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Broadband in Southeast Michigan:

Expansion, Engagement, and Equity

SEMCOG | SOUTHEAST MICHIGAN COUNCIL OF GOVERNMENTS

MAC Metropolitan Affairs Coalition

IMPROVING QUALITY OF LIFE AND CREATING ECONOMIC OPPORTUNITIES THROUGH REGIONAL COOPERATION

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SEMCOG, the Southeast Michigan Council of Governments, is the only organization in Southeast Michigan that brings together all governments to develop regional solutions for both now and in the future. SEMCOG:

- Promotes informed decision making to improve Southeast Michigan and its local governments by providing insightful data analysis and direct assistance to member governments;
- Promotes the efficient use of tax dollars for infrastructure investment and governmental effectiveness;
- Develops regional solutions that go beyond the boundaries of individual local governments; and
- Advocates on behalf of Southeast Michigan in Lansing and Washington

MAC
Metropolitan Affairs Coalition

The Metropolitan Affairs Coalition (MAC), a non-profit public/private partnership, is the only group that brings business, labor, government and education leaders together to build consensus and seek solutions to regional issues. It promotes regional cooperation and dialogue, and works to advance policies and develop programs that enhance the region's economic vitality and quality of life. With its partner organization SEMCOG (the Southeast Michigan Council of Governments), and the diverse perspectives of its members, MAC is uniquely positioned to be a catalyst for change and help move the region and state forward. For more information about MAC, please go to www.mac-web.org.

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Abstract

Broadband or "fast internet" is critical infrastructure for the 21st century. It has become an essential tool for most elements of everyday life, including remote learning; remote work; telehealth; communication with family, friends, and neighbors; easy access to public services and civic participation. The pandemic amplified the importance of broadband as many households struggled due to lack of access to internet service, devices to connect, and/or the skills to effectively use the internet. Existing inequities were exacerbated, particularly among rural, lower-income, Black and Hispanic, and senior households. *Broadband in Southeast Michigan* identifies key challenges and opportunities, policy recommendations, and case studies for expanding broadband throughout the region.

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Executive Summary

Broadband – fast internet – is no longer merely "nice to have" and can no longer be limited in use to those able to afford it. The COVID-19 pandemic clearly revealed that a lack of broadband creates huge disparities in the ability to work remotely, participate in education, communicate with family and friends, and access essential services including healthcare. Further, technology is constantly evolving. Its role in work, education, and our personal lives will only continue to grow. We must act now to ensure universal access for all. With unprecedented levels of federal funding now available to support broadband expansion, there is no better time to address disparities and ensure that residents and businesses throughout Southeast Michigan can get connected to the fastest, most reliable, and affordable service possible. In addition, this must be accompanied by access to devices and digital education. These are essential to full participation in a technology-driven economy.

The best federal data currently available shows that about 83% of our region has broadband at home, but local data collection tell a different story. Both the availability rates of broadband infrastructure (particularly in rural areas) and access to affordable, reliable internet are much lower than shown by federal data. The speed of service varies widely among households in both urban and rural areas due to factors including physical location, technology in use, cost, as well as the number and type of service providers.

Fast internet has long been an essential tool for supporting economic development. It enables small businesses to have an effective web presence and engage in e-commerce. It is critical to nearly every aspect of the rapidly evolving mobility industry (electric- and connected vehicles and infrastructure, ride-hailing, bus-tracking, etc.). It enables access to job postings, remote education, and training. The constant use of connected devices and social networks also require broadband access for maximum effectiveness.

Results from SEMCOG and MAC's 2021 **Pulse of the Region** survey about public perceptions of broadband found that:

- The biggest barriers to access are connection reliability, speed, and cost;
- Most respondents accessed high-speed internet at home or work using a laptop;
- It is considered extremely important for remote work/doing business and education for kids/adults;
- About 90% consider it an essential public service; and
- There are considerable differences in experience of broadband across the region.

As a result, there is no one-size-fits-all solution. Strategies for addressing gaps in availability and access to broadband will differ depending on the causes. In some cases, the lack of physical infrastructure is the challenge; in others, it is lack of affordability. In some places, it may make sense to build a community-owned Open Access Network, which provides a shared infrastructure market on which different providers can compete to deliver service. There are various models of public-private partnerships to develop or expand internet access. Another major challenge is lack of knowledge or lack of interest in using digital media, even where the service may be available. Digital exclusion creates very high costs for individuals and society as a whole. There has never been a better time to ensure that broadband is relevant, available, and accessible to all. There has never been more attention on the importance and impact of broadband and digital literacy. As Southeast Michigan works to improve other infrastructure systems such as our roads and

water pipes, this is the time to ensure that broadband availability and adoption are as ubiquitous as every other essential utility in the 21st century.

Regardless of approach, communities need to prepare for unprecedented levels of federal investment in broadband infrastructure. In the coming years, the Infrastructure Investment and Jobs Act will distribute over $65 billion for broadband throughout the United States. Communities with comprehensive plans in place will be among the most competitive to receive funding and build new assets.

This framework identifies the challenges facing the region as well as efforts to address them at different levels. It also identifies the roles of local governments and other stakeholders in ensuring that Southeast Michigan's residents and businesses have access to broadband internet as well as the ability to take advantage of the opportunities this essential infrastructure provides.

In the spring of 2021, SEMCOG and its partner organization, the Metropolitan Affairs Coalition (MAC) established a **Broadband Action Team** to identify gaps in availability, access, usage, and services among populations and communities in Southeast Michigan. The Charge was to:

> *Develop a roadmap for expanding broadband infrastructure to prepare Southeast Michigan to take advantage of economic, educational, community and social opportunities created by a robust regional broadband.*

The Action Team included representatives from state government, county government, local government, education, healthcare, economic development, information technology, library services, senior services, internet service providers, and infrastructure developers. A full list of participants is provided in the Acknowledgements section of this Framework.

Over six months, the Action Team met four times to discuss challenges and strategies related to four priority topics:

1. Mapping and Data
2. Digital Literacy and the Digital Divide
3. Broadband Infrastructure
4. Public Policy

These priorities target the digital divide: the gap between areas and households that have access to broadband and devices and those that do not. There are three main challenges creating the digital divide. These are **Availability** of the physical infrastructure; **Adoption/Usage** of services – this may be restricted by cost, speed and/or reliability; and **Digital Literacy**– having the knowledge or skills to use the internet or devices effectively. Organizations and stakeholders may use different and overlapping terms to describe elements of the divide, which can create additional challenges. Focusing on the priority topics above supports broadband expansion, engagement, and equity in Southeast Michigan. It also positions our region for success in a technology-based economy; enables us to better adapt to remote work and education environments; allows us to excel at customer-focused services; and provides the connectivity required for full participation in modern life.

The digital divide is a solvable problem. It requires policies, funding, accountability, and technology to create solutions that may not have been present in the past. There is no one solution because the causes vary by geography, income, age, race/ethnicity, business and family needs. The most effective solutions will require collaboration, public-private partnerships, inclusive outreach to affected populations, engagement with internet service providers, support of federal and state governments, and leadership by local communities.

Goals and Recommendations

High-speed broadband should be accessible to homes and businesses across Michigan to enhance community and economic development, improve quality of life, provide access to education and lifelong learning opportunities, support remote work demands, and promote equitable access to healthcare.

Goal 1: Expand High-Speed Broadband Availability throughout Southeast Michigan

a. Prioritize federal and state funding to fill gaps in rural and underserved areas in the region.
b. Expand eligibility for Connecting Michigan Communities grant program to local governments, school networks, and non-profits.
c. Remove barriers in the Michigan Telecommunications Act that make it difficult for public entities to provide or partner to provide broadband service.
d. Expand the definition of Eligible Telecommunications Carriers to include non-traditional applicants such as public-private partnerships or open access networks.
e. Enable electric cooperatives and electric companies, as well as public-private and multi-community partnerships to bid for and develop broadband networks.
f. Focus funding on development of high-speed fiber optic networks to ensure long term solutions for broadband service.
g. Plan for new infrastructure at 10 gigabit per second (Gbps), with <100 milliseconds (ms) latency, and no data caps wherever physically feasible to support community and economic development.
h. Require engagement of **all** community stakeholders when planning new networks to establish actual needs in the community.
i. Ensure coordination with local community plans when developing or expanding private networks.

Goal 2: Improve data on broadband availability and access to reflect current conditions with accuracy

a. Fund a statewide broadband mapping initiative to develop maps that illustrate broadband availability, capability, and speeds throughout the state.
b. Provide grant funding for local units of government to conduct community and regional broadband needs analysis.
c. Incentivize internet service providers to share more detailed data on current installation and future development plans.
d. Encourage all infrastructure owners to participate in the Michigan Infrastructure Council (MIC) “Dig Once” Project Portal and/or SEMCOG’s Capital Improvement Project Coordination Tool for infrastructure coordination to increase efficiency and limit disruptions for development, maintenance, and updates to various systems (water, gas, roads, broadband, etc.).
e. Insist on accurate coverage data and access data collected that reports current and real-world speed tests.

f. Allow applicants for state and federal grant programs to submit locally collected data from community surveys and speed tests.
g. Update the federal definition of broadband to 100/100 mbps to address increased technology use and future needs.

Goal 3: Ensure equitable access to broadband and support digital literacy efforts for students, seniors, and households with limited access to resources

a. Provide broadband-supported devices to all individuals or households below the ALICE (Asset Limited Income Constrained Employed) threshold.
b. Expand access to technology-based services.
c. Support efforts to provide innovative and user-friendly web-based learning and training tools.
d. Encourage all providers to participate in federal broadband programs such as the Affordable Connectivity Fund for low-income households and ensure that service speed and reliability are consistent with advertised levels.
e. Encourage K-12 and Higher education institutions to share capacity and connections with surrounding neighborhoods and communities.

