadband
- Broadband terminology and capabilities
- Insights on the economics of broadband
- Methods and considerations for roadmap development
- Understanding the current local broadband landscape
- Options related to evaluation and/or assessments
- Possible paths to achieve desired outcomes
- Possible funding alternatives

FG will advise and consult, at no additional cost, to help your community formulate your broadband strategy. Your roadmap, however, may require additional fee-based services from other parties. As a neutral party, FG can connect you with additional resources, such as:

- Local, regional, or state contacts
- Stakeholder engagement services
- Third-party vendors or partners
- Potential funding sources, if appropriate
- Broadband project management

HOW do I engage FG?

Contact the OCIO at (515) 281-5503 or email FG at BroadbandTogether@NetworkBetter.com

OCIO Office of the Chief Information Officer

ocio.iowa.gov

Office of the Chief Information Officer
200 E. Grand Ave.
Des Moines, IA 50309
Phone: (515) 281-5503

FG Network Better.

BroadbandTogether@NetworkBetter.com

FG does not represent or partner with any specific technology services, service providers, or hardware vendors, nor do we engage in legislative issues or lobby for state or federal broadband rules or funding. We are an agnostic consulting firm specializing in broadband strategy.

About FG

FG, formerly known as Fiberutilities Group, is an Iowa-based network services company that provides unmatched and unbiased industry expertise. FG offers a full spectrum of network services to help government, healthcare, and business network better.

As an agnostic consulting firm specializing in broadband strategy, FG does not represent or partner with any specific technology services, service providers, or hardware vendors, nor engage in legislative issues or lobby for state or federal broadband rules or funding.

Appendix B


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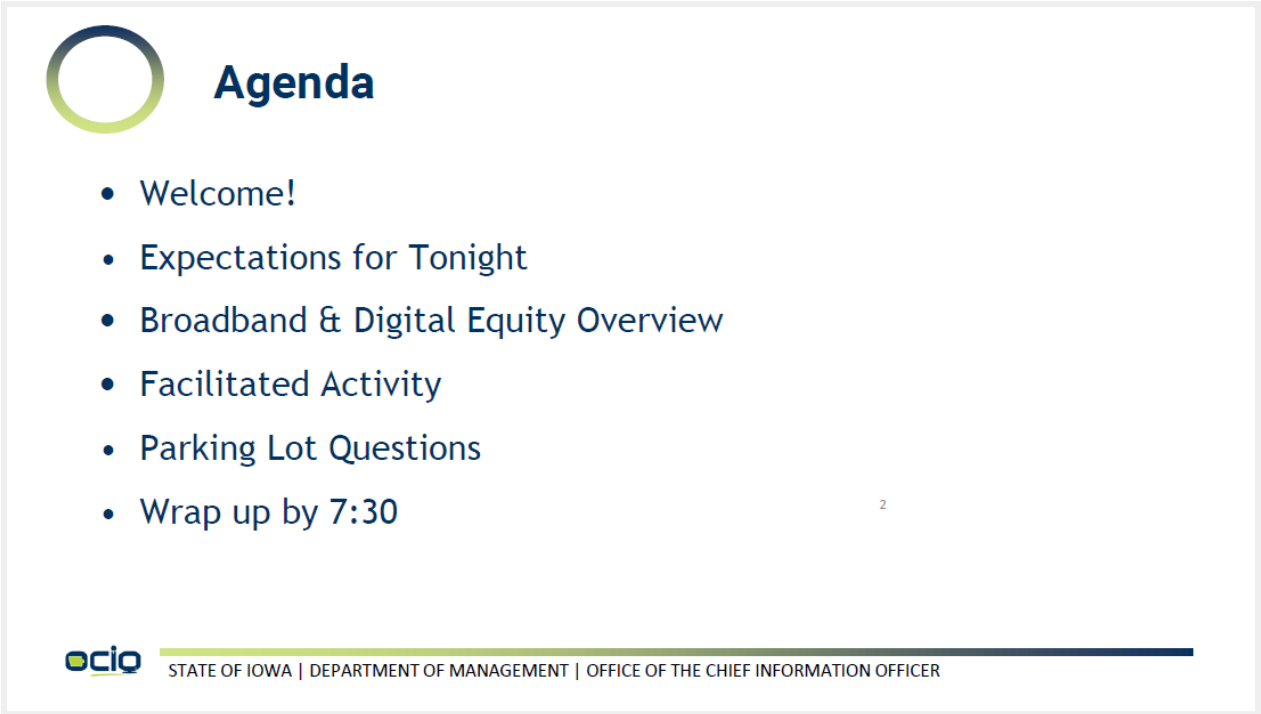
Office of the
Chief Information Officer
Iowa Department of Management
Broadband & Digital Equity
Davenport
AUTHOR/PRESENTER: Jeff Berckes / Jess Flaherty / Greg Loebe
DATE: March 14, 2023


