BroadbandOhio

DRAFT-Ohio Broadband Strategy

2023

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Letter from Mike DeWine

Since the beginning of the DeWine-Husted administration, ensuring that all Ohioans have access to affordable high-speed internet has been a priority. Our experience during the pandemic only confirmed what many already knew: access to high-speed internet is critical to our lives and livelihoods. It enables education, healthcare, access to essential government services and jobs, and full participation in the modern economy. As we continue Ohio's long tradition of leadership in technological innovation, high-speed internet access is a fundamental driver of our state's economic growth and prosperity.

Our 2019 Broadband Strategy defined eight key pillars to guide our investment and action, and we have made significant progress on almost all of them. In 2020, we stood up the BroadbandOhio Office with the Department of Development. In 2021, we launched the Ohio Residential Broadband Expansion Grant program and seeded the program with some $250 million — one of the largest state investments in the nation. The private sector matched that investment. We also took steps toward achieving our telehealth goals by launching two pilot projects to provide on-demand access to telehealth services for 22,000 students across 16 school districts.

Our 2023 Broadband Strategy builds on and accelerates that work. We will use federal and state funding to provide high-speed internet access and digital opportunities for all Ohioans. We will prioritize investment in initiatives that help residents in rural and urban parts of the state improve their quality of life and benefit from access to the modern economy.

Our goal is to ensure that all Ohioans have meaningful opportunities to leverage high-speed internet to connect with the world and engage in the modern economy. Together, we can close the digital divide and make this vision a reality.

DRAFT

Letter from Jon Husted

Every Ohioan needs high-speed internet access to participate fully in education, take advantage of flexible work-from-home opportunities, and engage fully in the modern economy. The internet also provides critical support for people suffering from behavioral health or addiction issues as online telemedicine can connect people to services they might not otherwise be able to access.

In 2019, Governor DeWine and I developed a broadband strategy laying out a path to ensure that all Ohioans have access to high-speed internet that enables participation in the modern, digital economy. We recognized that the high cost of building infrastructure in many parts of our state is a major barrier to broadband expansion. The pandemic only exacerbated the urgency of bringing high-speed internet access to all Ohioans.

We have made significant progress on expanding internet access for Ohioans. The state has invested about $250 million, and the private sector has matched that investment. The Ohio Academic Resources network (OARnet) is working with the private sector to create a middle-mile fiber-optic network that will bring internet access to homes from Appalachia to the southern tip of Ohio. And our Office of Workforce Transformation is building the skilled workforce needed for this effort, as the unprecedented investment in broadband is creating jobs faster than the industry can fill them.

We now have an unprecedented opportunity to tap federal funding to get the job done. So we have revised our 2019 Broadband Strategy to capitalize on the significant progress made to date. We are working diligently to ensure that Ohio receives a fair share of federal funding to bring high-speed internet to the people who need it most, making it both available and affordable for all.

With these investments in internet access, we look forward to the additional opportunities this access will bring to every Ohioan as we seek to build on our history of innovation and create an even more prosperous Ohio.

DRAFT

Letter from Lydia Mihalik

Broadband is an essential service. Without access to reliable internet, Ohioans face a significant barrier to conducting everyday tasks, including working from home, connecting with loved ones, and learning online, and to participating in many of the innovative economic development opportunities created by the digital economy.

We are committed to closing the digital gap and delivering community-based broadband solutions to help people reach their full potential. We have already made significant investments in reaching this goal. We have awarded grants totaling some $250 million that will deliver internet access to 43,000 households. Matched funding by internet providers will expand access to 52,000 more households. We have helped bring WiFi to businesses, partnered with area recreation centers in Dayton, and funded telehealth for thousands of students in the Appalachian region. And through the newly established Regional Digital Inclusion Alliances (RDIAs) that will champion digital opportunities at a grassroots level, we will innovate and scale impactful programs that enable Ohioans to reach their goals.

This broadband strategy sets the vision and outlines the key priorities we've heard from Ohioans. Only by working together can we achieve the fully connected, digitally enabled future, where all Ohioans can compete in the digital economy.

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Introduction

The Ohio economy ranks #7 in the US[1] and #24 in the world.[2] Thanks to the hard work and innovation of Ohioans, we stand on the precipice of the next phase of growth.

Innovation has a long and deep history in our state. The Wright brothers flew the world's first successful airplane. Thomas Edison secured more patents than any other American. Twenty-five astronauts are Ohio natives; they have completed three trips to the moon, among numerous other space flights. Ohio has also led innovation in bringing high-speed internet access to our K-12 schools, higher education institutions, and local governments by creating a nationally recognized statewide infrastructure called OARnet to deliver ultra-fast fiber-optic connectivity.

The strength of our economy and the skills and ingenuity of our workforce attract top American companies. For example, Intel will invest more than $20 billion to build two factories and establish a new epicenter for advanced chipmaking in Ohio.[3] Ford has announced plans to invest $1.5 billion and create 1,800 jobs in Avon Lake to assemble an all-new electric commercial vehicle for Ford Pro customers (debuting mid-decade), plus plans to invest $100 million and create 90 jobs in the Lima Engine and Sharonville transmission plants.[4] The Cleveland Clinic has announced a $1.3 billion capital investment that will create 2,000 jobs at a new one-million-square-foot Neurological Institute and expand the Cole Eye Institute and the research facilities of the Cleveland Innovation District.[5]

To capitalize on these investments and realize their potential for innovation, all Ohioans must be connected to the modern economy through affordable high-speed internet. Otherwise, they face a competitive disadvantage in today's technology-infused, global economy. And, as the pandemic demonstrated, without high-speed internet at home, children cannot complete homework, and adults cannot access the full range of job and upskilling opportunities.

Internet access is the gateway to this technology-charged economy. More and more jobs require digital skills, and internet access opens the door to reskilling, upskilling, and working remotely, regardless of zip code. Internet access creates opportunities for business creation, expansion, and growth statewide. Key Ohio industries stand to benefit from applications like digital agriculture and smart transportation enabled by high-speed internet.

Internet access is also the way that people connect with their communities and the world. The internet connects people with loved ones; this connectivity can be especially important for older Americans. Today, many people use multiple internet channels (e.g., social media, email, and video calling) to stay connected with family, friends, and the world.

The 2023 Ohio Broadband Strategy lays out the vision and the pillars of our approach to ensuring that all Ohioans have access to affordable high-speed internet and the digital opportunities to participate in the modern economy and the world.

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[1] GDP by State, World Population Review, 2020

[2] GDP Ranked by Country, World Population Review, 2020

[3] Intel Announces Next US Site with Landmark Investment in Ohio, Intel newsroom, 2022

[4] Corporate Investments Continue to Pour into Ohio, JobsOhio, 2022

[5] Ibid

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Progress to date

The 2019 Broadband Strategy defined the state's approach to bringing broadband to all Ohioans and promoting a best-in-class network. Below we summarize the progress we have made toward achieving these goals.

