Connecting Communities Through Digital Equity

An Action Plan for State, Community, and Private and Institutional Partners
June 2022

Dear Friends,

As members of the Massachusetts Competitive Partnership’s “Growing the Innovation Economy Committee,” we understand that fostering and driving innovation rests on widespread internet access. Economic competitiveness and growth require an opportunity for all to participate in an increasingly digital economy—digital equity is a civic, business, and economic imperative.

In world that is increasingly online, access to the internet remains a major equity issue. In order to gain access to critical life services including education, healthcare, and government and social services, everyone needs reliable and high-speed internet service, the appropriate device, and digital skills. The COVID-19 pandemic accelerated and necessitated a sudden shift to online access for many essential services, further accentuating the reliance on internet access as integral to participation in society.

Even as safety measures and restrictions relax with a falling number of COVID cases and hospitalizations, and as many return to in-person work and schooling, digital access to services will continue to be the norm and will increasingly be required for public life. This means that across the Commonwealth, we need to better understand who lacks essential services, devices, and skills; address the systemic underlying barriers to access; and coordinate and empower communities to take action.

To undertake this challenge, we commissioned MassINC to conduct research to produce Connecting Communities through Digital Equity: An Action Plan for State, Community, and Private and Institutional Partners. This report provides a thorough and thoughtful look at the challenges of the digital divide and steps that we can take to build on the existing work and seek new and effective ways of collaborating to achieve digital equity.

This report provides a near-term action plan to close the digital divide across the Commonwealth. We believe that with coordinated state leadership and cross-sector collaboration centered on empowering local communities, Massachusetts will be best poised to take advantage of an unprecedented amount of incoming federal funding. It has never been more important that all in Massachusetts were connected to the internet, and we have never been as prepared to tackle that challenge.

With a keen understanding of the stakes and opportunity we have before us, we present the following report in hopes that it will build momentum and action around this effort. We have the plan, the tools, the resources, and the commitment in place—it is time to eliminate the digital divide and provide digital equity to everyone in Massachusetts.

Sincerely,

Anne Klibanski, M.D., President and Chief Executive Officer, Mass General Brigham, Cochair of MACP Innovation Committee

Roger Crandall, Chairman, President and Chief Executive Officer, MassMutual, Cochair of MACP Innovation Committee

Jeffrey Leiden, M.D., Ph.D., Executive Chairman, Vertex Pharmaceuticals

L. Rafael Reif, President, Massachusetts Institute of Technology
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Contents

Executive Summary ................................................................. 1

I. Now Is the Moment to Close the Digital Divide .......................... 4

II. Viewing Digital Equity in Three Dimensions ............................ 6

III. Working Together to End the Digital Divide ............................ 13

IV. An Action Plan for Advancing Digital Equity ........................... 21

Endnotes .................................................................................. 29
Executive Summary

Massachusetts has made progress closing the digital divide since the onset of the COVID-19 pandemic. Far more residents now have access to the internet and adequate computing devices, and have the knowledge to make use of these technologies. Yet, considerable work remains to cement our progress and reach tens of thousands more who still have not found pathways across the digital divide. Attention to this issue, combined with a once-in-a-generation infusion of federal resources, positions Massachusetts for success. Making the most of this unprecedented opportunity is absolutely critical to the social and economic future of our commonwealth.

Recognizing the imperative, this report provides critical information and ideas for civic leaders and policymakers. It presents a baseline three-dimensional view of digital equity in Massachusetts, frames the challenges and opportunities ahead, and outlines a near-term action plan.

A Three-Dimensional View of Digital Equity

To participate fully in today’s society and economy, individuals require internet access, device access, and digital skills. To inform digital equity planning, we take stock of where Massachusetts residents stand in each of these areas, extracting as much as possible from the limited information available today:

- **Internet access.** Roughly 1 in 10 (287,000) households in Massachusetts was without internet service when COVID-19 arrived; low-income residents accounted for 85 percent of those without connectivity. New federal subsidies make internet service more affordable for low-income households, but as with previous programs, uptake of this benefit remains a challenge due to lack of trust in internet service providers and other barriers to adoption. Only about 14 percent of eligible households have enrolled in the new federal broadband program, to date.

- **Device access.** At the onset of the pandemic, approximately 470,000 Massachusetts households did not have a laptop or desktop computer; about half of these households were low-income. The distribution of tens of thousands of devices reduced the number of residents without adequate computing devices by as much as one-third. However, sustaining these gains will be extremely difficult without a long-term strategy to efficiently service and replace these devices as needed.