Goal 4: Coordinate broadband efforts at the State level to support broadband development for community and economic development

a. Make funding of the Michigan Office of High Speed internet a priority to:
   - Coordinate all types of infrastructure – reducing disruptions in communities;
   - Increase efficiencies and streamline statewide broadband development;
   - Prioritize areas and issues to meet service needs across the state; and
   - Ensure that all stakeholders are engaged in decisions and able to access resources.
b. Evaluate success of funding awards with performance measures such as speed, service, and affordability.

Chapter 1: Introduction

Background

Everyday transactions have increasingly shifted to electronic formats over the past two decades, along with many other changes we now take for granted. Educational and professional communication happens via email. Sharing files no longer requires copy machines. Forms rarely, if ever, involve layers of different-colored paper. Conferences and sales calls are no longer assumed to take place in-person. Other things that no longer amaze us include:

- Social media connections across continents,
- Tech start-ups sprouting up anywhere and everywhere,
- Complex tax filings completed without the need to leave the house or even buy a stamp,
- Gamers and gaming channels with significant revenue streams,
- Personalized playlists mined from huge catalogs of music available on-demand, and
- The ability to binge your favorite TV series any time of day or night.

Broadband enables incalculable opportunities for regional economic development, personal prosperity, and community participation and leadership. Understanding and proactively addressing threats related to the protection of personal, government, and corporate information requires scalable, secure, and reliable internet solutions.

COVID-19 has changed our understanding and appreciation of what it is to live without high-speed internet or broadband. Access to healthcare and other essential services would not have been possible without the ability of federal, state and local governments, businesses, employers, and education institutions to pivot their operations. In May 2020, two months after many businesses began to shut down, SEMCOG and MAC hosted a webinar on *The Critical Role of*

Broadband during the COVID-19 Crisis. The goal was to help understand the critical importance of broadband to our everyday lives, and strategies for ensuring availability throughout our region.

For many people, the lack of broadband affected their ability to do things that they previously took for granted. The huge impact of broadband availability on students was obvious from the minute schools pivoted to remote learning. It was also particularly severe for seniors, and residents in rural and other underserved areas.

This webinar was included a panel of experts to outline efforts to expand broadband and address the digital divide – the gap between those with access to broadband and those without. Connect Michigan provided an overview of broadband, including the different types; availability in Michigan; terminology used in the industry; its importance during the COVID-19 crisis; as well as some policy recommendations to expand, fund, and create a more integrated system for broadband infrastructure in the state. We heard from Lyndon Township, a rural community in western Washtenaw County on how residents helped coordinate and pass a millage to provide broadband to all residents. The St. Clair County Regional Education Service Agency (RESA) discussed its existing fiber network and efforts to update, improve, and expand it to several communities across the county through a public-private partnership.

What is Broadband?

As described above, broadband is a key tool for community and economic development. At a very basic level, broadband is fast internet. The definition has changed over time to reflect changing technology and usage. As more people use the internet for work, education, accessing essential services, entertainment, and socializing, demand for reliable and affordable broadband service continues to increase.

Broadband infrastructure development and costs are determined by a number of factors. These include geographical location, topography, population density, and land cover. Broadband infrastructure can refer to many different types of technology, including: fiber-optic cable, fixed wireless, traditional cable, cellular, and satellite – all of which have advantages and disadvantages. Access to and usage of broadband also requires having the necessary devices to connect. Affordability of service, access to devices, and knowing how to use the internet (digital literacy) are all limiting factors.

Speed is the most common measure of internet service. In 2015, the Federal Communication Commission (FCC) updated the definition to 25 megabits per second (Mbps) download and 3 Mbps upload – generally expressed as 25/3 Mbps. Download speeds refer to the time taken to receive data/information and upload speeds refer to time needed to send data/information. Until 2010, it had been 4/1 Mbps and in 1996, 200/200 Kbps. With exponentially greater demand for connectivity and speed, there is growing consensus in early 2022 that broadband should be defined as 100 Mbps upload **and** 100 Mbps download speeds. What do these speeds mean on a practical level?

In 2018, it was estimated that a download speed of 10 Mbps could support one to two devices, and enable web surfing and emails. A 25 Mbps speed could support three to five devices and enable video conferencing and HD streaming. A 1 Gbps speed could support 10 or more devices and enable real-time streaming, extreme HD and huge file transfers. At this time, it was mainly used in business settings. However, work-from-home and remote learning has increased demand exponentially. With the average Michigan household having 2.58 persons and using seven internet-enabled devices, speeds and reliability are automatically slowed down. The number of

devices per-person is expected to double over the next few years as more people work from home and more devices are connected. The bandwidth needs of improving technologies are also increasing rapidly. Now, downloading an ultra HD video can use 25 Mbps and uploading home-security camera to the cloud can use 3 Mbps. Raising the definition of broadband will ensure industry standards and services reflect true needs.

Broadband service is also affected by latency and data restrictions, which limit the quality of service, and need to be addressed to ensure that services are equitable and meet the practical needs of all users. Additionally, broadband can be provided by many different providers, including telecommunications companies, municipalities, libraries and schools, electric cooperatives, and public-private partnerships.

Local Government Role in Broadband

Local governments are no longer just a partner in bridging the digital divide. They are leaders. They have the ability to change the narrative for broadband as a basic service – not a luxury – and as a tool for community and economic development.

Broadband has been shown to increase a community's property values; improve quality of life through access to essential services, entertainment, telehealth, and participation in community activities; attract and support business growth; and expand remote work, education, and training.

According to the 2018 *Michigan Broadband Roadmap*, of the 1,773 municipalities in Michigan:

- 21% have no broadband access *(27% of which are households with school-age children)*
- 37% have broadband access in less than half of households
- 21% have complete broadband coverage for all households

At its October 2020 General Assembly, SEMCOG held a session on *The Critical Role of Broadband to Education, Business, and Quality of Place* to try to establish the major concerns of local governments and education institutions related to broadband. The goal of the session was to present definitions, share information on different types of broadband, discuss current and future opportunities, and analyze data related to availability and equity among different populations groups. The session also sought local government input on short- and long-term strategies for increasing broadband availability and access in Southeast Michigan. Among the concerns expressed by local leaders were:

- Inaccuracy of federal data and need for more granular local data;
- Changing demand for faster and more reliable home internet as more people are using devices at home for remote work and learning;
- Clarification of the term “broadband;”
- Funding available for broadband development;
- Need for more affordable broadband;
- Regulatory and legislative limitations to local governments developing broadband;
- Funding for community provided hotspots;
- Digital literacy;
- Actual speed availability versus advertised; and
- Inequitable availability of devices.

Based on these concerns, SEMCOG and MAC convened a roundtable discussion in January 2021 with participants from the General Assembly workshop and other stakeholders. The objective was to identify actions based on the most critical needs facing local governments.

The following common needs were identified:

- **Broadband is essential infrastructure** comparable to roads or water. However, parts of the region do not have availability or access, particularly in rural communities. This is due to the high cost of development in rural and low-density areas and limits to local government access to funding. Much of the existing infrastructure is owned and operated by internet service providers that have built across the country through private investment. The increased cost of providing services in low-density areas or in certain types of terrain reduces the return on investment for private companies. As a result, there are vast areas - mainly in rural America – that lack infrastructure. In some areas, federal and state governments have incentivized providers to expand their networks. In other areas, local communities have been left to build the infrastructure and provide the services through a contract with a non-profit provider or provide it themselves.
- **Digital divide/affordability of internet service** can prevent access, even where broadband is available in a community, not all households can afford the cost of subscription or devices – seniors, children and low-income households need to be prioritized for home access. Funding

from the Coronavirus Aid, Relief, and Economic Security Act (CARES) and Community Development Block Grant (CDBG) can only cover limited needs.

- **Data discrepancies**, such as the disconnect between FCC/Connect Michigan and local data, make it difficult to identify real needs, adequately plan broadband infrastructure, and access funding to fill infrastructure gaps. It is expensive to implement local surveys and locally-funded engineering and feasibility studies to establish true availability in communities.
- **Broadband is an important tool for technology-based economic development**, including Advanced Transportation and smart cities and for preparing the future workforce.
- **Educating the public** on the opportunities and importance of broadband is important, along with cyber security issues.

Opportunities

- Broadband is a bipartisan issue.
- There is a convergence of interest in broadband by municipalities, education, business, and healthcare, creating a “perfect storm” for collaboration, economic development, and expansion of services throughout the region.
- Communities have begun working together to develop countywide or multi-community plans. Examples include Washtenaw County working towards a goal of countywide broadband access and equity and Oakland County townships considering partnerships with neighboring communities to reduce costs by subsidizing services to residents.
- There are considerable state and federal resources available to support broadband development – particularly in rural areas – as well as internet services for low-income households. The CARES Act provided funding for an Emergency Broadband benefit (EBB) fund - $3.2 billion subsidy program for discounted service for low-income households.
- Intermediate school districts across the state have a fiber network that connects to all public schools and more than 1 million students. There are opportunities for partnerships with other (public) entities to build on this network. ISDs have been working with public libraries and the Michigan Department of Technology, Management and Budget.
- Governments at all levels have an important role in increasing availability to broadband and its affordability. Local governments can access funding sources, including those coming through the state, 911 surcharges, taxes and fees on telecom equipment, rights of way, franchises, etc. where allowed.
- Local communities can also increase digital literacy through partnerships with libraries, education institutions, and internet service providers.
- Organizations like Connect Michigan, MERIT Network, Michigan Education Technology Association, MEDC, and the State Broadband Task force are important resources and potential partners for local communities.