2019 strategic pillar	Goal	Progress to date
Telehealth	Launch a telehealth pilot to provide mental health services to unserved and underserved areas of the state by increasing high-speed connectivity in these areas	Launched two telehealth pilots: • Switzerland of Ohio School District Broadband Telehealth Pilot Project provides on-demand counseling for 2,000 students via live video connection to mental health professionals • Muskingum Valley Educational Service Center Telehealth Project connects almost 20,000 students across 15 school districts with telehealth services Selected Oregon Community Health Information Network (OCHIN)[6] as the statewide telehealth administrator tasked with expanding healthcare services for K-12 students[7]
Statewide grant program	Work with the Ohio General Assembly to implement a statewide grant program that will help bring high-speed internet access to unserved and underserved areas in Ohio	Established the Ohio Residential Broadband Expansion Grant (ORBEG) Program and awarded $232 million for grants, in addition to $243 million match provided by internet service providers, for development of broadband projects that will benefit 43,000 households in unserved and underserved areas of the state[8]
Regulatory reform	Create an online Ohio Department of Transportation (ODOT) permitting process and use the Common Sense Initiative (CSI) to assess the regulatory environment for high-speed internet	Created the online ODOT permitting process to replace paper applications and manage right of way and utility permits centrally CSI has reviewed over 9,100 state agency regulations and has identified 50 percent of those regulations as potential obstacles to Ohio businesses. All have been amended or rescinded[9]
Economic development and entrepreneur-ship	Work with JobsOhio to identify pilot projects throughout the state, applying existing economic development tools to encourage investments in innovative technologies that can reach new customers and identify assets that expand the reach of high-speed internet, such as towers	Planned, implemented, and administers the pilot of the Multi-Agency Radio Communication System (MARCS) to expand broadband using MARCS towers located in Scioto and Jackson counties JobsOhio partnered with Agile Network Builders LLC to create Digital Access Ohio to expand high-speed internet access in underserved areas by building, owning, and operating 75 fiber-backed broadband towers in southeast Ohio over the next five years[10] Partnered with Starlink on a pilot that will bring satellite broadband to 90 households and 10 small businesses[11]
Digital literacy	Work with providers to develop digital literacy	Library systems

[6] OCHIN is a nonprofit healthcare innovation center designed to provide knowledge solutions that promote quality, affordable healthcare for all

[7] BroadbandOhio Announces Selection of State Telehealth Administrator to Expand Services to Ohio's K-12 students, BroadbandOhio, 2023

[8] Ohio Residential Broadband Expansion Grant Program, BroadbandOhio

[9] Common Sense Initiative, Governor of Ohio

[10] Digital Access Ohio, JobsOhio

[11] Starlink, BroadbandOhio

	programs that take full advantage of expanded internet access	• The Champaign County library system funded a trainer to visit libraries for one-on-one sessions with library users • All Columbus Metropolitan Library (CML) locations provide free WiFi, internet access, technology training classes, job assistance, and homework help centers equipped with computers for students • More than 200 libraries, community colleges, and educational centers throughout the state partner with Connect Ohio to offer free basic computer and broadband training to Ohio adults Revamped OhioMeansJobs, a free, online career counseling center that offers digital skills tutorials for job seekers PCs for People offers eligible customers free digital skills training classes and workshops one-on-one, in-person or online, with additional one-on-one support available through the Digital Education Call Center Created the Finder Tool, that connects Ohioans with resources from digital literacy to free public WiFi
Ohio's interstate system and rights of way	Develop a statewide policy to allow access to limited-access rights of way for fiber or other internet providers and employ the most up-to-date technologies in Ohio's intelligent transportation system	Launched an e-permitting system for right-of-way access that aims to be more convenient for permit requesters; especially by saving time when requesting to install broadband fiber-optic cable Several smart projects are testing autonomous and connected vehicle technologies in the real world. • Smart Operating System is a $15.9 million program that visualizes real-time mobility data for Columbus, with 60,000 users and a 70 percent satisfaction rating.[12] • Smart Mobility Hubs represents a $1.3 million investment in digital kiosks placed in six key locations to provide free WiFi and access to an app that brings transportation options together[13]
Office of Broadband	Identify a state agency in the executive branch to house a state broadband office	Established the office of BroadbandOhio in March 2020 to bring high-speed internet to every Ohioan. Housed in the Department of Development, BroadbandOhio works with local governments and private industry to expand access to regions of the state that lack basic connectivity. BroadbandOhio created channels of communication with other state agencies, local government, and external stakeholders, including the Broadband Alliance and the Broadband Working Group, to identify broadband needs across the state Commissioned the Broadband and Workforce Strategy to evaluate the broadband and 5G workforce, identify gaps in supply, and propose strategies to close the gaps so that we can build the network of the future envisioned in the Broadband Strategy[14]
US Department of Agriculture (USDA) Reconnect	Develop a statewide internet plan to make Ohio more competitive for federal dollars and make full points available to ReConnect applicants in Ohio	Ohio's broadband strategy is available to providers to increase the competitiveness of ReConnect grant applications

[12] Our Path to the Future, SmartColumbus

[13] Ibid

[14] Strengthening Ohio's Broadband and 5G Workforce, Governor's Office of Workforce Transformation and BroadbandOhio

Vision

BroadbandOhio has set four strategic priorities, supported by 11 pillars that will guide our investment and action, as summarized below.

Priority 1: Bring reliable, affordable high-speed internet to every Ohioan, in their homes and communities

Invest in last-mile infrastructure deployment: Bring reliable, affordable high-speed internet to all Ohioans via a competitive grant process

Expand the middle-mile network to facilitate last-mile deployment: Extend the reach and accessibility of middle-mile networks, including Ohio's OARnet, to facilitate last-mile deployment, increase competition, and improve affordability

Remove barriers to deployment and maximize asset reuse: Reduce cost barriers and streamline permitting processes (e.g., railroad crossing) and leverage existing state and local assets to support infrastructure deployment

Priority 2: Promote the creation of world-class broadband networks throughout the state, via the use of best-in-class technologies

Keep pace with changing technology and demand: Ensure that Ohio's broadband infrastructure always meets the highest standards of reliability and scalability by making efficient upgrades and upholding standards in grants and permitting processes

Connect community anchor institutions (CAIs) to serve as digital hubs: Empower CAIs as local hubs for connectivity, digital inclusion, and innovation by providing access to at least 1 Gigabit of symmetrical service

Priority 3: Enable participation in the modern economy

Expand telehealth access and usage via targeted programming: Launch targeted initiatives, including further linking Ohio's health systems to schools and expanding current programing to additional health priorities

Expand access to remote education opportunities: Ensure that all students and teachers have access to reliable internet and internet-capable devices so they can access digital learning at home and school

Support Ohio's farmers to improve productivity by enabling digital agriculture uptake: Identify priority use cases, strategic partnerships, and expanded broadband access

Enable safe and easy movement of people and goods via foundational investments to enable intelligent transportation systems: Ensure robust highway broadband access to support the deployment of smart corridors across Ohio, in partnership with the Department of Transportation

Priority 4: Empower Ohioans through training, device access, and digital skills

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Support workforce development initiatives that connect Ohioans to broadband deployment and digital jobs: Partner with universities and workforce development organizations to build the broadband network, upskill workers for digital jobs, and enable remote work opportunities

Accelerate adoption, usage, and economic empowerment via Regional Digital Inclusion Alliances (RDIAs): Partner with RDIAs to engage local communities in driving digital opportunities by funding programs that promote broadband adoption, device access, and digital skills training.

Bring reliable, affordable high-speed internet to every Ohioan, in their homes and communities

Three strategic pillars will guide Ohio's investment and action to achieve this vision.

Invest in last-mile broadband infrastructure deployment

Reaching Ohio's goal of full connectivity will require substantial buildout of reliable last-mile infrastructure. According to the FCC National Broadband Map released in November 2022, approximately 330,000 households and small business locations in Ohio lack access to reliable high-speed internet.[15] This figure includes approximately 188,000 locations (four percent) that lack access to 25/3 Mbps speeds — qualifying them as unserved. Another 144,000 locations (three percent) have access to speeds at or above 25/3 Mbps but less than 100/20 Mbps — qualifying them as underserved.[16]

The challenge is most acute in Ohio's Appalachian counties. In 13 of the 32 Appalachian counties, 30-50 percent of locations qualify as unserved or underserved. While Appalachia accounts for only 20

Definitions

In July 2022, the FCC Chairwoman proposed 100 Mbps download and 20 Mbps upload (100/20 Mbps) as the minimum definition for what qualifies as broadband. And she also set the aim of a separate national goal of 1 Gbps/500 Mbps for the future, with the rationale: "we want everyone everywhere to have a fair shot at 21st-century success."