- **Digital skills.** Digital skills are critical. Without such skills, residents are unable to make full use of technology, and many are reluctant to seek out opportunities to gain them because they underestimate the benefits. While limited data makes it difficult to accurately gauge digital skill needs, a rough estimate drawn from recent survey research suggests around 200,000 low-income households in Massachusetts require support in building their digital skills.

Geographically, households on the wrong side of the digital divide are heavily concentrated in urban areas. More than half of Massachusetts residents without home internet access live in Boston or one of the state’s 26 Gateway Cities. Given their acute needs, these communities have appropriately been a focal point for digital equity efforts in the pandemic response. The capacity they are building in order to tackle this challenge is beginning to extend regionally, to households in more suburban and rural communities.
Framing the Challenges and Opportunities

To permanently close the digital divide, Massachusetts must produce structural change with the unprecedented federal resources and other public and private funds flowing to meet this need. As outlined below, this will require overcoming systemic challenges and taking full advantage of key opportunities to maximize impact.

Systemic Challenges

- **Limited local capacity.** Many communities do not have sufficient capacity to overcome the digital divide. While federal recovery funds are flowing to municipal governments, our cities face an array of needs that have only intensified with the pandemic. There are many competing demands on local resources and not enough staff to deploy these funds quickly and effectively.

- **Insufficient data.** Communities lack information to develop digital equity strategies. Internet service providers (ISPs) rarely share the valuable information that they collect on subscribers and network performance. There is even less information available on digital skills and training needs across communities.

- **Lack of state-level coordination.** The Baker–Polito Administration has provided considerable leadership on digital equity over the past two years. However, more work remains. Massachusetts does not currently have an agency or high-level leader overseeing digital equity efforts at the state level, and the state lacks a coordinating cabinet to leverage resources and align efforts across state agencies.

Opportunities

- **Cross-sector partnerships.** In recent years, models in which civic leaders join forces for collective impact have received considerable attention in the fields of community economic development, education, and health. Recognizing the efficacy of this approach, national digital equity experts see regional cross-sector partnerships as the foundation of an effective strategy to close the digital divide. Massachusetts has considerable experience deploying this approach to tackle other difficult challenges. Building on this history, two high-functioning regional digital equity coalitions have formed in Essex County and the Pioneer Valley.

- **Community participation.** Too often, well-intentioned social change initiatives fail because members of the affected population are not at the table. From digital navigators, who provide hands-on assistance helping people access available resources, to digital stewards, who build community networks and maintain and service devices, there are numerous leading roles for residents in digital equity coalitions that will contribute to their success while also furthering community economic development goals.

- **Private-sector expertise.** Massachusetts is home to some of the most sophisticated technology companies and research institutions in the world. Digital equity strategists must think creatively about how best to take advantage of this asset. These partners are already providing support and can make an even more invaluable long-term contribution by helping communities anticipate the challenges and opportunities presented by changing technology.

An Action Plan

Developed by MassINC and the Massachusetts Competitive Partnership, with input from a diverse group of digital equity leaders, this report lays out a near-term agenda to close the digital divide in Massachusetts. The plan includes a framework for state leadership, tools to empower communities, and roles for private and institutional partners.

Framework for State Leadership

- **Formally designate the Massachusetts Broadband Institute (MBI) as the state’s lead digital equity entity.** Massachusetts must expand the mission of MBI to include leading digital equity efforts across the state by adding this function to MBI’s enabling statute and revamping the organization’s governing board to reflect this new function.

- **Assemble a robust state digital equity plan.** To receive their full allotment of federal funds, states must first submit a detailed digital equity plan. This undertaking will help Massachusetts organize its broader efforts, including positioning MBI for long-term leadership on digital equity and stimulating activity at the local level in regions across the state.
• **Create a digital equity fund.** Last year, the legislature provided $50 million for digital equity efforts in a COVID-19 recovery bill. The Executive Office of Housing and Economic Development should delegate the administration of this fund to MBI, giving the agency access to a portion of these dollars to increase its staff capacity. MBI should grant resources from the fund for a broad range of digital equity activities. In addition, MBI should sub-grant a sizeable share of these funds to regional intermediaries that have knowledge of grassroots groups in their communities and strong financial controls to administer state and federal dollars.

**Tools to Empower Communities**

• **Deploy digital equity fellows.** MBI can enhance local capacity by establishing a program that assigns digital equity fellows to support the building of coalitions and the development of local and regional digital equity plans in communities across the state.

• **Convene a municipal leaders institute on digital equity.** MBI can work with partners to convene a municipal leaders institute on digital equity. This forum will provide mayors, city/town managers, and other municipal officials with opportunities to learn about the latest digital equity issues, facilitate peer-to-peer exchange, identify challenges and opportunities early, and disseminate best practices quickly.