Local governments have an important role in expanding broadband availability, access, and usage in their communities. How they pursue this objective depends on their interest, knowledge, capacity, and resources. To take advantage of the unprecedented levels of funding available for broadband, through various federal and state programs, communities need to become shovel-ready by identifying needs and gaps. These assessments can be done by local government staff or with the help of community organizations and consultants. Once parcel level data is available,

communities will be in a better position to develop a plan. Establishing partnerships with neighboring communities, a community's home county, the state, and internet service providers may help provide additional financial and technical support**.** Communities also need to communicate the need and opportunities provided by broadband with their residents and businesses and build support for potential projects and millages.

Education's Role in Broadband

The pivot to remote education across the nation was possible because of broadband. Where broadband access did not exist, students fell behind. While many institutions were offering remote classes as an option prior to the pandemic, most were not ready for the wholesale transition - either because of technical challenges, teacher preparedness, or lack of student access. With the help of funding from the CARES Act and partnerships with businesses and internet service providers, most schools were able to provide internet enabled devices and technical assistance to many students who needed it within a fairly short time. Remote education is now a permanent part of the education and training systems, and it is expected to remain an important tool for K-12 education, community colleges, universities, and workforce development in the future.

Metropolitan Affairs Coalition (MAC) Input on Broadband

The Metropolitan Affairs Coalition (MAC) provided input into the challenges and opportunities of broadband through participation in the SEMCOG/MAC Broadband Action Team as well as through discussions at MAC Board meetings. The Board includes leaders from business, labor, education, and government. The board indicated that availability of broadband across the region was the main concern, and the actions that would make the most difference to increasing availability were to remove restrictions to municipal broadband (47%) and focusing on the digital divide (41%). In terms of policies to help expand broadband availability and access, board members felt that reducing the cost for underserved populations (57%) and classifying broadband as a utility (35%) would be most effective.

When asked what actions were most important to their organizations, 56% responded that supporting digital literacy was the most important action. Others included providing internet-enabled devices (20%) and subsidizing internet services (16%). The board felt that the region could best address the digital divide by increasing number and access to public hotspots (67%) and increasing training to support digital literacy (33%).

SEMCOG/MAC Broadband Action Team

As a result of these discussions, SEMCOG and the Metropolitan Affairs Coalition (MAC) established a **Broadband Action Team** in spring 2021 to identify gaps in availability, access, usage, and services among populations and communities in Southeast Michigan and identify strategies to fill these gaps.

The Action Team engaged a broad spectrum of stakeholders:

- State, county, and local government: elected officials, economic development, public works, information technology, administrators, library services, senior services
- Education: elected officials, superintendents and presidents, information technology
- Business: internet service providers, utilities, manufacturers, construction, finance,

- Labor: construction trades, education
- Other Stakeholders: Connected Nation Michigan, State of Michigan, MERIT Network, Legislators

Charge of the Action Team

The charge of the Action Team was to provide input on the development of strategies, policies, and deliverables for expanding broadband infrastructure in underserved areas across the region and providing households with access to internet services, devices, and the training to make best use of the internet and the services it provides.

The Action Team focused on four priority issues identified during discussions with local governments with a view to meeting key outcomes. The focus areas are:

1. Mapping and Data
    a. Provide data and mapping resources to support the initiative and perform regional analysis of data.
    b. Identify local data sources and support collection of additional local data.
2. Digital Literacy and the Digital Divide
    a. Help broaden digital literacy by engaging partners and equity populations.
3. Broadband Infrastructure
    a. Engage with internet service providers to help identify resources and collaborate on infrastructure coordination.
    b. Provide assistance to communities, education institutions and other partners to support initiatives that strengthen the broadband ecosystem.
    c. Expand broadband infrastructure to ensure rural and underserved areas are provided with broadband services.
4. Public Policy
    a. Identify policies that foster economic, educational, community, and social opportunities through broadband expansion, infrastructure, and access.

Over six months, SEMCOG and MAC, along with the Action Team worked to meet these outcomes through four meetings, presentations, conversations, research and outreach to additional partners. Each meeting focused on different issues with partners providing an overview of their challenges, needs and programs and engaging with Action Team members on opportunities for collaboration and moving the issue forward.

Perspectives from Internet Service Providers

The Broadband Action Team had active participation from several internet service providers (ISPs) AT&T, Comcast, Verizon, and Merit Network. At the second meeting of the Action Team, four organizations described (as summarized below) their plans for expanding broadband availability and usage in Southeast Michigan, which included investment in both infrastructure and digital literacy.

AT&T

AT&T has built advanced networks for generations, which have resulted in a wide array of broadband services for reliable, high-speed internet access. AT&T has invested more than $1.4 billion in Michigan's wired and wireless networks from 2018-2020. Utilizing more than 4,000 Michigan employees, 40 percent of whom are union-represented, AT&T offers high-speed internet throughout its Michigan footprint, including AT&T Fiber to customers in Michigan cities. The company's 5G network is live for consumers and businesses across the state, and AT&T is currently building FirstNet, the nationwide network that connects first responders in times of crisis. In support of families and communities, AT&T has committed $2 billion nationwide to bridge the digital divide over the next 3 years. This includes Access from AT&T, an affordable internet option for limited-income households, the Affordable Connectivity Program, and digital literacy & adoption support, including the opening of two Connected Learning Centers in the City of Detroit. AT&T offers 140-plus years of experience in connecting Michiganders by working with Michigan communities throughout the region and state.

Comcast

Comcast is working with many communities and nonprofits in the region and expanding its business to new communities. It is currently working with Washtenaw County on a Connecting Michigan's Communities (CMIC) project, has invested $4 million in South Lyon, and is creating commercial networks in Redford, Novi, Farmington, and Oxford. Comcast recently announced a $1 billion commitment over the next 10 years to reach up to 50 million people from low-income families and provide them with the training, tools, and resources they need to succeed in a digital world. Comcast's Internet Essentials program is the nation's largest and most comprehensive broadband adoption program. It provides $9.95 internet service and $150 laptops to qualified households and has connected more than 10 million people to the internet at home. The program has expanded its eligibility more than a dozen times including to Federal Pell Grant recipients.

Merit Network

Merit Network is a nonprofit corporation owned and governed by Michigan's public universities. It operates America's longest-running regional research and education network, comprising more than 4,000 miles of fiber-optic infrastructure. Merit's Michigan Moonshot is an approach to addressing the digital divide through data collection, community education, policy development, impact studies, and connecting communities to funding. It scopes problems and works with government, schools, and nonprofits. It is currently engaged in about 20 locations. It collects real-world granular data through surveys for communities to help identify gaps in service. It is providing every Detroit Public School Community District School with a 10 Gbps backbone, which also delivers fast internet for people around the schools. Merit is working with Connect 313 to expand public Wi-Fi in the City of Detroit.

Verizon

Verizon is building out its 5G Ultra Wideband network using a combination of millimeter wave and C-band spectrum to deliver high speed, reliability and performance for mobile, home, and business customers. Also, Verizon is committed to digital inclusion, ensuring that everyone has the opportunity to realize the benefits of technology and participate in the digital economy. Working with the non-profit, Digital Promise, the Verizon Innovative Learning program provides free technology, free internet access, teacher training, and a next-gen, technology-infused curriculum to under-resourced schools across the country. In Michigan, two Ypsilanti schools participate in the program. In addition, Verizon has launched a next-gen online education portal called Verizon Innovative Learning HQ, which is available to all (including educators and students). It is a key driver in Verizon's goal to provide 10 million youth with digital skills training by 2030.

State Initiatives

The State of Michigan created the Michigan High-Speed Internet (MIHI) office in 2021 to "bridge the digital divide by convening and coordinating departments and agencies in the advancement, implementation, and funding of …efforts to bridge the digital divide." This office is located in the Department of Labor and Economic Development and will be a key agency in mobilizing broadband funding through the Infrastructure Investment and Jobs Act. The focus will be to accelerate connecting every Michigander to reliable and affordable high-speed internet.

The MIHI office has four core goals:

1. Ensure high-speed internet is available to every household, business, anchor institution, and community in the state.
2. Create a more digitally equitable Michigan.
3. Improve the state's broadband ecosystem.
4. Enhance and coordinate Michigan's broadband related investments with other investments in social programs, education, and economic equity and development.

In addition, it will:

- Coordinate infrastructure plans through the "Dig Once" state portal;
- Develop a high-speed internet infrastructure action plan in coordination with local governments, community development and planning organizations, businesses, and academic institutions, to build infrastructure as efficiently as possible and
- Develop a digital equity plan in coordination with local governments, community development and planning organizations, businesses, and academic institutions by identifying barriers to digital equity, and developing measurable objectives for affordability, access, digital literacy, privacy, and cybersecurity awareness.

MIHI will be an important resource for local governments looking to partner with the state on developing plans.

Next Steps

Based on the discussions, surveys, input and meetings outlined above, SEMCOG and MAC have developed policy recommendations, tools and resources for local governments to address broadband challenges facing their communities. Additional products, potential funding, and technical assistance are also being planned.