Agenda
Welcome!
Expectations for Tonight
Broadband & Digital Equity Overview
Facilitated Activity
Parking Lot Questions
Wrap up by 7:30
2
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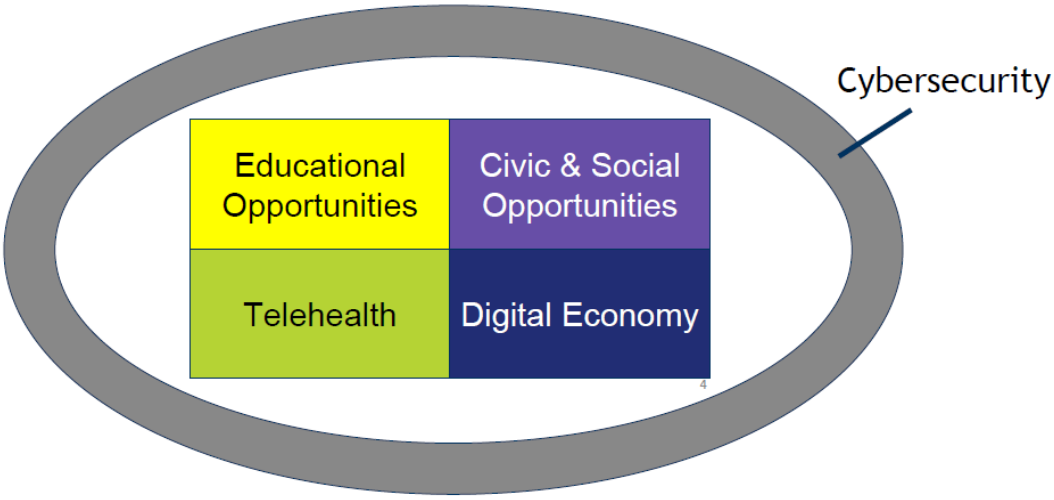
Expectations

- Share your thoughts honestly
- Listen to others respectfully
- Be curious and ask questions!

Full Participation in Society



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Facets of Broadband & Digital Equity

Accessibility

5

Broadband - Empower Rural Iowa Grants

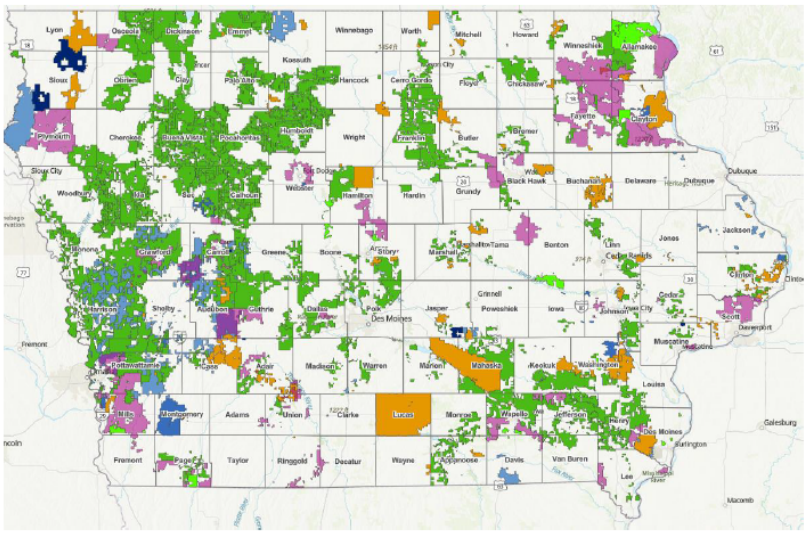
- 7 rounds of grants
- Over $350M awards to 270 projects
- Totals over $790M new broadband investment (private + public funds)
- Over 100K homes, schools, & businesses served in all 99 counties
- New federal opportunities on the way
  - ARPA Capital Projects Fund (2023) - $152 million
  - IIJA/BIL Broadband, Equity, Access, and Deployment - $300 - $400 million (est)
  - IIJA/BIL Digital Equity Act - $10 - $20 million (est)

Broadband - Award Locations

Iowa Broadband Grant Awards Project Areas

NOFA

- NOFA 001
- NOFA 002
- NOFA 003
- NOFA 004
- NOFA 005
- NOFA 006
- NOFA 007



The locations highlighted show where prior funds were distributed by DOM-OCIO under each Notice of Funding Availability (NOFA).