• **Convene a community of practice for digital equity coalitions.** Those who are on the ground leading digital equity efforts would also benefit from a learning community that provides a venue to share lessons learned, problem-solve, expand networks, and cultivate new thinking.

• **Establish data partnerships with ISPs.** Communities should pursue opportunities to partner with ISPs to generate timely information that will help them plan and gauge the success of their digital equity efforts.

**Critical Roles for Private and Institutional Partners**

• **Establish a commission on the future of broadband.** Broadband technology is now central to the economic competitiveness and social welfare of our commonwealth. A commission led by private industry and universities can explore market conditions today and propose market-based solutions to any current or future challenges they identify. This expert, objective, and independent insight is vital to ensuring that Massachusetts deploys with maximum impact the more than half a billion dollars it could receive from the federal government.

• **Convene a working group on digital devices.** Device procurement and servicing is another thorny challenge that merits attention from experts in state and local government, the private sector, and academia. A working group of public, private, nonprofit, and institutional partners can investigate potential device procurement, management, and financing solutions, and can provide valuable guidance to MBI and regional digital equity coalitions for how they meet this need, while also capitalizing on inclusive entrepreneurship and community economic development opportunities.

• **Issue digital equity planning grants.** MBI should expedite efforts to make resources available to communities for digital equity planning. The more work occurring at the local and regional levels, the more effective the state will be in preparing its digital equity strategy. Furthermore, communities have their own federal resources to deploy. Well-conceived plans can inform this local spending and put communities in a better position for additional federal funding that will be awarded competitively.

• **Build cross-sector partnerships to develop and pilot effective new models.** Digital equity innovation has the potential to significantly improve outcomes in community health, education, support for older adults, small business assistance, and workforce development. Private-sector partners can play a major role seeding new digital equity efforts, encouraging rapid prototyping, process improvement, and replication.

"What most people don’t understand is that without a computer, people are stuck and can’t take advantage of our digital world. It hits every facet of life. You need a computer to check your INS status. You need a computer to apply for a driver’s license and even to get vaccinated."

― Melissa Marrama, TEKCollaborative volunteer

An Action Plan for State, Community, and Private and Institutional Partners
I. Now Is the Moment to Close the Digital Divide

With changes brought about by the COVID-19 pandemic, the digital world now penetrates deeper into nearly every aspect of our society. We gather online to do our jobs, educate ourselves and our children, receive health care, attend religious services, engage in civic processes, and connect socially. Those without fast and reliable internet services, adequate computing devices, and the skills necessary to make use of these basic technologies face extreme social isolation and economic disadvantage. The need for a solution to the digital divide has never been more pressing.

Fortunately, we have two new openings to address this long-standing issue:

The first is unprecedented public investment. The Massachusetts legislature recently appropriated $50 million for digital equity efforts from federal recovery funds. These dollars can be deployed immediately. The bipartisan federal infrastructure package provides over $60 billion for broadband and digital equity investments. Massachusetts could receive more than half a billion dollars from this allotment over the next several years. An infusion of funding from the state’s 2019 Student Opportunity Act is another major development. This landmark legislation put school districts with high concentrations of underserved families in a far better position to sustain enhanced technology offerings.

Cross-sector partnerships are the second and equally valuable opportunity to leverage at this pivotal moment. Prior to the pandemic, efforts to close the digital divide were often narrow and led mostly by organizations dedicated to the issue. Today, leaders from a wide array of sectors are coming together to form collaborative digital equity partnerships. These initiatives are quickly marshaling resources to mount a multidimensional response to the digital divide.

In Massachusetts, such efforts are arising in many of our most disconnected communities, including the Gateway Cities. In part, this is because the need is undoubtedly greater in these lower-income communities. However, this pattern is also the byproduct of recent efforts to draw attention to the benefits of collaborative leadership for economic resiliency. Over the past decade, Gateway Cities have worked hard to cultivate this powerful form of social capital.

These urban centers are now extremely well-positioned to anchor regional digital equity efforts that benefit not just their residents, but also those in smaller neighboring towns with even more limited resources. Well-organized cross-sector partnerships can also tap into the wealth of knowledge held by academic and industry leaders located in Massachusetts.

As a strategy to capitalize on one-time federal investment, this collaborative approach holds enormous promise. However, considerable work remains to ensure that it produces durable solutions. Communities that have yet to establish local or regional digital equity partnerships must build them. Structures will be required to align large private-sector and institutional partners that have much to contribute. And the state must define the role it will play supporting these community-driven efforts, including by advancing complementary policy change.