Embracing this spirit of evolution, Ohio will continue to set our aspirations high, keeping pace with the rate of technological change to ensure that Ohioans have access to best-in-class networks and technology.

Broadband serviceable location (BSL): Any business or residential location in the United States at which fixed broadband internet access service is, or can be, installed (FCC)

Community anchor institution: An entity, such as a school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community- support organization, that facilitates greater use of broadband service by vulnerable populations, including, but not limited to, low-income individuals, unemployed individuals, children, the incarcerated, and aged individuals (FCC USF/ICC Transformation Order)

Group quarters: Places where people live or stay in a group living arrangement that is owned or managed by an organization providing housing and/or services for the residents (US Census Bureau)

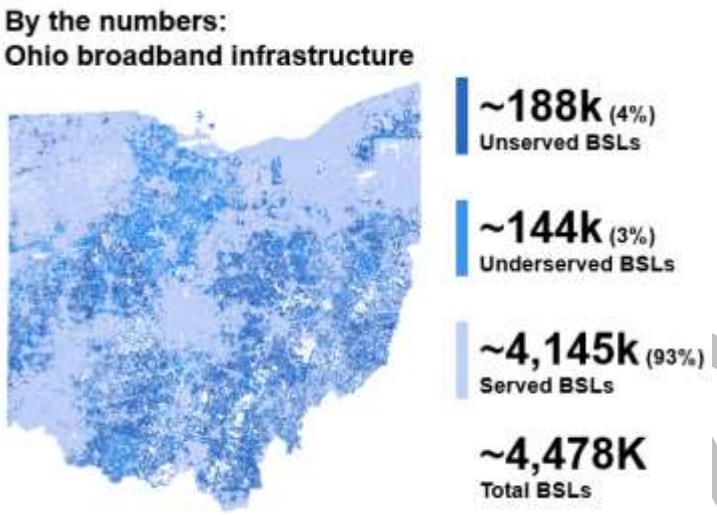
Middle mile: Any broadband infrastructure that does not connect directly to an end-user location, including an anchor institution (NOFO Section I.B.9)

[15] As part of the requirements for the Broadband Equity, Access and Deployment program, the National Telecommunications and Information Administration defines the technologies as capable of providing reliable internet service as fiber, cable, copper, licensed fixed wireless

[16] FCC Service Availability Map, updated January 31, 2023

percent of all broadband serviceable locations (BSLs) in Ohio, it accounts for 61 percent of all unserved locations and 38 percent of underserved BSLs.[17]

The gaps are not only in rural areas, but also in urban areas — especially in apartment buildings and other multi-dwelling units. While new apartment buildings tend to be high-speed-internet-compatible, older buildings often have copper wiring that cannot handle modern internet speeds.



In addition to the buildout of high-speed internet, affordability of subscriptions is a priority. Even in communities where high-speed internet is available, high subscription prices make home internet unaffordable for many Ohioans. Today 85 percent of households lack access to an affordable plan — a plan costing $30/month for reliable broadband that has speeds of at least 25/3 Mbps; 86 percent lack access to a plan costing $30/month that has speeds of at least 100/20 Mbps.[18]

Even in locations where affordable plans are available, cost remains a barrier for many Ohioans. A $10 subscription represents more than one percent of monthly income for six percent of Ohioans and more than two percent of income for 15 percent of Ohioans.[19]

Definitions

Multi-dwelling unit: A residential apartment building, condominium building, or cooperative occupied by multiple tenants (FCC)

Reliable broadband: Broadband service that is shown to provide broadband in the FCC maps using fiber-optic technology; cable modem/ hybrid fiber-coaxial technology; digital subscriber line (DSL) technology; or terrestrial fixed wireless technology, using an entirely licensed spectrum or a hybrid of licensed and unlicensed spectrum

Served location: A BSL that is not an unserved or underserved location and that the Broadband DATA Maps show as having access to Reliable Broadband Service that is offered with a speed of not less than 100 Mbps for downloads and 20 Mbps for uploads and that has sufficient latency to support real-time, interactive applications

Underserved location: A BSL that is not an unserved location and that the Broadband DATA Maps show as lacking access to Reliable Broadband Service that is offered with a speed of not less than 100 Mbps for downloads and 20 Mbps for uploads and that has sufficient latency to support real-time, interactive applications

Unserved location: A BSL that the Broadband DATA Maps show as having no access to broadband service or lacking access to Reliable Broadband Service that is offered with a speed of not less than 25 Mbps for downloads and 3 Mbps for uploads and that has sufficient latency to support real-time, interactive applications

[17] Ibid

[18] Based on FCC National Broadband Map, accessed January 31, 2023

[19] American Communities Survey, US Census Bureau, 2021 (five-year estimates)

Approximately 1,984,000 Ohio households — 41 percent of all Ohio households — are eligible for the federal Affordable Connectivity Program (ACP) that provides a $30/month subscription subsidy for qualifying families. As of April 2023, Ohio led all US states in uptake, with 820,000 Ohio households (41 percent of eligible households) enrolled.[20]

Go-forward approach

We plan to bring reliable, affordable high-speed internet to all Ohioans via a competitive grant process that encourages private sector investment and funds only the broadband funding gap — that is, just enough subsidy to make a competitive business case worth the investment. We will:

Access all available federal broadband funds, including the Bipartisan Infrastructure Law (BIL) Broadband Equity, Access and Deployment program (BEAD) and American Rescue Plan Act Capital Project Funds; and provide any needed supplemental inputs to position Ohio service providers to compete for USDA Reconnect and other federal funds

Execute a competitive grant program open to all providers to stimulate investment, using federal and state funding to bridge the broadband funding gap

Deploy reliable technologies that deliver at least 100/20 Mbps speeds and meet the latency requirements of modern applications

Leverage existing Ohio assets, such as the Multi-Agency Radio Communications System (MARCS) towers and roof access, to deploy last-mile infrastructure efficiently.

We believe these efforts will ensure that all Ohioans have access to reliable broadband with speeds of at least 100/20 Mbps by 2030.

Recent progress

BroadbandOhio has granted $232 million to broadband expansion projects that will make affordable high-speed internet available to 43,000 households across 31 counties in Ohio. As part of the grant process, several providers also committed some $250 million to independently fund 71 other broadband expansion projects serving 52,000 households and affecting 31 more counties.[21]

BroadbandOhio also made MARCS towers available to The Southeast Ohio Broadband Cooperative for a pilot that will provide high-speed internet to hundreds of previously unserved homes. This project also enabled 130 households to maintain coverage after a local ISP stopped providing internet service to the area.[22]

Expand the middle-mile network to facilitate last-mile deployment

Investment in robust, high-capacity middle-mile infrastructure is essential for building resiliency and redundancy into Ohio's high-speed internet networks and reducing the risk of threats and network

[20] Affordable Connectivity Program Enrollment Dashboard, Education Superhighway

[21] Governor DeWine, Lt. Governor Husted Announce New Broadband Expansion Projects, Governor of Ohio