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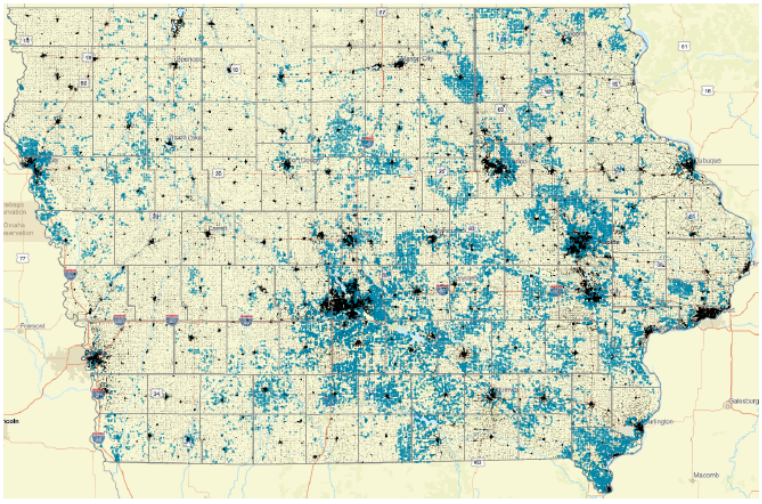
Overview - Broadband Mapping

- In 2023, DOM-OCIO finalized the statewide broadband map.
- The map is based on structure locations, not census blocks.
- Every blue dot shows a structure that does not currently have 100 mbps download / 20 mbps upload or faster service (the new federal benchmark).
- The blue dots are the areas to be eligible under the next funding round.
  - 57,539 eligible locations
- Clusters of black dots reflect higher density areas. Zooming in further on the map generally shows that those areas are already served.