With these tasks in mind, MassINC and the Massachusetts Competitive Partnership teamed up to draft this action plan. The analysis and recommendations presented in the pages that follow are informed by conversations with more than two dozen digital equity stakeholders, representing a diverse range of sectors and communities from across the state. They are also informed by recently published studies and interviews with several leading national digital equity experts.

The following section describes how the pandemic response informs our understanding of digital equity across three dimensions. Section III details the high-level opportunities and challenges leaders face as they work together to close the digital divide. The final section presents a plan of action, including a framework for state leadership, tools to empower communities, and roles for private and institutional partners.

“I think people don’t realize that now, in today’s world, having access to the internet is an essential need.”

— Felicia Pierce, North Shore Community Development Coalition
KEY TERMS

In the 2021 bipartisan infrastructure bill (H.R. 3684, Infrastructure Investment and Jobs Act), Congress defines digital equity as “the condition in which individuals and communities have the information technology capacity that is needed for full participation in the society and economy of the United States.”

Broadband describes high-speed internet access. It was initially used as a marketing term to differentiate between dial-up service over analog telephone lines and an “always-on” direct connection to the internet through cable, satellite, or fiber. In 2015, the Federal Communications Commission established a download speed of 25 megabits per second (Mbps) and an upload speed of 3 Mbps as the minimum data transmission threshold for services classified as broadband. However, because this floor is now too low to meet the needs of many U.S. households, and will be too low to meet the needs of most U.S. households in the future, Congress explicitly required in the bipartisan infrastructure bill that any broadband network receiving federal funds must meet a minimum threshold of 100 Mbps down and 20 Mbps up. Some states have also set standards. For example, Minnesota and Illinois will only invest in networks if they can easily be upgraded to speeds of at least 100 Mbps in both directions.

WILL BEAD ADVANCE DIGITAL EQUITY IN MASSACHUSETTS?

The $42.5 billion Broadband Equity, Access & Deployment (BEAD) Program is the major broadband component of the federal infrastructure bill. Each state will receive $100 million plus an additional allotment according to how many unserved households they contain. While initial estimates by William Rinehart at Utah State University suggest that this could mean more than $500 million for Massachusetts, the actual block grant could vary considerably based on rules currently being developed by the National Telecommunications and Information Administration (NTIA).

NTIA’s determinations will also have a heavy bearing on how much money the state can award to cities through the program. The enabling legislation calls for prioritizing unserved households (those without a 25/3 connection). Massachusetts has already spent nearly a $100 million in state and local funds wiring rural areas. At present, 98 percent of all households have access to 25/3 service. The cost of trying to reach the final 2 percent could quickly deplete the state’s BEAD funds.

If NTIA rules allow Massachusetts to proceed to the other two eligible uses—underserved service projects (i.e., locations without access to reliable 100/20 service) and anchor institution projects (i.e., schools, libraries, and hospitals without 1 Gbps service)—the state will be able to evaluate each proposal for BEAD funds on the merits, examining the complete cost-benefit proposition, including the implications of the proposed investment for digital equity.
II. Viewing Digital Equity in Three Dimensions

Experts describe the digital divide as a three-dimensional challenge. All individuals require access to reliable internet service, computing devices that are appropriate for a range of uses, and digital skills to understand the capabilities of today’s technologies and to make use of them to meet their needs. The pandemic exposed the degree to which many low-income residents struggle in one or more of these dimensions. At the same time, it has demonstrated that we can quickly take a major bite out of the problem, with concerted effort. We begin by taking stock of where things stand along these three divides.

Access to Reliable Internet Service

Over the past two decades, cities, towns, and the Massachusetts Broadband Institute (MBI) partnered with private internet service providers (ISPs) to extend internet service to every corner of the state. Now, all but a handful of households have the option to purchase internet service, making Massachusetts a national leader in broadband deployment. The primary problem is that many residents simply cannot afford internet service at the going rates. According to detailed data from the US Census Bureau, roughly 1 in 10 households (287,000) in Massachusetts was without internet service when COVID-19 arrived; low-income residents made up 85 percent of those without connectivity.²

While households without internet were once concentrated in rural areas, today they are mainly found in low-income urban communities. Half of households without internet service live in Boston or one of the state’s 26 Gateway Cities.

On average, 1 out of 6 (17 percent) Gateway City households lacks any form of access. This rises to around one-quarter of households in Lawrence, Fall River, and Holyoke, the most disconnected urban communities in Massachusetts (Figure 1). Often, Gateway City households without internet are clustered in a handful of neighborhoods. Lawrence, Lowell, New Bedford, and Pittsfield each have census tracts where more than 40 percent of households do not have internet service. Fall River has five tracts where between 40 and 55 percent of residents have no connection. Across the Gateway Cities, there are approximately 100 neighborhoods where more than one-quarter of residents lack access to the internet.