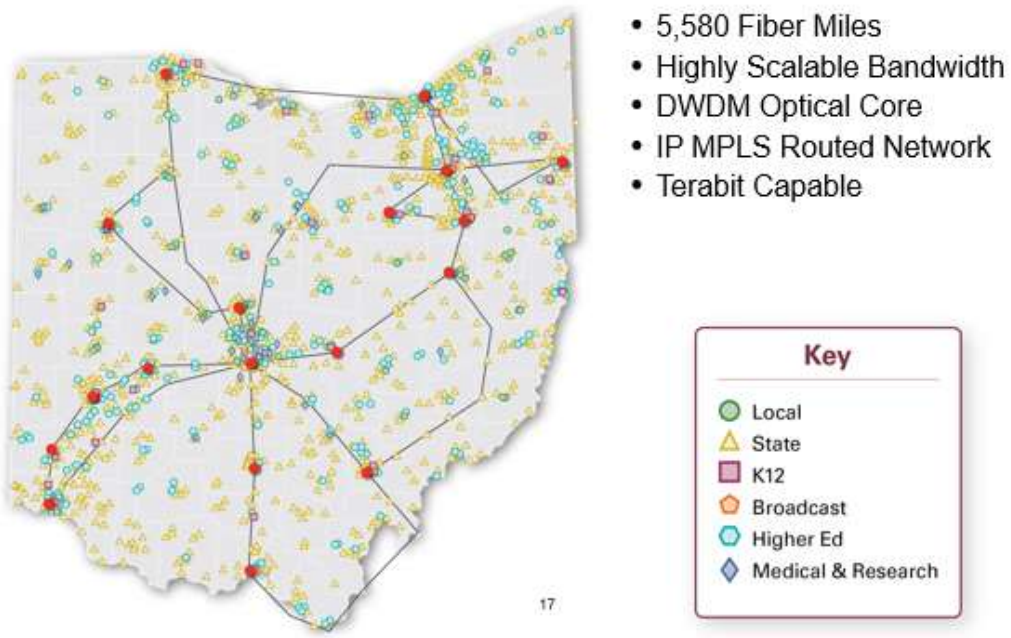
[22] Washington County/MARCS Tower Pilot Project, BroadbandOhio

outages. Competitively priced middle-mile access, especially within ten miles of local communities, can enable service providers to offer affordable broadband to Ohioans.

Ohio has at least ten middle-mile providers today. Middle-mile access is most limited in the Appalachian counties. Middle-mile players include:

- AT&T Incumbent Local Exchange Carriers (ILEC)
- Independents Fiber Network (IFN)
- The Ohio Middle Mile Consortium (OMMC), a public-private partnership among Com Net, Inc., Horizon Telcom, OneCommunity, and OARnet, formed to develop a plan for expanding broadband infrastructure to the underserved and unserved areas of the state
- Digital Access Ohio, a partnership between Agile Networks and Jobs Ohio, formed to build, own, market, and operate up to 75 telecommunication colocation tower sites in rural Ohio
- OARnet, provider of the middle-mile access that connects more than 4,000 CAIs, including Ohio's universities, colleges, K-12 schools, healthcare facilities, and state and local governments to the 100-Gigabit fiber-optic network backbone.[23]

Map of the OARnet middle-mile network



But Ohio needs more middle-mile access to lower last-mile deployment cost, enabling reliable high-speed internet connectivity for all. In order to expand the middle-mile network, we will leverage federal funding (Ohio Middle Mile Plan, Appalachian Regional Initiative for Stronger Economies) and public-private partnerships to extend the middle mile, from Lake Erie toward Cincinnati along the Ohio River, 702 miles across 29 counties. This will expand the reach of middle-mile access through many unserved areas of the state. This investment will also extend the reach of OARnet,

[23] OARnet data

Ohio's research and education network. The middle-mile expansion will create open access, colocation, and aggregation points along the routes so last-mile providers can connect at market rates, while increasing resiliency and redundancy.

In addition, we will make targeted investments to expand the capacity of existing middle-mile networks, where the need is significant. We expect these efforts to:

- Reduce the high cost of last-mile deployment and service
- Extend access to more Ohio CAIs
- Increase network resiliency and redundancy
- Provide more options for non-discriminatory, wholesale middle-mile connectivity that can increase options for residents, especially the 575,000 Ohio households that have only one internet provider option.[24]

Progress to date

OARnet provides connectivity for more than 4,200 government and community institutions via 5,580 miles of fiber-optic cable. OARnet also supports NG-911 services for nine counties, four cities, and one university.

BroadbandOhio has submitted a grant application to the National Telecommunications and Information Association (NTIA) Middle Mile Grant Program to extend the OARnet middle-mile network 702 miles across 29 counties.

The proposed Appalachian Regional Initiative for Stronger Economies (ARISE) grants may help expand broadband infrastructure in Appalachia. Together with Kentucky, Pennsylvania, and West Virginia, Ohio has proposed a study to design a large-scale middle-mile network that would create a multistate ecosystem.

Remove barriers to broadband deployment and maximize asset reuse

To date, Ohio's efforts to reduce barriers to broadband deployment have focused on simplifying permitting and application processes related to broadband infrastructure and use of state assets.

Current regulations cover small cell facilities, e-permitting, and regulatory authority. Ohio Revenue Code 4939.01 et seq. sets the terms for use of public rights-of-way to encourage the deployment of small cell and advanced wireless facilities. A new online system manages right-of-way and utility permits centrally. This system replaced paper MR 505 forms.

Ohio has received suggestions for strengthening efforts to reduce barriers. In previous RFIs, respondents suggested streamlining permitting / grant application processes, simplifying installation processes, increasing industry standardization and leveraging highway rights of way. Other recent feedback has emphasized the need to reduce make-ready and pole attachment costs and streamline the permitting process for key segments (e.g., railroad crossing).

[24] FCC National Broadband Map, accessed January 31, 2023

Ohio has significant assets available to support broadband deployment. OARnet's 100-Gigabit-per-second fiber network is available to hospital systems, private companies engaged in R&D, select economic-development-focused projects and private data centers. The MARCS towers project lets ISPs leverage the publicly owned MARCS, expanding their reach into unserved areas.

To pave the way for taking full advantage of these assets, we plan to launch a survey to understand regulatory pain points and identify existing assets to support deployment. We will also tap the CSI to review regulations. We will use this intelligence to develop a comprehensive plan for reducing barriers and enabling the efficient deployment of reliable, affordable high-speed internet.

Progress to date

CSI reviewed over 9,100 agency regulations and amended those deemed inefficient.[25]

ODOT implemented an online permitting process consistent with the regulatory reform goals set in the 2019 Broadband Strategy.[26]

BroadbandOhio created the Community Accelerator Program. This planning and capacity-building program brings expert support to local governments throughout Ohio as they prepare to leverage new state and federal funding for broadband expansion.[27]

Promote the creation of world-class broadband networks throughout the state, via the use of best-in-class technologies

Two strategic pillars will guide Ohio's investment and action to achieve this vision.

Keep pace with changing technology and demand

The increasing data, throughput, and latency demands of new applications, coupled with scientific and technological advances, means that the definition of *high-speed internet* will continue to evolve. In the early 2000s, common uses of the internet were simply email and web browsing; and at that time, the FCC defined *broadband* as 200/200 Kbps. In 2010, the FCC updated that definition to 4/1 Mbps, as usage, data demands, and file sizes increased. In 2015, the FCC updated the definition to 25/3 Mbps, as video and streaming usage soared.