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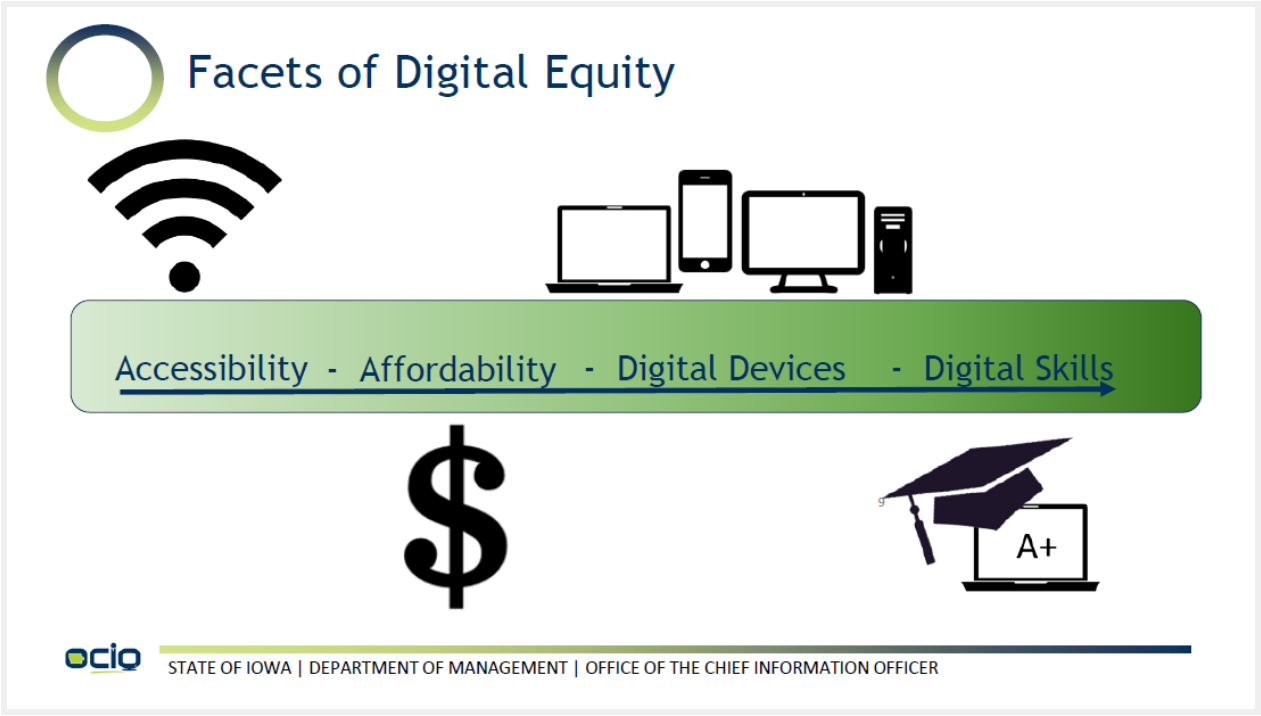
Facets of Digital Equity
Accessibility - Affordability - Digital Devices - Digital Skills
A+
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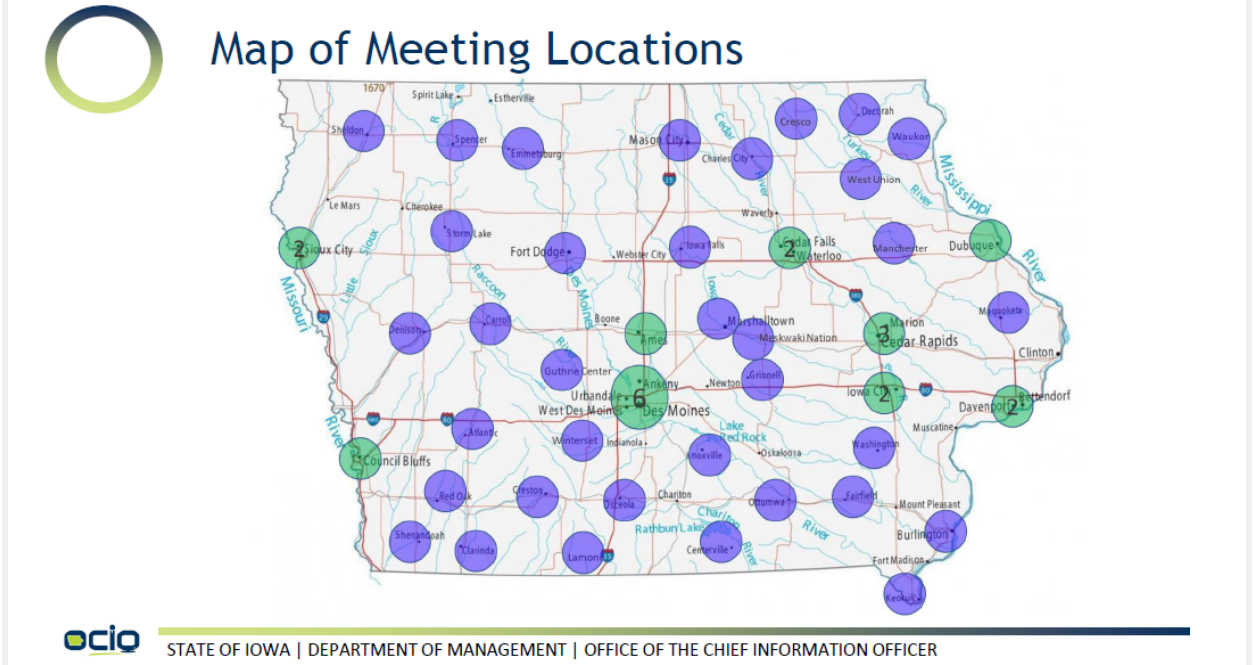
Map of Meeting Locations
Sioux City
Fort Dodge
Cedar Falls Waterloo
Cedar Rapids
Des Moines
Council Bluffs
Burlington
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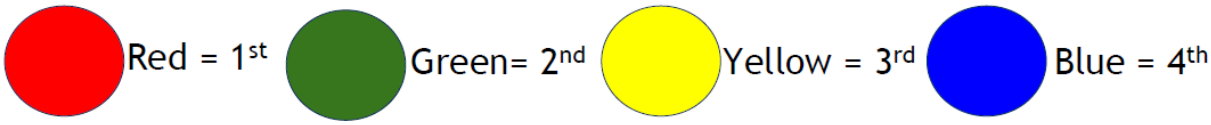

Accessibility

$ Affordability

Digital Devices

Digital Skills

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Breakout Groups

- Pick a Recorder
- Pick a Reporter
- Discuss & Answer the questions on the sheet