Future Work and Products

Based on the priorities identified by the Action Team, the next steps are to develop products that help fill the gap in broadband availability and access. These will include:

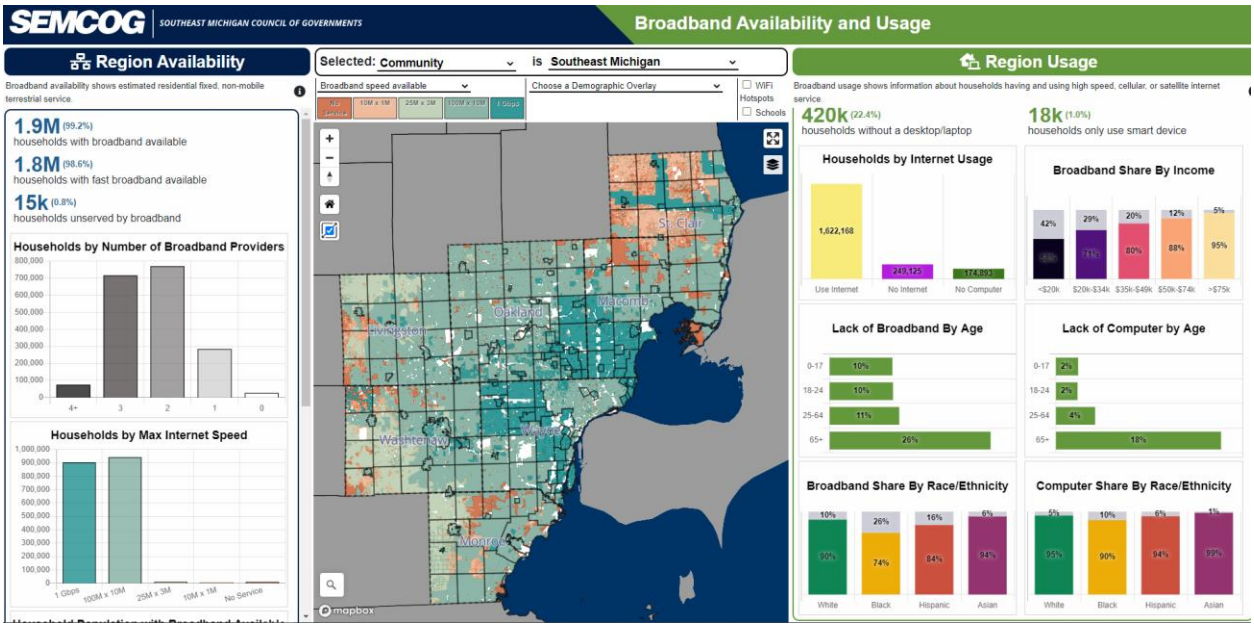
- Communicating best practices through story maps, blogs, webinars, and videos;
- Identifying funding to conduct feasibility studies, build partnerships, and collect data;
- Coordinating technical assistance for communities developing broadband infrastructure and programs; and
- Working with the legislature and policy makers on implementing the policy recommendations.

Chapter 2: Broadband in Southeast Michigan

What Does the Data Say?

In the early 2000s, about half of all adults in the United States were online. That number is now up to 93%. This increase simply shows that – as a society – we are more dependent on broadband in our everyday lives for e-commerce, healthcare, entertainment, transportation, working from home, and education. The massive increase in internet users over the past 20-plus years also puts the spotlight on the importance of broadband availability and access to a computer (desktop/laptop). High-speed internet is simply essential for all places and populations in Southeast Michigan.

While society has become more dependent on broadband for everyday life, there remains a significant population within our region that does not use the internet. There are 1.8 million households in the Southeast Michigan region, and 13% of these are without broadband, including 10% of children. Concerning the availability of computers, 22% of households in the region do not have access to a computer, including 2% of children. Thus, the focus on broadband for our region shifts to individuals with a lack of broadband due to affordability and access.



SEMCOG's Southeast Michigan Broadband Availability and Usage Tool displays digital connectivity in terms of residential broadband availability, internet use, and computer usage throughout Southeast Michigan. It is a valuable tool for communities to understand existing coverage and gaps in service as well as access to devices at the local, school district, county, and regional levels.

Broadband Usage in Southeast Michigan

When we look at broadband and computer adoption and usage, it is helpful to focus on three demographic groups. People with lower levels of income, minority racial and ethnic populations, and the elderly are all less likely to have broadband. Broadband internet use refers to a household having and using at least one type of internet subscription (other than dial-up). Qualifying broadband subscriptions include traditional cable, fiber-optic cable, DSL, cellular data plans for mobile devices, satellite, and fixed wireless.

The income demographic shows the largest disparity for broadband usage. The lower the household income, the less likely a household is to use broadband. Of households making less than $20,000, 42% do not have broadband access. Meanwhile, only 5% for households making greater than $75,000 do not utilize broadband.

The race/ethnicity demographic also shows a gap for broadband usage. When comparing households in the region by race/ethnicity, 26% of Black households do not have broadband, compared to 16% of Hispanic households, 10% of White households, and 6 percent of Asian households. Concerning computer access, 10% of Black households do not have it, compared to 6% of Hispanic households, 5% of White households, and 1% of Asian households.

The age demographic also shows differences, especially among older adults (65+). With older adults, the gap can partially be attributed to affordability and access. It also is characterized by a generational gap in knowledge. The data shows that 26% of older adults lack broadband compared to 10% of those younger than 65. In addition, 18% of older adults do not have access to a computer. Among individuals younger than 65, only about 3% do not have a computer.

While data shows variability in broadband usage across various demographics, the most significant gaps can be identified and addressed by focusing on populations that are most disproportionately impacted.

Chapter 3: Priority Issues

Mapping and Data

Two of the most important things data and mapping can tell us about broadband are where it is available and who is using it. This in turn helps to identify gaps in availability and usage. One goal for broadband data and mapping is to help close the gap between those who have access to broadband and those who do not, also referred to as the digital divide. Reliable broadband mapping and data is a matter of critical importance to identify areas where robust broadband is lacking.

Broadband mapping and data are important because:

- They provide communities with the knowledge needed to apply for grants and funding to expand broadband in their areas.
- Businesses can factor this information into important location decisions.
- Communities can set baseline metrics that will help in monitoring the progress of broadband expansion efforts.
- Communities can identify unserved or underserved areas.
- Broadband data and mapping also show the type of technologies that are available in a specific area, which can be beneficial for economic development activities.

As the Federal Communication Commission (FCC) has been collecting data from internet service providers on availability and usage for years, but there are efforts to improve the quality of data available. Currently, data is compiled at census-block level. A census block may include several hundred households and does not allow for a granular picture understanding of where service actually exists. If one household has access to internet service in a census tract, the entire census block is deemed to have access regardless of if others in the block have internet service or not. Therefore, data and maps based on current FCC data only provide a piece of the picture. In some cases, it shows service in areas where it is clear there is no service. It is anticipated that improved FCC data collection efforts in the future will give us a better understanding of where broadband is lacking.

Case Studies from Southeast Michigan

As the FCC works to improve data efforts, Southeast Michigan communities are taking the initiative to collect their own data.

Washtenaw County: Countywide Coverage Study

The Washtenaw County Broadband Task Force contracted with Merit Network for a comprehensive data collection effort to identify specific parcels lacking broadband coverage study for the county. The purpose of this initiative was to address the disconnect between FCC data and real-time experiences at the local level. Merit network surveyed 15 rural townships in

Washtenaw County and found 63% of households in these areas were unserved compared to FCC data that showed only 2% were unserved. Results of this effort include:

1. More precise parcel level granularity coverage maps.
2. Funding through the Rural Digital Opportunity Fund (RDOF) Grant Program.
3. County-issued RFPs to internet service providers to build broadband infrastructure in remaining unserved households using ARPA funding and some general funds.

It is anticipated that every household in the county will be served as the projects are built out with a target date of 2026.

More information on this initiative can be found at washtenaw.org/broadband

Contact: Barb Fuller, Chair, Washtenaw Broadband Task Force, barb@provide.net

Livingston County Broadband Survey

Livingston County has large rural areas without broadband service. The county has partnered with Merit Network to carry out a Broadband Assessment to identify parcel-based speed testing because of concerns with the accuracy of FCC data. The county received a planning assistance grant from SEMCOG to cover part of the cost. This initiative will provide a comprehensive broadband assessment, including both speed and availability. This will be followed by a marketing plan for Livingston County. The plan is to begin infrastructure development as soon as possible.

More information on this project can be found at
https://www.livgov.com/communications/Pages/Resident-Broadband-Survey.aspx

Contact: Kristoffer Tobbe, Chief Information Officer, Livingston County, ktobbe@livgov.com

Infrastructure

A robust regional broadband system will provide Southeast Michigan with enhanced economic, educational, community, and social opportunities. However, accessibility, cost, speeds, and reliability of broadband infrastructure are significant and growing challenges, as along with the need for internet-enabled devices – particularly for remote learning. A community broadband roadmap can help to lay the groundwork for:

- Developing a community-wide vision;
- Identifying the benefits, gaps, and challenges of enhancing broadband service; and
- Embarking on an action plan needed to implement the vision and drive the success of the initiative.

As part of this process, communities will need to identify the broadband service providers. Additionally, they can determine key factors such as the price and speed of available services. The information gathered should also identify the location of current assets – or, in other words, where the physical network is located. Broadband infrastructure includes several high-speed transmission technologies. It is important for communities to engage in conversations with local internet service providers to determine current assets and future projects, planned upgrades, and maintenance plans. All of the items discovered during this stage can begin to lay the framework for identifying potential partner opportunities and future users. Note that broadband providers may include local governments, schools, colleges, and other institutions.

Engaging with stakeholders and obtaining local community input are key parts of the process. This is an opportunity to engage with a broader audience in order to discuss ideas and expand research to a wider public arena. It is important to get the community involved from the beginning and ask residents about their challenges to access and technology needs. This is also an opportunity to demonstrate how the community broadband roadmap will improve healthcare, strengthen civic participation, improve education, and fortify the economy and workforce development. Constituents should be able to understand that "broadband" is a means to solving problems and reaching goals — not just a technology service or amenity.

This is the point in the process to evaluate the technology, with the discussion turning to the pros and cons of various options. Providers may be using a spectrum of different broadband technologies, including:

- Digital Subscriber Line (DSL)
- Traditional cable modem
- Fiber-optic cable
- Fixed wireless
- Satellite
- Broadband over powerlines (BPL)

Fiber-optic cable is the fastest available technology, providing a download speed range of 250-1,000 Mbps and an upload speed range of 250-1,000 Mbps, but it is not available in many locations. However, communities need to be strategic and forward-looking with investment decisions by "future-proofing" infrastructure and recognizing the potential need to install fiber-optic broadband infrastructure to meet current and future needs.