In July 2022, commenting on the FCC's proposed 100/20 speed metric, Chairwoman Jessica Rosenworcel said[28]:

> The needs of internet users long ago surpassed the FCC's 25/3 speed metric. [This] metric isn't just behind the times, it's a harmful one because it masks the extent to which low-income neighborhoods and rural communities are being left behind and left offline. That's why we need to raise the standard for minimum broadband speeds now and also aim even higher for the future, because we need

[25] Common Sense Initiative, Governor of Ohio

[26] Right-of-way and Utility Permits, Ohio Department of Transportation

[27] Community Accelerator Program, BroadbandOhio

[28] https://www.fcc.gov/document/chairwoman-rosenworcel-proposes-increase-minimum-broadband-speeds

to set big goals if we want everyone everywhere to have a fair shot at 21st-century success.

Today, video conferencing and streaming require more bandwidth at home. Video streaming accounted for about 54 percent of internet traffic in 2021, and video consumption will only require more data as technological advances in image quality (number of pixels) continue.[29] Advanced technologies, such as virtual and augmented reality, are expected to require substantial increases in both download and upload speeds.[30]

To keep pace with change, we will establish a process for annually reviewing internet usage statistics and updating speed standards in our grant criteria to meet evolving demands. This process will enable us to:

- Track technological advances so we can implement new standards, even before federal mandates take effect

Ensure that all locations in Ohio have access to broadband that meets standards for reliability, scalability, and security.

Progress to date

Ohio adopted the latest FCC speed standard (25/3 Mbps) as the eligibility guideline for receiving state grant funds (ORBEG) to serve unserved and underserved areas.

BroadbandOhio regularly engages ISPs in identifying and tackling service barriers, promoting competition.

Connect community anchor institutions to serve as digital hubs

Ohio has a broad array of CAIs that provide needed services to local communities, including access to health and wellness services, formal and informal education and skill building, and spaces for various community events. Many already function as digital hubs, where members of the community can go to use the internet, use or borrow devices, and take courses to build digital skills. Others need more resources to expand their offerings to meet the needs of residents.

In Ohio — and across the country — libraries are a critical provider of access and digital opportunity to many families. Ohio boasts the second largest public library system in the US, by holdings.[31] More than 200 libraries participate in the Every Citizen Online initiative that provides digital training to adults. More than 4,200 CAIs partner with OARnet, including 542 in the southeast region (highest number per capita).[32]

To reach and support the broadest number of Ohioans, we plan to ensure that every household has a CAI with at least 1 Gigabit of symmetrical internet access within five miles and that the CAI has the digital devices and trainings needed to support the residents they serve. We will co-invest

[29] The Global Internet Phenomena Report, Sandvine, January 2022

[30] Ibid

[31] Library Statistics and Figures: The Nation's Largest Public Libraries, American Library Association

[32] OARnet internet technology centers data

with service provider partners to scale up to meet needs and demand. And we will test and learn, evolving resources and programming to fuel innovation and economic growth.

Progress to date

More than 4,200 CAIs connected to the OARnet middle-mile network can access at least 1 Gigabit symmetrical speeds.

Many CAIs across the state offer digital inclusion programs. More than 200 libraries, community colleges, and educational centers partner with Connect Ohio as part of the Every Citizen Online initiative to provide free basic computer and broadband training classes to Ohio adults. The Digital Navigator program, operated through the Ohio Library Council, provides one-on-one assistance to help people connect to the internet, get a device, set up a telehealth appointment, and more. The Ohio Public Library Information Network (OPLIN) provides guidance to Ohio libraries looking to implement the Northstar program focused on basic digital literacy skills training. All Columbus Metropolitan Library locations offer free Wi-Fi and internet access, and CML offers technology training, job assistance, and homework help centers equipped with computers for students. Many schools and universities across Ohio provide free hotspots in their parking lots and surrounding areas.

The Finder Tool connects residents to local access points for high-speed internet.

Enable participation in the modern economy

Four strategic pillars will guide Ohio's investment and action to achieve this vision.

Expand telehealth access and usage via targeted programming

The 2019 Broadband Strategy highlighted mental health as a concern in Ohio. At the time, Ohio ranked in the bottom quartile for incidence of Adverse Childhood Experiences (ACEs). The situation has improved recently, with 16 percent of children experiencing two or more ACEs in 2022, compared with 18 percent in 2019.[33] Ohio now ranks near the middle of all states in incidence of ACEs and has opportunities for further improvement.

Suicide rates also reflect mental health needs in Ohio. Suicide rates have been rising, with a 24 percent increase in suicide deaths per 100,000 people, 2010-2019.[34]

The pandemic exacerbated the mental health crisis, especially as alcohol and substance use rose significantly.[35] Coupled with the pandemic, the opioid and overdose epidemic has increased demand for behavioral health services. A November 2021 survey by the Ohio Council of Behavioral Health & Family Providers found a spike in demand for behavioral health services, with notable

[33] America's Health Rankings, United Health Foundation

[34] Ibid

[35] Breaking Point. Ohio's Behavioral Health Workforce Crisis, The Ohio Council of Behavioral Health & Family Providers

increases in requests for youth mental health services, adult mental health services, and crisis services.[36]

Despite small improvements in certain metrics, reversing the multi-year trend of declining mental health keeps mental health services a priority for Ohio. Telehealth, particularly tele-mental-health, could help Ohio address several significant challenges:

- High rates of mental health issues. Ohio's 22 percent rate of depression among adults is more than 12 percent above the national average.[37] Mental health issues among youth present an especially pressing challenge as suicides among youth 14 and younger increased 300 percent, 2007-2019.[38]
- Underdeveloped tele-mental-health use. Ohio plans to expand the reach of remote mental health services. Nationwide, only 22 percent of mental health and behavioral counseling claims in December 2021 were submitted for telephonic treatment.[39]
- Shortages of mental health professionals. Seventy-six percent of Ohio counties are designated as Health Professional Shortage Areas (HPSAs) for mental health by the US Health Resources and Services Administration (HRSA).[40]

Improving access to telehealth, especially to treat mental health issues, would help achieve several broader goals of the DeWine-Husted administration. Broadening internet availability would help the Ohio Department of Health (ODOH) meet its goals for improving access to care — one of three priorities set in the 2020-2022 State Health Improvement Plan (SHIP).[41] Improved internet access enables the use of telehealth, which is a key ODOH strategy for expanding access to care. Easier access would also add channels to help address addiction issues, which is another SHIP priority.

The benefits of expanding telehealth services in Ohio are substantial, and given the alignment with multiple agency priorities, we plan to support investments in telehealth resources and training to improve the provider collaboration infrastructure. We will continue our investments to provide telehealth in schools. And we will pilot new programs that use digital technology to integrate providers of mental healthcare with providers of primary care and first responders (e.g., telemedicine providers will connect remotely during primary care visits, health visits at schools, and crisis situations involving first responders), especially in remote areas where gaps in connectivity and quality of care persist. We will also launch outreach programs in partnership with trusted local community groups to bring telehealth services where they are needed most (e.g., outpatient service access points).

We expect these efforts to reduce the barriers to accessing physical and behavioral healthcare, raise overall utilization of telehealth, and achieve better, more equitable health outcomes.

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[36] Ibid

[37] Ohio State Health Assessment, Population Health

[38] 2021 Annual Report, Ohio Department of Mental Health and Addiction Services

[39] Compile Healthgraph Claims, all payor types, CY2020 and 2021

[40] Ibid

[41] ODH State Health Improvement Plan (2020-2022), Ohio Department of Health

Progress to date

Since 2020, we have been conducting two telehealth pilots in school districts. The Broadband Telehealth Pilot Project in the Switzerland of Ohio School District in rural Monroe County is fully operational, providing real-time access to mental health counselors for 2,000 K-12 students. Before the pilot, counselors had to commute as long as 60 minutes to reach children in need.[42] The Muskingum Valley Educational Service Center pilot gives 20,000 students access to telehealth services. Six of the 15 districts are online, and six more will soon join them.