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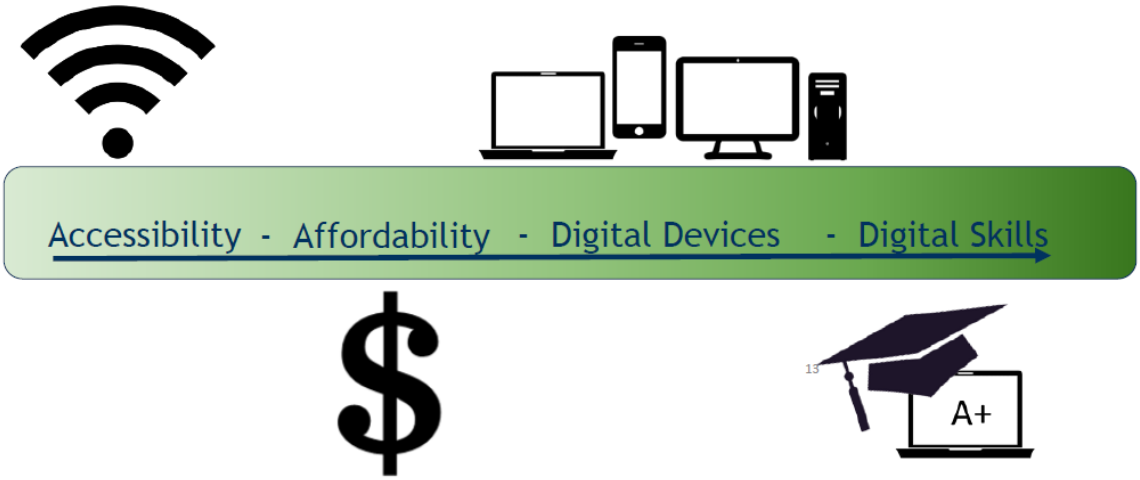
Facets of Digital Equity



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Report back!

1. Accessibility
2. Affordability
3. Digital Devices
4. Digital Skills

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Thank you!

Please hand in your survey sheet before you leave!

Any follow up questions, please send to:

broadband@iowa.gov

Covered Populations

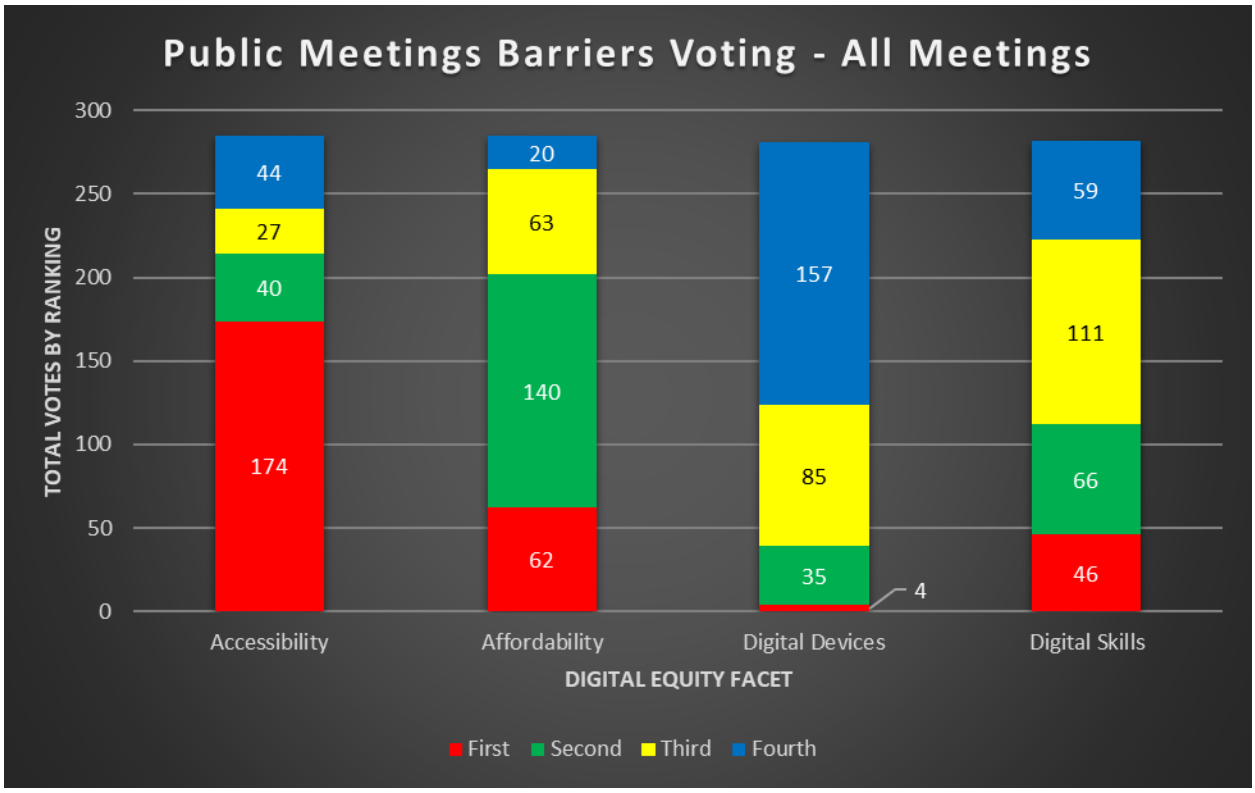
1. Individuals who live in covered households
2. Aging individuals
3. Incarcerated individuals
4. Veterans
5. Individuals with disabilities
6. Individuals with a language barrier
7. Individuals who are members of a racial or ethnic minority
8. Individuals who primarily reside in rural areas