To assist with developing a baseline assessment and identify future needs, residents need to be engaged. This will assist with determining the current technology that is being used locally, how needs are being addressed, and identifying what resource "gaps" exist. Each community will have its own specific needs that should be addressed. For example, how to introduce new infrastructure services while saving costs. As part of this process, future broadband requirements should be assessed for local households, institutions, businesses, schools, and local governments

Opportunities for collaboration – such as through a public-private partnership – should be considered within the policy and legal framework, as well as infrastructure coordination.

Finally, an implementation plan – or business model – must be created considering a number of factors, such as:

- Whether broadband plans can leverage existing projects or facilities;
- How to finance the project; and
- How to make the financing sustainable.

How has COVID-19 changed this issue?

The COVID-19 pandemic has raised the need for reliable and affordable broadband to a hyperawareness level. E-commerce, government, business, education services, and other communications have transitioned geometrically to the digital arena over the past two years. Local officials have taken a leadership position in identifying and advocating for their communities'

broadband needs, working with a range of stakeholders including school districts, downtown development authorities (DDA's), Main Street organizations, local businesses, homeowners, and more. The SEMCOG–MAC Broadband Action Team identified the main reason for expanding broadband infrastructure as support for remote work and remote learning – two of the many critical areas that have come to the forefront during the COVID-19 pandemic.

This hyperawareness has also brought with it great opportunity, making the timing right to advance efforts to develop robust community broadband systems. Resources to bolster broadband systems are currently available at an unprecedented level from both the federal and state governments. The American Rescue Plan Act identified broadband internet as essential infrastructure, and the *Infrastructure Investment and Jobs Act* provides funding to build out broadband networks in rural areas and historically underserved urban neighborhoods.

Impact on schools

Access to education for school-age children has been a major issue throughout the pandemic. School districts have been alternating between in-person and remote access education throughout the pandemic, depending on the current situation. Many school districts have been successful with making the transition from a technology perspective. However, there have been a number of challenges, especially with students in areas with underserved broadband access in urban and rural areas. Households throughout the region have struggled with broadband speed and reliability when many within a family are competing for broadband bandwidth for remote work and remote learning. Moreover, there are many households throughout the region where no computers are available to take advantage of a broadband connection.

Funding

There are unprecedented levels of funding available for broadband infrastructure, access to services, and devices. Some of the most recent funds include:

- The Infrastructure Investment and Jobs Act (IIJA) – $65 billion for broadband
- Reconnect Loan and Grant Program – $1.15 billion (loans and grants)

- Coronavirus State and Local Fiscal Recovery Funds – $350 billion
- Coronavirus Capital Projects Fund (from American Rescue Plan Act, or ARPA) – $10 billion
- Emergency Broadband Benefit Program (from ARPA) – $3.2 billion
- Rural Digital Opportunity Fund Phase II – $20.4 billion over ten years

Source: https://connectednation.org/current-broadband-funding

Detailed information on funding for broadband in the American Rescue Plan Act (ARPA) and the Infrastructure Investment and Jobs Act (IIJA) can be found in Appendix B.

Case Studies from Southeast Michigan

Lyndon Township Fiber-Optic Network

Lyndon Township's initiative to provide broadband to residents in the absence of private investment resulted in the passage of a 2.9 mill bond for 20 years.

A community survey in 2016 found that 67% of residents thought that broadband was very important. Only 10% of people thought it was "not important." The township tried to get a private company to build broadband in the township but did not get any response to an RFP. A grassroots organization of residents worked to build community support for a fiber-optic network. The township went from 95% unserved to 100% served by 1 Gbps fiber.

The township developed a public-private partnership with Midwest Energy and Communications (MEC), a nonprofit electrical cooperative. MEC sets the rates and residents pay MEC directly for services. Property values increased by 3.1% - 7% with broadband. Municipally-owned models can maximize long-term public benefits. More information can be found at www.lyndonbroadband.org.

Contact: Ben Fineman, Lyndon Broadband Oversight Committee, ben@lyndonbroadband.org, 734-417-0811

Crown Castle Small Cell Deployment

Crown Castle is a private company that has been working with communities across the state to increase wireless network coverage and capacity through installation of small cell antennas in public right-of-ways (on utility poles, streetlights, traffic lights, etc.). This increases coverage and capacity of wireless networks and has resulted in increased connectivity across the region. For more information about Crowncastle's support for communities, visit www.crowncastle.com/communities

Contact: Siely Joshi, Government Affairs Manager, Crown Castle, 734-657-4771, siely.joshi@crowncastle.com

DTE Energy - Joint Use Operations

DTE assists third parties with deployment of their fiber backbone, macro antenna networks and 4G/5G infrastructure. It has a well-established and efficient process to provide third-party access

to installing broadband equipment on its infrastructure of over a million distribution poles across Southeast Michigan. DTE facilitates access to purpose-built structures and ITC transmission towers for macro-antennas and works with the broadband providers to understand their needs to afford them speed-to-market.

Contact: Pina Vyas, DTE Energy - Joint Use Operations, pina.chhaya@dteenergy.com, 313-235-0532

Ali Tellaih, DTE Energy - Joint Use, Asset Maximization & Engineering, ali.tellaih@dteenergy.com, 313-235-4323

Farmington/Farmington Hills Feasibility Initiative

A joint Municipal Broadband Task Force formed about four years ago by the City of Farmington and City of Farmington Hills to investigate the feasibility of citywide fiber-optic infrastructure build-out across both cities. The cities built on existing collaboration successes that include a school district and library.

The broadband feasibility study stemmed from residents indicating they were dissatisfied with their internet choices. The business community response was mixed but indicated that better internet would enable them to consider expansion of business services. The initiative focused on economic access; competitive landscape; and improving options for broadband. The cities partnered on a study through an RFP process. The assessment showed 86% of the population has access to broadband, but 46% did not like the service due to speeds, service, or billing problems. Businesses were also dissatisfied, and two-thirds said they would change providers if a better service was available. The data also enabled development plans for improving city services using sensors and other technology for parking, public works, and parks. One takeaway the need for counties, state, regional players need to work together to put the resources in place and get past the data collection stage.

More information can be found at: https://www.fhgov.com/government-business/current-programs-initiatives/municipal-broadband-committee

Contact: Joe LaRussa, Mayor ProTem, City of Farmington, jlarussa@farmgov.com

Macomb Community College – Wi-Fi Access for Students

When education institutions were forced to pivot to remote education, some students were unable to access their classes due to lack of access to WIFI. Macomb Community College made WIFI accessible in some areas of parking lots at both main campus sites. Hundreds of students used this service in the first few weeks, resulting in a decision by the college to use CARES funding to order new permanent equipment that increased service levels threefold. Even after the college began in-person classes, many students and even community members continued to use this service, rather than school buildings. The College also provided hot spots to students who were unable to get to campus. As a result of this service, students who were moved to online classes and not able to gain access were provided two different ways to get connected and successfully complete their classes.

Contact: Nicole McKee, Macomb Community College, mckeen@macomb.edu

Digital Literacy and the Digital Divide

Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.

The digital divide is the gap between populations who do not have access to computers or the internet at home and those that do. Populations that are less likely to have internet at home include:

- Black and Hispanic households,
- Those with lower educational attainment,
- Lower-income households,
- Rural residents, and
- Elderly individuals.

Development of digital literacy skills begins to increase their perceived value of the importance of a computer, other digital devices, or the internet. Digital literacy can enable more full participation in the outside world. It can mean more inclusive and equitable access to education, medical services, community engagement, and work. Access is necessary in order to gain or utilize digital literacy skills. Not having access to reliable internet service and/or a device is what keeps people from crossing the digital divide.

The digital divide reinforces inequities for low-income and minority households. The need for increased digital literacy is imperative for students, employees, and seniors to thrive. According to the FCC, the total count of those in the country lacking access to the minimum standard of internet service was 21.3 million in 2019 and 14.5 million in 2020. However, other organizations such as Broadband Now suggest this could be as high as 42 million based on their research and Microsoft maps indicate up to 120 million people are not able to access broadband at speeds of 25/3 mbps. Closing the digital divide and improving digital literacy gives broader access to essential services like telehealth services for physical and mental health issues, remote learning (sometimes the only education available), job access, and economic opportunity.

How has COVID-19 changed this issue?

COVID-19 quickly highlighted the vital significance of the digital divide and need for digital literacy. Telehealth was an essential lifeline during the pandemic – particularly with the surge in mental health consultations. Policies related to telehealth were expanded during the pandemic in many states.

The divide also has economic costs to local communities and beyond. Access to reliable internet is also a strong predictor of economic opportunity. Increased access and digital literacy would have resulted in more remote job opportunities as many were experiencing job loss due to health challenges, lack of transportation, shut downs, and lack of childcare. The shift to remote work creates an opportunity to spread talent and economic benefits across the country. Reliable internet is a strong predictor of economic opportunity. Creating inclusive and equitable access will enable people to fully participant in an economy that is also more inclusive and equitable.

Nearly half of Americans without at-home internet were in Black and Hispanic households. Up to 40% of disconnected K-12 students from minority communities struggle with insufficient digital literacy and language obstacles. Less than 20% of Black workers and only 16% of Hispanic workers were in jobs that could be done remotely.

Households across the country with students in grades K–12 have profoundly felt the distance created by the digital divide. The pandemic forced students and their families to adapt to remote learning. A quarter of all school-aged children — about 13.5 million in the U.S. — live in households without broadband access or a computer or tablet. Some students and families had access to a limited amount of Wi-Fi hotspots and devices like Chromebooks found at schools and libraries. Additional internet access could be found in some newly-created hot spot parking lots.