We have identified an entity (OCHIN) to serve as the statewide telehealth administrator to help expand crucial healthcare services for Ohio's K-12 students.

Recent legislative changes (HB 122) expand telehealth availability.[43] The bill authorizes more healthcare professionals to provide telehealth services (e.g., pharmacists and behavioral analysts) and increases affordability for both recipients and providers of care.

Expand access to remote education opportunities

The DeWine-Husted administration has prioritized literacy, accelerated learning, workforce readiness, student wellness, and support for children, families, and school communities. During the pandemic, school closings affected 50 million students nationwide and made remote education the predominant learning option.

Many Ohio students, particularly in vulnerable populations, still suffer from pandemic learning loss. A key priority of the DeWine-Husted administration is enabling digital learning for Ohio's 1.6 million public school students,[44] a population that declined nine percent between 2006 and 2022.[45] Forty-seven percent of these students classify as economically disadvantaged, and 15 percent live in rural areas (six percent in areas of average poverty and nine percent in areas of high poverty).

Internet access has proven benefits for school-aged children. Access to educational content and tools on the internet enhances classroom learning. Digital skills give children access to a wide range of resources that are important for developing the skills and knowledge that will enable them to prepare for the jobs of the future and participate in the digital economy. High-speed internet access can enable virtual field trips, access to top learning and informational content and tools, virtual classrooms enabled by augmented and virtual reality, and more. An Economist Intelligence Unit report suggests that increasing a school's connectivity ten percent can raise the effective number of schooling years per student and also boost GDP per capita more than one percent.[46]

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[42] Telehealth Pilot Project, BroadbandOhio

[43] Ohio Expands Availability of Telehealth, The National Law Review

[44] Ohio Education by the Numbers, Thomas B. Fordham Institute, 2023

[45] Ibid

[46] We Need to Connect Every School to the Internet. Here's How, World Economic Forum, December 10, 2021)

All of Ohio's schools meet the 2013 FCC minimum bandwidth target of 100 Kbps per student, and all have fiber-optic connections.[47] But only 38 percent of school districts meet the 2018 goal of one Mbps per student.[48] Closing this gap is a BroadbandOhio priority.

Students also need internet access at home to do their homework and take advantage of supplemental tutoring and top online informational and learning content and tools. Even before the pandemic, the FCC reported that 65 percent of students used the internet at home to complete their homework, and 70 percent of teachers assigned homework that required broadband access.[49]

But many students and teachers lack digital access at home, particularly in underserved communities. In 2018, 23 percent of Ohio's children (45 percent of those in households below the federal poverty threshold) and 15 percent of Ohio's teachers lacked full digital access.[50] Twenty-eight percent of Black, Indigenous, and other children of color lacked access to broadband and a device at home.[51]

Enabling digital education would also help achieve broader goals of the DeWine-Husted administration. Robust internet access is essential to achieving the Strategic Plan for Education published by the Ohio Department of Education (ODOE). The plan states that "each child must know how to critically read, write, work with numbers, and leverage technology to maximize access to future learning experiences."[52]

The plan also calls foundational knowledge and skills — especially technological skills — key attributes of a high school graduate. The plan defines "basic skills in mathematics, English language arts, and technology" as "the building blocks that enable future learning. Specific to technology, the graduate will understand its global impact and use it to design solutions, communicate ideas, and share information."

Further, the ODOE plan highlights the importance of "improving targeted support and professional learning so teachers can deliver excellent instruction today, tomorrow, and throughout their careers." The plan calls for giving educators "access to options for delivering the best digital and personalized learning."

With these mandates in mind, we will partner with state agencies and OARnet to ensure that all Ohio schools have at least a one Gbps symmetrical internet connection and speeds that enable one Mbps per student. We will leverage federal funding programs to invest in digital devices and digital skills initiatives that ensure all students have access to a tablet or laptop at home; all those eligible for the ACP are enrolled in the program; and all students without home access to high-speed broadband can access a high-speed, high-capacity hotspot.

We expect these efforts to achieve several important outcomes:

- All students and teachers in Ohio have access to reliable internet and internet-capable devices to access digital learning in their homes and schools.

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[47] Education SuperHighway

[48] ConnectK12

[49] Digital Homework, National School Boards Association, 2019

[50] The Far-Reaching Consequences of the Digital Divide on Ohio's School Children, Children's Defense Fund Ohio

[51] Ibid

[52] Ohio Strategic Plan for Education (2019-2024), Ohio Department of Education

- Schools leverage digital learning tools to enrich the curriculum and connect Ohio students to world-class resources.
- Enrollment and achievement increase across Ohio's schools.

Progress to date

The OARnet network currently provides high-speed internet access to more than 625 K-12 school sites and 469 higher education sites.

Ohio allocated $50 million in state CARES Act funding to provide hotspots and internet-enabled devices to students through BroadbandOhio Connectivity Grants. The state awarded grants to 173 rural public schools ($9.7 million), 151 small town public schools ($8.8 million), 96 suburban public schools ($6.1 million), and 49 urban public schools ($5.3 million).[53]

Support Ohio's farmers to improve productivity by enabling digital agriculture uptake

Agriculture is critical to the Ohio economy and the livelihood of many Ohioans. As of 2018, Ohio had approximately 77,800 farms — #4 in the nation. Net farm income in Ohio totaled $2.2 billion in 2018.[54]

Using technologies like crop and animal health sensors, robotic milkers, plant processing tools, and spatial data management systems, digital agriculture can make Ohio farmers more efficient and resilient. The USDA categorizes almost half of Ohio as *prime farmland*,[55] more than able to capture a share of the $47 billion in annual benefits that digital agriculture could deliver across US farms.[56] Thirty percent of Ohio farmers already use digital agriculture techniques — five percentage points above the national average.[57]

But raising adoption of digital agriculture faces substantial barriers. Only 64 percent of Ohio farmers have internet access. That is 18 percentage points below the national average.[58]

Digital agriculture enables farmers to manage their farms more efficiently and effectively, better track animal health, and maintain soil health, which makes the ecosystem more stable. But digital agriculture requires internet-enabled devices and equipment, and often high-throughput connectivity, to collect, synthesize, and analyze information, often in real time. Access to reliable broadband is critical.

[53] The Far-Reaching Consequences of the Digital Divide on Ohio's School Children, Children's Defense Fund Ohio

[54] 2020 Ohio Facts Economy

[55] Ohio by the Numbers, Ohio Secretary of State.

[56] A Case for Rural Broadband: Insights on Rural Broadband Infrastructure and Next Generation Precision Agriculture Technologies, USDA, 2019

[57] USDA Farm Computer Usage and Ownership (2021)

[58] Ibid

With these opportunities and challenges in mind, we will facilitate the expansion of digital agriculture technologies and applications in rural communities by connecting farmers to educational opportunities and providing resources to implement 4/5/6G use cases like smart irrigation and drone-assisted farming. We plan to offer funds and grants to support the acquisition of innovative technologies and training, as well as research efforts to help advance the technology and its impact. We will also facilitate agribusiness development sessions, and we will ensure that all farms have access to broadband through last-mile deployment.

We expect these efforts to increase the availability and adoption of high-speed internet by Ohio's farmers and accelerate their use of and benefit from digital agriculture use cases. Ultimately, this should raise agricultural revenue by reducing costs and improving harvests and advance decarbonization by decreasing water and fertilizer use.