80%

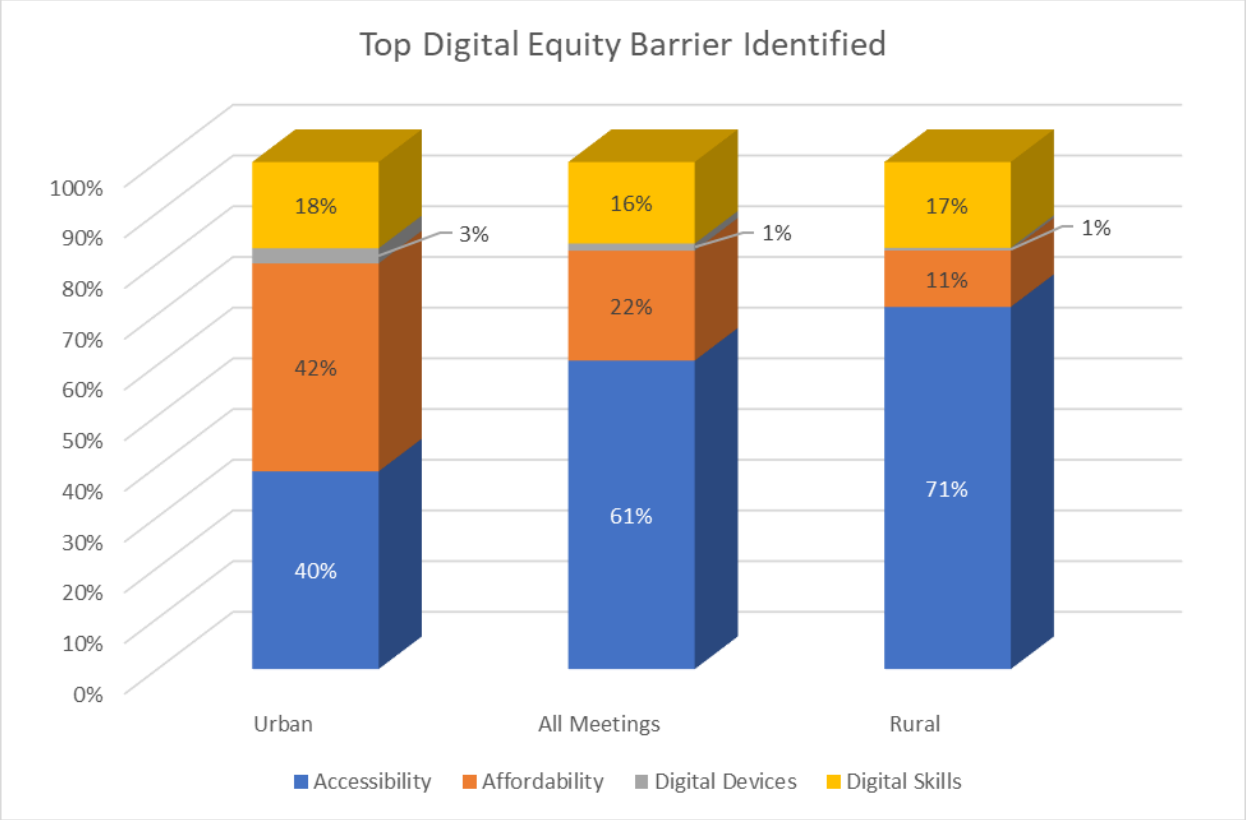
16

Broadband Outreach Meeting Summary

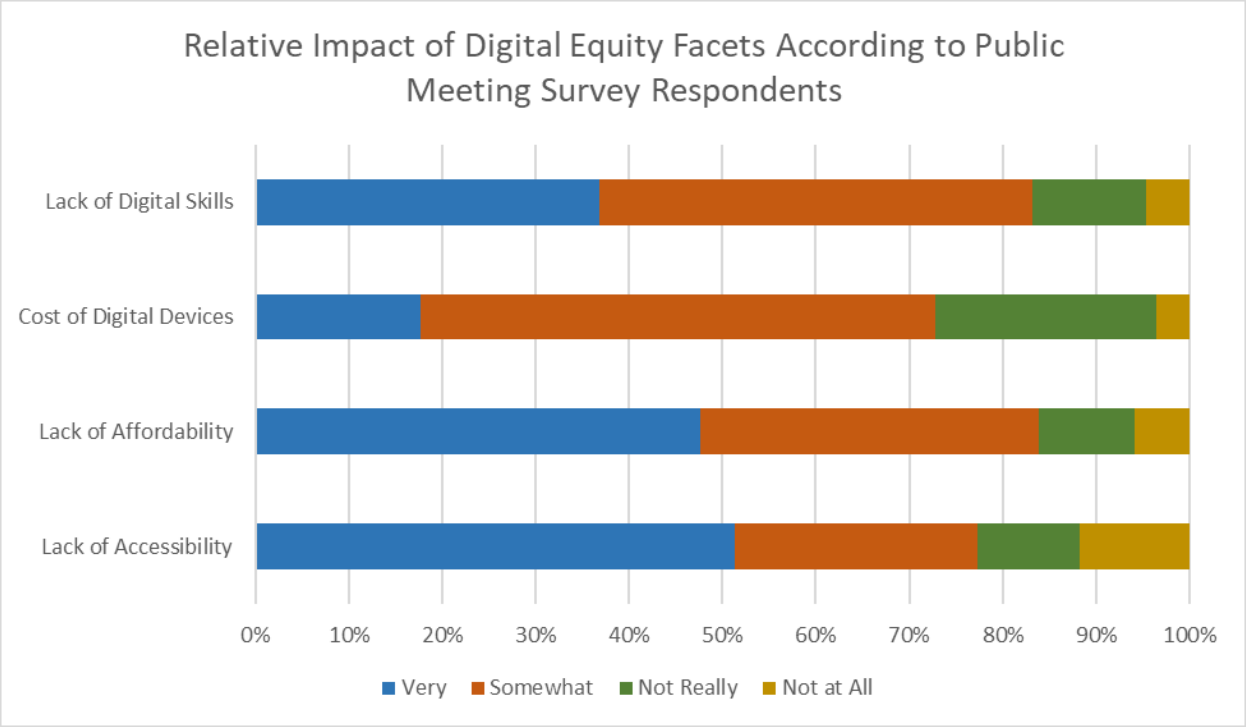
Major Themes: Accessibility easily paced the group as the biggest barrier to achieving full participation in society among participants with 174 first place (red) votes in the ranking activity. Affordability and Digital Skills claimed 62 and 46 first place votes respectively, with Digital Devices garnering only 4. The Affordability facet scored a strong second place among meeting participants as to the perceived barriers faced by members of their community overall when considering first- and second-place votes.



Taking a look at just the top barrier identified by public meeting participants, the figure below shows the influence of the rural meeting location results on the overall percentages. The urban meeting locations resulted in a close split between Accessibility and Affordability while the rural meeting locations pulled the overall results for Accessibility up with a strong showing. Digital Skills and Digital Devices returned essentially the same percentage results across both urban and rural locations with respect to participant's number one barrier vote. Important to note that this figure uses a percentage of votes as opposed to raw total to show the differences in voting easily by segment height.