A report from the National Education Association found:

- School-aged children in households that are below the federal poverty threshold (53%) are much less likely than those above the poverty line (79%) to have access to both broadband and a computer.
- White school-aged children (80%) have better access than African American/Black (64%) or Hispanic/Latinx (66%) children. Just 50% of American Indian and Alaskan Native children have full access.
- Families who have a parent at home during times of remote instruction are more likely to have full access than those who do not (77% v. 71%).

Funding

In November 2021, President Biden signed into law the Infrastructure Investment and Jobs Act. The $1.2 trillion package includes $65 billion for broadband access, affordability, and adoption. This funding is both historic and should help narrow the divide, specifically through the Digital Equity Act. This new funding is focused on implementing training programs that teach communities skills to access digital tools and provide technology to people most in need (including low-income, individuals with disabilities, and rural residents) to access broadband services.

Additionally, the $14.2 billion Affordable Connectivity Program (ACP) extends the Emergency Broadband Benefit (EBB) program introduced in the American Rescue Plan Act provides eligible households with a discount on broadband service and connected devices, so that they can connect to jobs, healthcare, and virtual classrooms.

Case Studies from Southeast Michigan

City of Detroit: Closing Detroit's Digital Divide:

Connect 313 is a city-wide, data-driven, smart cities, digital inclusion strategy with the goal of providing Detroiters with broadband access and devices by 2024. It is a collaborative arrangement between the City of Detroit, Rocket Companies, Microsoft, and the United Way of Southeastern Michigan. Its goals are to collect data on access to technology; invest in community centers and neighborhood hubs; and increase digital literacy. It has engaged the community for input and feedback. The *Connecting Seniors* initiative is one of Connect 313's projects to encourage access to telehealth services in collaboration with Wayne State University and Focus: HOPE as well as other partners by providing 8,000 devices to connect seniors with telehealth resources and other essential services.

Contact: Autumn Evans, Deputy Director, Connect 313 autumn.evans@detroitmi.gov

City of Sterling Heights: Expanding Digital Literacy through Community Anchor Institutions

Public libraries are trusted government service providers in Michigan with 386 public libraries, 255 library branches, and 11 bookmobiles that collectively served over 33 million visitors in 2020. Libraries are helping to bridge the digital divide by stepping up to provide service and devices that enable residents to access telehealth services, job applications and interviews, and other essential services in a digital environment.

During the pandemic, Sterling Heights Library provided wired internet access and personal computers for residents to use in the library; provided wireless internet access in the library building and in the parking lot and outdoor spaces; loaned Wi-Fi hotspots and Wi-Fi enabled tablets (funded by CDBG);and provided access to physical and digital educational and entertainment resources at no additional cost. In addition, the library conducted classes on using library research databases, using Google, getting an email account, using social media, and becoming proficient in Microsoft products.

During the early months of the pandemic, the library's social distancing and restrictions for in-person visitors meant that many patrons used curbside services (or walk-up curbside for those

without their own vehicles). While people could access devices and instructions, the library was not able to provide technical support for Individuals who needed more personalized assistance.

Contact: Tammy Turgeon, Library Director, City of Sterling Heights, tturgeon@sterling-heights.net

Oakland Schools: Improving Digital Literacy and Access for Students

Oakland Schools ISD provided regional technology services to seven out of 28 school districts before the pandemic. During the pandemic, this was opened up to all districts. It also provided technical support to students and parents. The digital divide has been a challenge for many years, but the pandemic exacerbated the issue. About 32% of children did not have internet access at home due to affordability or lack of reliable internet. The ISD provided 200,000 devices and focused on improving digital literacy through technology integration. Technology had previously been seen as a separate service, but the pandemic highlighted the need to embed it in every aspect of learning and all subject areas.

Digital literacy in children is about building the mental structure to think more broadly. Among the initiatives adopted are working in collaboration with other county-based organizations. *Literacy Essentials Oakland* is developing literacy coaches to help teachers develop literacy skills among students. Books are available in both hardcopy and digital versions so that even the youngest children have access to digital materials. Literacy is an equity issue and digital literacy is further expanding inequities. Changes are needed to the E-Rate program to fund internet services at home – not just in public buildings and schools.

Contact: Tammy Evans, Executive Director – Technology Services, Oakland Schools, tammy.evans@oakland.k12.mi.us

Michael Yocum, Assistant Superintendent, Education Services, Oakland Schools, michael.yocum@oakland.k12.mi.us

Verizon Innovative Learning

Millions of students across the U.S. lack the connectivity, technology, and skills required to thrive in today's digital economy. Verizon Innovative Learning (VIL) is a transformative education program designed to help foster digital inclusion through access to technology and quality STEM education. It offers two programs for schools with demonstrated need. With the 1:1 Device Model, schools receive free devices with data plans so students have access both in- and outside of school. With the Hotspot Model, schools receive mobile hotspots with data access and professional development for teachers. In a 2020 Westat survey, 92% of teachers said that the VIL program has helped prepare them to teach remotely; 84% said that the program enhanced student engagement; and 59% of students believe assignments are easier when using a device.

Contact: Tupac Hunter, State and Local Government Affairs, Verizon, tupac.hunter@verizon.com

Washtenaw Digital Literacy Project Partnership

Within the eastern part of Washtenaw County, there is a growing number of families who lack access to devices as well as the knowledge necessary to navigate the ever-changing world of technology. The Digital Literacy Project is a partnership with Washtenaw Community College, the City of Ypsilanti and Comcast that provided laptops to families of participants of the college's Summer Learning Experience at Parkridge Community Center along with digital literacy training and access to Office365 software. Those who were in need of internet were connected with Comcast's low-cost program. Approximately 25 families (around 60 people) now have access to computing devices, a greater knowledge and understanding of emerging technologies and low-cost Internet as they navigate hybrid and/or virtual learning. Projects like this can be scaled and sustained with additional funding and commitment to digital literacy by education, government, and business to help residents prepare for future technological improvements.

Contact: Brandon Roderick Tucker, Associate Vice President, Washtenaw Community College, brtucker@wccnet.edu, 734-677-5087, www.wccnet.edu

Policy Framework

SEMCOG and MAC convene local governments, education leaders, organized labor, and the private sector to set a regional course for high-quality infrastructure and an enhanced quality of life. For over five decades, SEMCOG has demonstrated – along with our local members and partners in state and federal government – that Southeast Michigan can best achieve these goals when we move forward together. With the pandemic highlighting the importance of access to reliable and affordable broadband, these partnerships have become more important than ever.

Federal Policy

While infrastructure has traditionally been defined at the federal level to include roads, bridges, and water, this has been notably expanded to include broadband. Provisions in both the American Rescue Plan Act (ARPA) and Infrastructure Investment and Jobs Act (IIJA) support broadband investment on a scale never seen before.

ARPA provides funding that may be used for broadband infrastructure via the Coronavirus State and Local Fiscal Recovery Fund. These funds are allocated to cities, townships, counties, and states to expand broadband access into unserved areas. These areas are defined as having connection speeds lower than 25 Mbps download/3 Mbps upload. However, this funding stream does not address areas that are considered underserved: less than 100 Mbps download/20Mbps upload.

ARPA also includes a Capital Projects Fund, an allocation directly to state governments to address many challenges laid bare by the pandemic, especially in rural America, tribal communities, and low- and moderate-income communities. The purpose of this fund is to help to ensure that all communities have access to the high-quality modern infrastructure, including broadband. While these funds are not focused specifically on broadband, the guidance issued by the Department of Treasury indicates strong eligibility for using these funds on broadband deployment. The State of Michigan is currently working to designate authority for those funds, with a statewide plan due in September 2022 as a condition of the funding.

The IIJA allocates funds via block grants to the states, which will deliver $65 billion to help ensure that every American has access to reliable high-speed internet through investment in broadband infrastructure deployment. These funds are also aimed at lowering prices for internet service and help close the digital divide so that more Americans can afford internet access. Initially, $100-million-per state was anticipated; however, with the release of new FCC broadband maps expected in 2022, specific allocation of funds for each state is yet-to-be-determined.

In total, Michigan is expected to receive an estimated $1 billion in federal resources to address broadband challenges. The bulk of this funding will be allocated through the IIJA block grant program, Additional funding allocations will address issues of digital equity and literacy.

State Policy

Critically, local communities have been left out of state funding programs aimed at addressing broadband challenges. ARPA guidelines require that all entities are eligible for funding while increasing the definition of unserved areas and the speeds required to be installed if those funds are to be used. The state's primary funding mechanism for broadband deployment, the Connecting Michigan Communities (CMIC) grant program, is currently available only to private sector ISPs. Importantly, if ARPA funds are to be appropriated through the CMIC program, it will need to be updated to include local governments and broadband authorities. In short, the current

legislative framework for CMIC is incompatible with the requirements of the federal funds allocated to the state for broadband.

Furthermore, it is essential that private, public, and non-profit partners are able to access federal funds and collaborate on implementation. The state's *21st Century Infrastructure Commission Report* (2016) and the *Michigan Broadband Roadmap* (2018) both noted that the state would benefit from establishing a single point-of-contact to help both Michiganders seeking connections and the ISPs seeking to provide them. Leveraging the findings of these reports and the need for collaboration, Governor Whitmer established the Michigan High-Speed Internet Office (MIHI) in June 2021. MIHI creates a single office within state government to comprehensively address the digital divide. The aforementioned federal funding allocations to the state from ARPA and IIJA can support the efforts of this newly-created office.

With MIHI poised to develop a statewide broadband plan and efficiently and effectively administer the aforementioned federal funding, the state will be in a better position to support communities as they seek to bridge the digital divide and deploy broadband to unserved and underserved communities. In the short term, the primary challenge is to ensure that the state and local governments are prepared to most effectively utilize these federal resources when they become available. MIHI is currently working to update the *Michigan Broadband Roadmap*, ensuring that data and assumptions are correct by incorporating the new developments that have occurred since then.