Progress to date

Ohio State University's Digital Agriculture Program is conducting leading-edge research focused on "precision nutrient management strategies and technologies to improve efficiency of fertilizer placement, enable on-farm evaluation, automate machine functionality, enhance placement of pesticides and seed, and develop analytical tools for digital agriculture." Additional research topics include "designing precision machinery control for varying field operations and identifying the value proposition of both precision agriculture technology and farm data for individual growers."[59]

We are partnering with Ohio State University to create a fully operational smart field at the Molly Caren test facility located near London, Ohio. The initiative aims to test autonomous tractors, remote millers, remote grain bins, and other technologies at the facility in actual field conditions.

Farmers are organizing training, such as the Precision Farming Academy at Apple Farm Service.

Enable safe and easy movement of people and goods via foundational investments to enable intelligent transportation systems

Ohio is deeply committed to road safety and has begun laying the foundation for taking full advantage of intelligent transportation technologies. The state made significant investments in building and maintaining a road network that totals 121,000 center line miles and includes 21 interstate highways. Ohio is building a state-of-the-art intelligent transportation system that includes smart corridors and CCTV, dynamic message signs, and ramp meters. The state has invested in fiber-optic and communications technology near roadways to support data acquisition, processing, communication, and utilization in advanced processing systems.

A range of intelligent transportation technologies could build on this foundation and make moving people and goods safer and more efficient, including:

- Vehicle-to-everything (V2X) communication. The system enables vehicles to share information with other vehicles around them via sensors and wireless connectivity (e.g., a vehicle can alert

[59] Precision Ag, College of Food, Agriculture, and Environmental Sciences, Ohio State University

others when making a sudden stop). Roadway infrastructure can share information (e.g., stoplights can share an alert when turning red), improving safety.

- Intelligent traffic management. The system measures traffic to predict patterns and manage stoplights in real time. This prevents congestion, improves road capacity efficiency, and reduces accidents at intersections.
- Fleet management. Information technology enables remote monitoring of the fleet, including routes, mileage, tire pressure, and fuel levels. This supports proactive maintenance that increases fleet safety and lifespan.
- Intelligent electric vehicle charging. The system shares data among the vehicle, charging device, and charging operator to manage vehicle charging. This optimizes energy consumption.
- Smart corridors. This technology enables adding a lane of travel and variable speed limits at certain times to alleviate congestion and support incident management.

Enabling intelligent transportation can also help achieve the broader goals of the DeWine-Husted administration. ODOT aspires to "enable next-generation transportation capabilities, including autonomous vehicles, smart roadways and transportation systems, and creation of an integrated data exchange for transportation users, partners, developers, and providers."[60] ODOT's 2019 statewide broadband access report with InnovateOhio also noted that many emerging transportation-related technologies, such as connected and autonomous vehicles, "require a robust internet connection to function, and numerous respondents discussed how they wanted to be a part of deployments to meet this need." The report said "it is clear that numerous companies are interested in utilizing existing ODOT infrastructure to increase connectivity for transportation needs."

In this spirit, in collaboration with ODOT, we will incorporate robust highway broadband access into the deployment of smart corridors across Ohio. We will also invest in state-owned conduits to ensure that we meet state fiber and bandwidth needs and, in the process, explore revenue streams for the state in the form of leases.

We expect these efforts to result in the implementation of a policy to facilitate fiber-optic deployment along roads. The policy will prioritize deployment in locations that experience the most crashes,[61] such as:

- Rural intersections: US-62 Licking County (17.98 average crashes per year)
- Rural non-freeways: US-36 Delaware County (85.11 average crashes per year)
- Rural freeways: IR-80K Sandusky County (225.23 average crashes per year)
- Urban intersections: SR-2 Lucas County (73.93 average crashes per year)
- Urban non-freeways: CR-252 Cuyahoga County (533.83 average crashes per year)
- Urban freeways: IR-480 Cuyahoga County (425.66 average crashes per year)
- Suburban non-freeways: CR-21 Warren County (334.93 average crashes per year)
- Suburban intersections: CR-101 Hamilton County (43.71 average crashes per year).

[60] Digital Infrastructure Assets and Strategy, Ohio Department of Transportation, 2019

[61] Highway Safety Improvement Program Priority Locations (2017-2021), Ohio Department of Transportation

Deployment in such locations will reduce traffic congestion, especially on freeways, leading to cleaner air, lower energy consumption, more efficient transportation, and improved road safety.

Progress to date

Ohio's first smart corridor, the I-670 SmartLane on the east side of Columbus in Franklin County, opened in October 2019. We are developing another smart corridor along I-275 in Hamilton and Clermont counties.[62]

An ongoing pilot project, the 33 Smart Mobility Corridor is the longest connected highway in the world, with 35 miles of freeway traveled by more than 56,000 vehicles a day.[63]

Columbus received a $40 million Smart City grant from USDOT for mobility solutions in 2016.[64]

We provided funding for an engineering analysis to support the establishment of the Lake-to-River Fiber Broadband Corridor along State Route 11.

Empower Ohioans through training, device access, and digital skills

Two strategic pillars will guide Ohio's investment and action to achieve this vision.

Support workforce development initiatives that connect Ohioans to broadband deployment and digital jobs

The unprecedented investment in broadband via the 2021 Bipartisan Infrastructure Law and the American Rescue Plan will create jobs in broadband deployment across the state. This investment will enable digital jobs and remote work in communities where broadband availability and adoption are low today. Ohio's strategy to strengthen our broadband and 5G workforce, for instance, noted that federal funding of approximately $500 million for broadband deployment could create 1,250 direct construction jobs that we will need to fill, compounding the current labor shortage.[65]

The Ohio Department of Job and Family Services Job Outlook report for 2018-2028 predicts that service-providing industries will grow 2.9 percent, while goods-producing industries will shrink 0.4 percent. The healthcare and social assistance sector will see the greatest growth (11.3 percent).[66] According to a study on central Ohio, eight of the 25 occupations that will experience the greatest demand over the next decade require little more than a high school diploma and are very

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[62] Smart Corridors, Ohio Department of Transportation

[63] Smart Mobility Corridor, Beta District

[64] US Department of Transportation Grant, Smart Columbus

[65] Strengthening Ohio's Broadband and 5G Workforce, Governor's Office of Workforce Transformation and BroadbandOhio

[66] 2028 Ohio Job Outlook, Department of Job and Family Services

vulnerable to technological disruption. Workers skilled in interacting with smart devices will be critical to the economy.[67]

Ohio has set a multi-year strategy for growing a workforce that has strong 5G and broadband capabilities. The strategy seeks to solve three key issues: lack of awareness of broadband careers, lack of education and training programs, and lack of awareness of state and federal funding programs. The strategy calls for partnering with education and industry stakeholders to address all three issues. The strategy aims to close digital equity gaps by developing the workers needed to execute the broadband plan and promoting economic development through broadband-related and broadband-enabled employment opportunities.

To this end we will:

- Create links between state programs aimed at developing technicians and pole-climbers and universities across Ohio to support execution of Strengthening Ohio's Broadband and 5G Workforce Strategy
- Partner with non-profit organizations and private companies to develop programs that will upskill workers for the digital jobs needed to expand broadband access
- Promote the opportunities for remote work created by expanded access to broadband and devices
- Encourage businesses to expand into and within Ohio in order to tap the potential of newly connected workers, particularly in rural areas that previously lacked connectivity.

We expect these efforts to build a labor pool equipped to deploy and maintain the expanded broadband network. These efforts will also support programming that gives all Ohioans access to the internet-ready devices and digital skills training required to engage fully in the digital economy and access digital jobs, as well as the tools to capitalize on opportunities to work remotely.