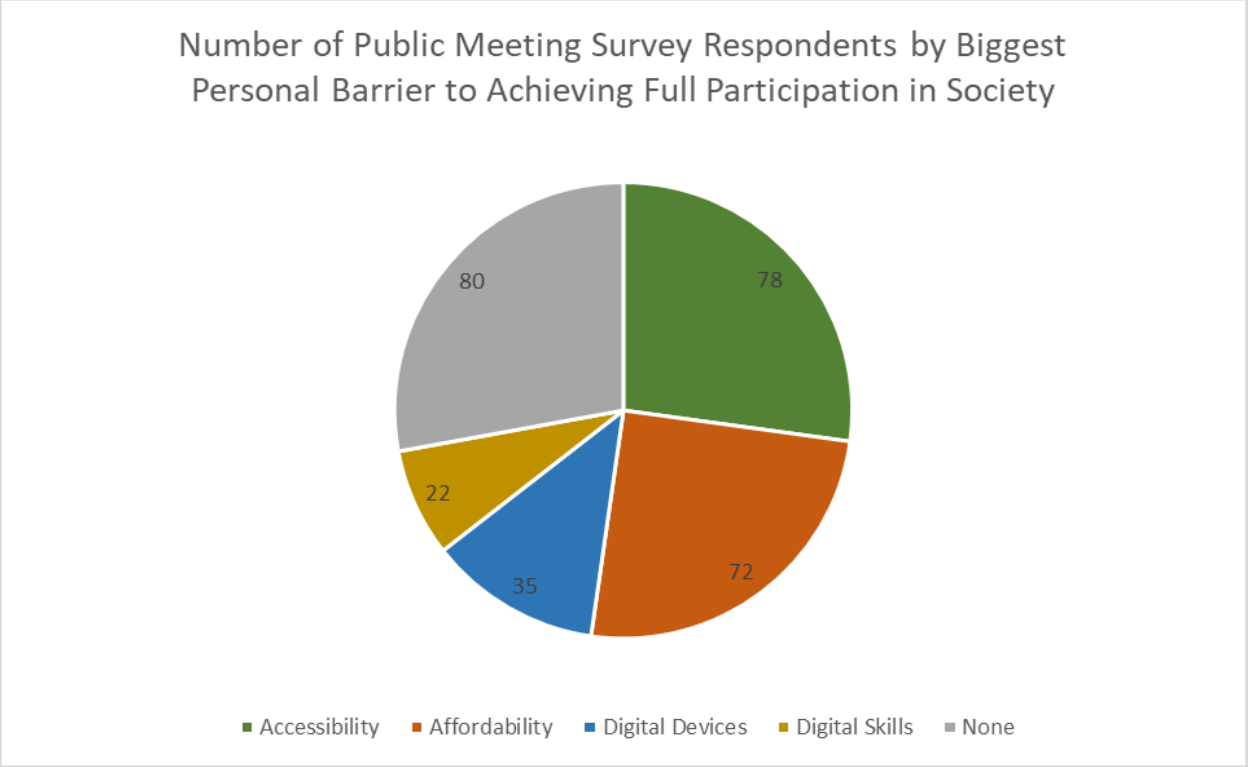


The exit survey administered by the OCIO at the end of meetings provided additional interesting information. When evaluating each individual facet of digital equity, all four facets received a “very” or “somewhat” important vote as impacting their community. Taken together, the majority of respondents agree that all of these issues play a role that needs to be addressed.



The final figure below asked "*Which of these barriers to broadband and digital services is the biggest problem for **your household**?"* Important to note that the survey provided "none" as one of the checkbox options, which narrowly earned the most votes. This figure may help speak to the motivations behind why individuals may have chosen to attend a public meeting on broadband and digital equity. While a plurality voted "none," their motivations for attendance may be professional (work at an internet service provider, for example) or as part of community engagement. Interestingly, a little over a quarter of respondents identified Accessibility as their biggest personal barrier whereas the dot voting resulted in a much stronger showing as a barrier for the community (61%).

One of the most surprising results from this question was Digital Devices, the category least voted on during the dot voting exercise, earning a significant share of votes when respondents thought about this issue personally. This result reinforces the importance of this digital equity facet, even if it didn't score as highly in the group context.



Remaining elements of the project: Results from the public meeting tour will be used in the BEAD and Digital Equity plans as part of the public engagement process. Anecdotes from attendees will help provide color to the reports, supplying lived-experiences to help understand the realities faced by Iowans.

Total Attendance for all 55 Meetings: 284

City	Date	#	City	Date	#	City	Date	#
Ames	4/25	9	Des Moines (Downtown)	3/16	5	Meskwaki Nation	5/9	5
Ankeny	3/23	5	Des Moines (South)	3/30	0	Osceola	4/18	2
Atlantic	4/11	4	Des Moines (East)	4/17	1	Ottumwa	3/30	2

Bettendorf	3/21	3	Dubuque	4/18	5	Red Oak	4/10	7
Burlington	4/6	3	Emmetsburg	4/25	3	Sheldon	4/24	3
Carroll	5/9	5	Fairfield	4/3	2	Shenandoah	5/11	4
Cedar Falls	4/6	3	Fort Dodge	5/2	5	Sioux City (East)	3/27	4
Cedar Rapids (South)	3/15	7	Grinnell	5/15	6	Sioux City (Downtown)	3/28	2
Cedar Rapids (Public Library)	4/11	6	Guthrie Center	5/10	1	Spencer	4/27	6
Centerville	4/20	13	Iowa City	4/12	6	Storm Lake	4/24	4
Charles City	5/3	13	Iowa Falls	5/16	2	Urbandale	4/10	11
Clarinda	4/3	7	Keokuk	4/5	3	Washington	4/13	7
Coralville	3/29	6	Knoxville	3/27	10	Waterloo	4/19	5
Council Bluffs	3/22	8	Lamoni	3/28	15	Waukon	5/23	5
Cresco	5/17	3	Manchester	5/22	8	West Des Moines	4/24	4
Creston	4/12	2	Maquoketa	4/20	6	West Union	5/24	7

Davenport	3/14	2	Marion	4/5	5	Winterset	3/29	7
Decorah	5/18	13	Marshalltown	5/25	1			
Denison	5/8	4	Mason City	5/4	6			