Regional and Local Policy

While not all communities face the same broadband challenges or are at the same stage of identifying and implementing solutions, there are many excellent examples across the state. From a regional perspective, sharing best practices and successes is an excellent way to grow partnerships across communities and sectors.

For instance, the Michigan Broadband Alliance is helping communities address their broadband needs in partnership with the Merit Network, a 501c3 non-profit. Merit helps communities in Michigan address broadband through their Michigan Moonshot Initiative. This framework incorporates a number of steps, starting with education, how to get started, planning, and building and running the program.

Often, a successful approach for unserved and underserved communities is to work toward providing common, open-access infrastructure that can be utilized by multiple service providers. Installation of a common fiber-optic infrastructure network that can be used simultaneously by multiple ISPs can enhance competition, thus improving service and driving down prices. Data security and privacy are significant issues to consider when installing this type of open-access fiber infrastructure. Fortunately, local governments enjoy a high level of trust from residents pertaining to infrastructure governance and data policies. Because the public already entrusts local governments with information ranging from water bills to public safety to library borrowing, data governance considerations are critical but not insurmountable elements to publicly owned broadband infrastructure.

Incorporating broadband infrastructure into regional and local asset management plans can be a crucial step toward effectively and efficiently deploying broadband infrastructure. SEMCOG continues to champion infrastructure asset management and coordination. While this has historically focused on transportation and water infrastructure, SEMCOG has been facilitating regional infrastructure coordination discussions that include private sector utilities and broadband. The resulting SEMCOG Capital Improvement Project Coordination Tool will provide a longer 5-

10 year outlook for the region's infrastructure. One important outcome of this work will be to foster a "dig once" approach to infrastructure projects, which entails timing planned infrastructure projects to minimize disruptions to communities and other infrastructure assets.

Partnerships among communities and private utility providers are also crucial and present opportunities for broadband deployment. Often, utility poles can be used to support additional broadband infrastructure.

Chapter 4: Goals, Policies and Actions

Policy Recommendations

High-speed broadband should be accessible to homes and businesses across Michigan to enhance community and economic development, improve quality of life, provide access to education and life-long learning opportunities, and support remote work demands.

Goal 1: Expand High-Speed Broadband Availability throughout Southeast Michigan

a. Prioritize federal and state funding to fill gaps in rural and underserved areas in the region.
b. Expand eligibility for Connecting Michigan Communities grant program to local governments, school networks, and non-profits.
c. Remove barriers in the Michigan Telecommunications Act that make it difficult for public entities to provide or partner to provide broadband service.
d. Expand the definition of Eligible Telecommunications Carriers to include non-traditional applicants such as public-private partnerships or open access networks.
e. Enable electric cooperatives and electric companies, as well as public-private and multi-community partnerships to bid for and develop broadband networks.
f. Focus funding on development of high-speed fiber optic networks to ensure long term solutions for broadband service.
g. Plan for new infrastructure at 10 gigabit per second (Gbps), with <100 milliseconds (ms) latency, and no data caps wherever physically feasible to support community and economic development.
h. Require engagement of **all** community stakeholders when planning new networks to establish actual needs in the community.
i. Ensure coordination with local community plans when developing or expanding private networks.

Goal 2: Improve data on broadband availability and access to reflect current conditions with accuracy

a. Fund a statewide broadband mapping initiative to develop maps that illustrate broadband availability, capability, and speeds throughout the state.
b. Provide grant funding for local units of government to conduct community and regional broadband needs analysis.
c. Incentivize internet service providers to share more detailed data on current installation and future development plans.
d. Encourage all infrastructure owners to participate in the Michigan Infrastructure Council (MIC) “Dig Once” Project Portal and/or SEMCOG’s Capital Improvement Project Coordination Tool for infrastructure coordination to increase efficiency and limit disruptions for development, maintenance, and updates to various systems (water, gas, roads, broadband, etc.).

e. Insist on accurate coverage data and access data collected that reports current and real-world speed tests.
f. Allow applicants for state and federal grant programs to submit locally collected data from community surveys and speed tests.
g. Update the federal definition of broadband to 100/100 mbps to address increased technology use and future needs.

Goal 3: Ensure equitable access to broadband and support digital literacy efforts for students, seniors, and households with limited access to resources

a. Provide broadband-supported devices to all individuals or households below the ALICE (Asset Limited Income Constrained Employed) threshold.
b. Expand access to technology-based services.
c. Support efforts to provide innovative and user-friendly web-based learning and training tools.
d. Encourage all providers to participate in federal broadband programs such as the Affordable Connectivity Fund for low-income households and ensure that service speed and reliability are consistent with advertised levels.
e. Encourage K-12 and Higher education institutions to share capacity and connections with surrounding neighborhoods and communities.

Goal 4: Coordinate broadband efforts at the State level to support broadband development for community and economic development

a. Make funding of the Michigan Office of High Speed internet a priority to:
   - Coordinate all types of infrastructure – reducing disruptions in communities;
   - Increase efficiencies and streamline statewide broadband development;
   - Prioritize areas and issues to meet service needs across the state; and
   - Ensure that all stakeholders are engaged in decisions and able to access resources.
b. Evaluate success of funding awards with performance measures such as speed, service, and affordability.

Next Steps

Future Work and Products

Based on the priorities identified by the Action Team, the next steps are to develop products that help fill the gap in broadband availability and access. These will include:

- Communicating best practices through story maps, blogs, videos;
- Developing webinars on and identifying funding for conducting feasibility studies, building partnerships, and data collection;
- Coordinating technical assistance for communities developing broadband infrastructure and programs; and
- Working with the legislature and policy makers on implementing the policy recommendations.

For more information on broadband from SEMCOG/MAC, please visit https://semcog.org/broadband

Appendices

The following resources may be helpful to local governments and other stakeholders for expanding broadband in the region.

- Appendix A: Community Broadband Preparedness Checklist
- Appendix B: Funding for local governments and other public entities
- Appendix C: SEMCOG/MAC Pulse of the Region Survey results
- Appendix D: Broadband Resources
- Appendix E: Partners

Appendix A: Community Broadband Preparedness Checklist

These checklists provide ideas for identifying questions needed to begin developing or expanding broadband in your community.

What is your focus of your community's broadband project?

A. _____ Develop new broadband infrastructure
B. _____ Expand or improve quality, speed and reliability of broadband

A. Develop Broadband Infrastructure (check the areas below that your community has or is actively talking about)

☐ 1. Are any parts of your community served by an Internet service provider?

☐ 2. Have residents and businesses expressed interest in the need for internet?

☐ 3. Have you carried out a survey of residents about their **level of interest** in having broadband – either privately provided or municipal?

☐ 4. Have you communicated with Internet service providers about the possibility of developing internet to meet the needs in the community?

☐ 5. If there is no private sector interest, is there support for pursuing Municipal broadband?

☐ 6. Does the community have the capacity and expertise to develop broadband infrastructure?

☐ 7. Have you communicated with other communities, the County or other stakeholders to discuss the process and resources needed to develop municipal broadband or to partner on a project?

☐ 8. Have you identified financial resources and a technology consultant to help navigate the process?

☐ 9. Have you identified a team made up of community officials, residents and businesses, engineers, lawyers, and technology and financial professionals to lead the effort?

☐ 10. Have you developed a plan for broadband that details the goals, outcomes, costs, leadership, process, technology, and communications strategy?

Once you have a plan for your community or a group of communities that identifies the resources needed, you should be ready to begin developing or seeking funding to undertake the project.

B. Expand or improve quality, speed and reliability of broadband (check the areas below that your community has or is actively talking about)

☐ 1. Have residents and businesses expressed dissatisfaction with availability, quality, speed and reliability of broadband with their home internet?

2. Are the problems:

☐ community wide?
☐ in certain parts of the community?
☐ related to a particular service provider?

3. How many internet service providers are operating in your community?

☐ 1 ☐ 2 ☐ 3 or more

☐ 4. Have you communicated with Internet service providers about the challenges identified?

☐ 5. Have you been able to develop a collaborative solution to the problem?

☐ 6. Has there been any improvement in the service?

☐ 7. Have you communicated with other communities, the County or other stakeholders to discuss the process and resources needed to develop broadband or discuss a potential joint effort?

☐ 8. Does the community have the interest, capacity, and expertise to develop broadband infrastructure?

☐ 9. Have you identified financial resources and a technology consultant to help navigate the process?

☐ 10. Have you identified a team made up of community officials, residents and businesses, engineers, lawyers, and technology and financial professionals to lead the effort?

☐ 11. Have you developed a plan for broadband that details the goals, outcomes, costs, leadership, process, technology, and communications strategy?

Once you have a plan for your community or a group of communities that identifies the resources needed, you should be ready to begin developing or seeking funding to undertake the project.

Appendix B: Funding

Federal Funding

Broadband infrastructure is largely built, owned, and operated by the private sector. However, the U.S Department Agriculture has long provided grants, loans, and loan guarantees for underserved or unserved rural areas where the private sector has been less likely to invest due to the increased costs of development in geographically challenged or less populated areas. Programs such as the Community Connect Broadband Grants and the ReConnect program help cover the cost of development or improving facilities in eligible rural areas.

The Federal Communications Commission's (FCC) Universal Service Fund includes a number of grants and loan programs "designed to promote the availability of quality telecommunications services for all consumers, including those living in low-income, rural, insular, and high cost areas at Just, reasonable and affordable rates…" These programs provide funding to eligible telecommunications companies (ETCs) to provide services in unserved or underserved areas. Two specific programs that have been used in Michigan are the Universal Service Schools and Libraries program (Known as E-Rate) and the Rural Digital Opportunity Fund (RDOF). E-Rate provides discounts of 20-90% to schools and libraries for telecommunication and broadband services, enabling virtually all schools and libraries to be connected to broadband, at least within the buildings.