Progress to date

JobsOhio, the state's private economic development corporation created by House Bill One, drove the generation and retention of more than 800,000 jobs in its first decade.[68] Due in part to the efforts of JobsOhio, Ohio ranked #8 in 2022 among top states for doing business.[69]

The strategy for strengthening Ohio's broadband and 5G workforce includes a roadmap to address the lack of broadband career awareness, education and training programs, and awareness of state and federal funding programs.[70]

The TechCred program reimburses employer training costs for reskilling and upskilling the workforce with short-term, technology-focused credentials.[71]

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[67] Fast Forward: The Future of Smart Work in Central Ohio, 2020

[68] JobsOhio Announces Official 10-Year Results, JobsOhio, 2021

[69] 2022 Top States for Doing Business Provide an Environment for Business Growth, Area Development, 2022

[70] Strengthening Ohio's Broadband and 5G Workforce, Governor's Office of Workforce Transformation and BroadbandOhio

[71] Ibid

The Individual Microcredential Assistance Program reimburses low-income and partially or fully unemployed Ohioans who participate in a training program to obtain technology-focused credentials.[72]

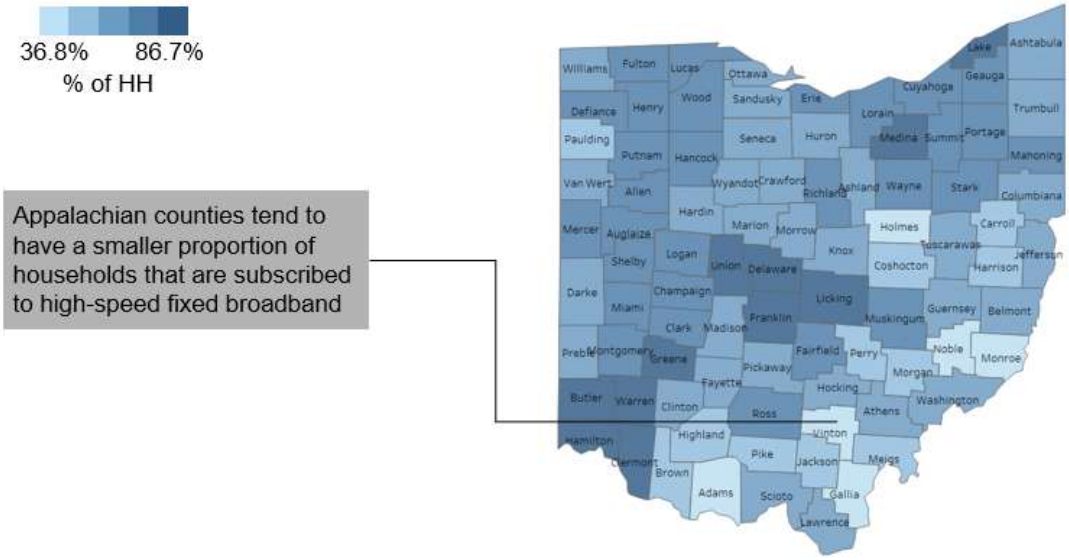
We have established 10+ training programs for broadband-related roles, including the 5G Readiness Program, the Fiber Optic Technician Program, the Telecommunications Tower Technician Program, and the Broadband Infrastructure Training Program.[73]

Accelerate adoption, usage, and economic empowerment via Regional Digital Inclusion Alliances (RDIAs)

High-speed internet infrastructure available across the state will give all Ohioans internet connectivity, but this is not sufficient to achieve the vision of full participation in the modern economy. Improving health outcomes, educational opportunities, economic development, access to essential services, and transportation safety requires that Ohioans have the digital devices and skills to use the internet productively.

Making this vision a reality will be a challenge. Even where high-speed internet is available, Ohioans face barriers to adoption. Approximately 1.3 million Ohio households (28 percent) do not have subscriptions to high-speed, fixed broadband.[74]

Share of Ohio households with a subscription to high-speed fixed broadband
2021, Household adoption rates (%)



Subscription rates are lowest in the Appalachian and distressed counties. The 32 Appalachian counties represent 17 percent of total Ohio households but 22 percent of the households without

[72] Ibid

[73] Husted Announces Grant Programs to Support Ohio's Broadband and 5G Workforce

[74] American Communities Survey, US Census Bureau, 2021 (five-year estimates)

broadband subscriptions. The 52 distressed counties represent 30 percent of total households but 37 percent of the households without broadband subscriptions.[75]

In addition to regional barriers, the gap between having a broadband subscription is especially pronounced for underserved population groups versus the general population. While 72 percent of the general population have broadband subscriptions, that number drops to 62 percent of people living below 150 percent of the federal poverty level, 63 percent of those living with a disability, and 67 percent of those over 60.[76]

The gaps in device access follow suit but are less pronounced. Nearly 83 percent of Ohioans have access to an internet-capable device in their homes (excluding those with only smartphones). But access lags among people are over 60 (77 percent), are English language learners (73 percent), or are disabled (71 percent).[77]

To accelerate digital opportunity, Ohio established the RDIAs in February 2023. The RDIAs convene diverse stakeholders to coordinate regional planning efforts, support digital inclusion activities, and collect local feedback to inform Ohio's Digital Equity Plan, in partnership with BroadbandOhio. BroadbandOhio plans to support and promote local and regional digital inclusion success stories and best practices and ensure that the state's plan best meets the needs of all Ohioans.

Ohio's RDIA regions

[75] Ibid

[76] Ibid

[77] American Communities Survey, US Census Bureau, 2021 (five-year estimates)

BroadbandOhio plans to support and launch multiple efforts in partnership with the RDIAs and other initiatives across the state focused on digital opportunities. The programs that BroadbandOhio supports will accelerate broadband adoption and usage and the economic empowerment of Ohioans. We will provide funds and grants for pilots and programs and promote broadband adoption, devices, and digital skills training. We will also coordinate across RDIAs to share best practices and celebrate successes. We will partner with universities to assess progress and opportunities across digital opportunities, over time.

We expect these efforts to increase broadband adoption rates, for all Ohioans and for disadvantaged populations, as well as the percentage of Ohioans who have access to a laptop or computer and the skills needed to use the internet safely and effectively. We are committed to ensuring that all Ohioans have the access, digital devices, and skills required to participate in the digital economy.

Progress to date

Launched five RDIAs:

- **Northwest**: Toledo Lucas-County Public Library: Leader in ensuring that community members can access critical technological resources at no cost
- **Northeast**: Cleveland Foundation: Launched the Digital Excellence Initiative in 2017 to ensure that all residents can participate successfully in the digital world and economy and to highlight the success of Greater Cleveland's infrastructure, talent, and research in digital technology and innovation
- **Central:** SmartColumbus: Innovation lab that creates a more sustainable, equitable, and prosperous Columbus region through human-centered, technology-enabled solutions
- **Southeast:** Buckeye Hills: A council of governments dedicated to improving the lives of residents in Southeast Ohio and advocating for expanded broadband access across the 34 counties of southern and eastern Ohio

Southwest: United Way: Helps people live their best lives by harnessing the compassion and resources of the community, including providing students with access to technology and opportunities to participate in virtual learning during the pandemic

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Conclusion

Since the beginning of the DeWine-Husted administration, Ohio has prioritized connecting all Ohioans with high-speed internet. The 2019 Broadband Strategy laid the groundwork for advancing high-speed broadband access across the state. Ohio has made significant progress toward the goals set in the strategy and will continue working toward full connectivity for all Ohioans in their homes and communities and achieving the broader vision defined in the revised 2023 Broadband Strategy. We will update this strategy periodically as Ohio progresses toward realizing this vision and the technological environment evolves. This effort will ensure that the state and its residents connect, participate, innovate, and compete effectively in the world and the modern economy.

DRAFT