Two other departments also provide funding that can be used for broadband deployment. The U.S. Economic Development Administration's Facilities and Public Works Program and the U.S. Department of Housing and Urban Development's Community Development Block Grant program, which can be used for increasing access through acquiring, installing or improving networks.

Since the beginning of the pandemic, several new sources of funding have been made available by the federal government for broadband development and access to internet service including the Consolidated Appropriations Act of 2021, American Rescue Plan Act (ARPA), and the Infrastructure Investment and Jobs Act (IIJA). The Consolidated Appropriations Act created the Emergency Broadband Benefit (EBB) program, which provided $3.2 billion for subsidized internet subscriptions and discounted devices for eligible households. These included low–income households and others that qualified for a number of public assistance programs.

American Rescue Plan Act

The American Rescue Plan Act provides several programs to states and communities that are either specifically designated for or can use for broadband deployment. These include the ARPA Coronavirus Capital Projects Fund, which provides $10 billion to states, territories, and tribal governments for infrastructure and devices, and the ARPA Emergency Connectivity Fund which provides $7.2 billion in E-Rate funding to schools and libraries for broadband infrastructure, devices, and subscription support. In addition, the ARPA State Fiscal Recovery Fund provided about $220 billion to states, territories and tribal governments and the Local Fiscal Recovery Fund provides $13 billion to metropolitan cities, nonentitlement units, and counties. Broadband infrastructure, devices, and subscription support are eligible uses of these funds, which must be expended by 2024. Local education agencies received $123 billion through the ARPA Elementary

and Secondary School Emergency Relief Fund – part of which can be used for devices, software, and connectivity through September 2023.

Infrastructure Investment and Jobs Act

This provides a total of $65 billion for broadband in four new programs administered by the National Telecommunications and Information Administration (NTIA) and additional funding to three existing programs within the NTIA and U.S. Department of Agriculture and Rural Development. About one-third of the IIJA funding will go to projects based on merit and two-thirds are formula-based for states. States must submit a draft proposal, an action plan, and a final proposal that focuses on unserved locations before underserved.

Program	Amount and end date	Eligible projects	Eligible Entities	Administrative Department
State Broadband Deployment Grant Program – NEW*	$43.45 billion - No end date	Broadband deployment of at least 100/20 Mbps to unserved (lacking 25/3 Mbps) and underserved (lacking 100/20); connecting community anchor institutions; data collection, mapping, and planning; installing broadband infrastructure or providing reduced cost broadband; broadband adoption; other NTIA approved use.	States are direct recipients but funds can be subcontracted to different entities that must show financial, technical, operational and managerial capabilities to complete projects. Each state will receive at least $100 million plus an additional amount based on unserved number of unserved locations.	NTIA – Rules required within 180 days
Affordable Connectivity Program – NEW*	$14.2 billion - No end date	Participating broadband providers will receive up to $30 per month for providing discounted service to qualified low income households for any plan offered to the public. Providers can also receive $100 for discounted devices for low-income households.	Broadband providers including cooperatives and Eligible Telecommunications Carriers (ETCs) that participate in universal service funding programs	NTIA – transition of 60 days from Emergency Broadband Benefit Program (EBBP) to Affordable Connectivity Program

Digital Equity Grant Program -NEW*	$2.75 billion Distributed over 5 years	States develop and implement "digital equity plans" to improve access, affordability and adoption among underserved populations: This could include providing fixed on wireless broadband service, encourage broadband adoption, provide workforce training, provide equipment and capability for low or no cost, construct, upgrade or operate public access centers through community anchor institutions, or other NTIA approved activities.	States, and their subgrantees. Certain broadband providers can apply for competitive grants. Must demonstrate technical and operational capabilities	NTIA
Middle Mile Infrastructure Grant – NEW*	$1 billion - Through Sept 2026	Competitive grant program for broadband providers to construct, improve, or acquire middle mile infrastructure. Prioritize connecting middle mile infrastructure to last mile networks that provide service to households in unserved areas. Applicants can use grants to any broadband infrastructure including towers, fiber, and microwave links.	Competitive grant for applicants who can demonstrate financial, technical and operational capabilities to carry out the project and operate middle mile networks.	NTIA – Rules required within 180 days
Tribal Broadband Connectivity Program (TBCP)	$2 billion – Existing Program – with additional funding	Grants for Broadband infrastructure deployment on tribal lands as well as remote learning, telework, and telehealth	Tribal Authorities	NTIA
ReConnect Program	$1.926 billion Existing Program – with	Loans, grants and loan/grant combinations to help construct or improve facilities to provide services to rural areas where at least 50%	State, local or territory governments; corporations; Native American Tribes; limited liability companies and	USDA

	additional funding	of households lack access to 25/3 Mbps. $5 million for establishing and growing cooperatives to offer broadband. Must provide at least 100/20 Mbps broadband service	cooperative organizations.	
Rural Broadband Program	$74 million – Existing Program – with additional funding	Loans to construct, improve or acquire facilities and equipment to provide broadband access in rural areas where at least 50% of households lack access to 25/3 mbps service	State, local or territory governments; corporations; Native American Tribes; limited liability companies and cooperative organizations.	USDA

State Funding

Connecting Michigan's Communities Program (CMIC)

CMIC is the largest state program for broadband service expansion into unserved areas in Michigan to achieve community investment and economic development. Unserved is considered lack of a provider within a census block. The requirement is to provide speeds of at least 10/1 mbps, but all the successful grants have been for projects providing much greater speeds. CMIC is administered by the Michigan Department of Technology, Management and Budget (DTMB). Local governments are not eligible to receive CMIC grants, but the grant encourages collaboration.

There have been three rounds of funding to date – either awarded or announced. Below are a list of projects in Southeast Michigan that have received grants.

CMIC Round 1.0

- Comcast/Armada Township in Macomb County for $3.3 m for 2Gbps/2Gbps
- Mercury Wireless/Lenawee, Monroe and Washtenaw Counties for $1 million for 100 Mbps/20 Mbps

CMIC Round 1.5

- Comcast/Manchester Township for 1000 Mbps/35 Mbps (recommended)

CMIC Round 2.0: Awarded July 2021. Projects must be completed by September 2025

- Comcast/Washtenaw County for $3,118,043 for 2 Gbps/2 Gbps
- Duke Broadband/Cottreville (St. Clair County) for $502,740 for 1000 Mbps/100 Mbps
- Duke Broadband/St.Clair Township (St. Clair County) for 1000 Mbps/100 Mbps

Appendix C: SEMCOG/MAC Pulse of the Region Survey results

SEMCOG and MAC co-sponsored a Pulse of the Region survey to establish public perceptions about the importance of broadband. There were 470 respondents, of which 367 were from Southeast Michigan. Respondents were highly-educated –(78% with a college degree or graduate degree); higher income (83% with incomes above $50,000); and older (65% above the age of 45).

Main Findings

- The biggest barriers to access are connection reliability, speed, and cost;
- Most respondents accessed high-speed internet at home or work using a laptop;
- It is considered extremely important for remote work/doing business and education for kids/adults;
- About 90% of respondents consider it an essential public service; and
- While there was much consistency on the main issues, there were considerable differences in experience of broadband across the region.

Biggest Barriers

Perception of barriers varied. Respondents in St. Clair County consistently identified cost, speed, and reliability of service as major barriers compared to other counties. Cost was a barrier for the fewest respondents in Wayne County (outside of Detroit), and speed impacted fewer respondents in Oakland County. Reliability was a lower concern in Monroe County.

Importance of Broadband

Respondents felt that broadband was important to deciding where to live. 77% of respondents from Monroe County and 48% of Wayne County (outside Detroit) strongly agreed it was important.

There was general agreement that broadband was very important for education for children and adults (ranging from 56% in Detroit and 81% in Livingston County) and for remote work (75% in Oakland and 92% in St. Clair). There was less agreement about broadband being very important for healthcare or keeping in touch with friends or family.

Satisfaction with Service

Satisfaction with reliability speed and affordability varied across the region. For reliability, only 8% of respondents in St. Clair County and 24% of Macomb were very satisfied, while 2% of Wayne County and 37% of Livingston County respondents were not satisfied. For speed, only 8% of St. Clair and 36 % of Wayne County (outside of Detroit) were very satisfied, while 5% of Wayne County and 34% of Washtenaw County respondents were not satisfied. For affordability, only 7% of Oakland respondents and 14% of Wayne County (outside Detroit) were very satisfied, while 18% of Wayne County and 40% of Macomb County respondents were not satisfied.

Appendix D: Broadband Resources

General

- Connected Nation
- Connected Nation/Michigan
- Michigan Moonshot Broadband Framework
- Michigan Broadband Roadmap
- Update to the Michigan Broadband Roadmap, 2021
- Michigan 21st Century Infrastructure Report

Data and Mapping

- How Much Broadband Speed Do Americans Need?
- Milliseconds Make Millions

Infrastructure/Local Government Concerns

- Four Critical Questions Every Community Should Ask Before Providing Public Support for High-Speed Internet Infrastructure
- NACo Broadband Taskforce Report: High Speed Internet is Essential for All Counties
- PROTEC

Digital Literacy and the Digital Divide

- Equitable Access to Broadband in Michigan

Funding

- Broadband USA: Guide to Federal funding of Broadband Projects
- Infrastructure Investment and Jobs Act Summary
- Merit Network Top Grant Funding Opportunities
- American Rescue Plan is the Broadband Down Payment the Country Needs

Appendix E: Partners

- AT&T
- Comcast
- Connecting Michigan Task Force
- Connected Nation Michigan
- Connect 313
- MERIT Network
- Protec
- Verizon

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