MassINC presented these worrisome gaps for the first time in a research report released at the onset of the pandemic.³ However, new analysis of data from Microsoft by the Metropolitan Area Planning Council (MAPC) suggests the problem is significantly larger, because a sizeable share of households with internet service do not operate at broadband speeds (Figure 2). This could be due to a variety of challenges, including inability to pay for a high-speed plan; outdated or incorrectly configured routers; inadequate wiring in the house or apartment building; wireless signal interference in dense areas; large households with high levels of simultaneous usage; or multiple households utilizing the same connection.

When we combine the census data on those without service with MAPC’s speed figures, it appears that more than one-third (37 percent) of Gateway City households are without broadband internet.³ In some communities, the figure is far higher: 50 percent in Lawrence, 54 percent in Springfield, 56 percent

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Figure 1: Share of Households Without Access to the Internet

[Graph showing distribution of households without internet access across Gateway Cities]

Source: American Community Survey, 2015–2019

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in Fall River, and 59 percent in Chelsea. MAPC analysts suggest the problem may be even larger than this data indicates, yet again, because a sizeable share of households with internet service do not operate consistently at broadband speeds. Furthermore, these estimates rely on the old broadband speed standards of 25 Mbps download and 3 Mbps upload. Recognizing that this threshold no longer reflects the requirements of most households, the 2021 bipartisan infrastructure bill restricts new federal investment to networks that meet a minimum speed of 100 Mbps download and 20 Mbps upload.

Many experts believe lack of competition in the broadband marketplace has made it harder for low-income residents to access reliable internet. The data in Figure 3 suggests that allowing providers to selectively enter markets based on municipal boundaries may contribute to this problem. Service is slower and more expensive, on average, in areas of Massachusetts with just one wired provider, which include Chelsea, Haverhill, New Bedford, and large swaths of Brockton, Fall River, Lowell, Springfield, and Worcester.

Prior to the pandemic, many ISPs did offer inexpensive programs to help offset these costs for low-income households. However, these plans often came with slower speeds and data limitations. Only a small fraction of eligible households participated, and many digital equity advocates complained that providers refused to share enrollment figures and join efforts to increase awareness.

Congress created the temporary Emergency Broadband Benefit (EBB) to help more low-income households access the internet during the pandemic. Over 90,000 Massachusetts households have taken advantage of this federal subsidy. More than half of these participants live in Gateway Cities. However, the EBB still only serves a fraction of those eligible. The average Gateway City uptake rate is just 18 percent; at 15 percent of eligible households statewide, participation rates outside of Gateway Cities are even lower (Figure 4).

This rate is close to national levels. Early reports indicate most households receiving the subsidy previously had broadband service. In some respects, it is not surprising that low-income families have sought out this benefit to maintain their access through the pandemic disruption. According to a recent MAPC survey of almost 2,000 residents living in Chelsea, Everett, and Revere, nearly 70 percent reported changing or canceling their internet service because it was too expensive, and almost half (47 percent) said their current internet plan was unaffordable.

In 2022, the EBB will expire, to be replaced by the Affordable Connectivity Program (ACP). Created by the 2021 bipartisan infrastructure bill, the ACP will provide low-income households with $30 per month to reduce the cost of internet service. While this is less than the EBB’s $50 monthly subsidy, it should be sufficient to cover the price of discounted broadband plans for low-income households that most ISPs now offer.

### Figure 3: Average Price and Speed by Number of Broadband Providers Offering Service in ZIP Code

<table>
<thead>
<tr>
<th>Number of Providers Above 25/3</th>
<th>Number of ZIP Codes</th>
<th>Average Cost of Lowest-Price Plan</th>
<th>Average Download Speed (in Mbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>182</td>
<td>$76</td>
<td>82</td>
</tr>
<tr>
<td>2</td>
<td>185</td>
<td>$47</td>
<td>102</td>
</tr>
<tr>
<td>3</td>
<td>84</td>
<td>$40</td>
<td>121</td>
</tr>
</tbody>
</table>

Source: FCC data compiled by BroadbandNow
With subsidies from the new ACP program and discounted plans increasingly available at higher speeds, we have a viable path to provide low-income households with the internet service they require. However, there are still two significant barriers to overcome.

First, eligible households must be made aware of the opportunity to receive service. This requires targeted outreach and, in many cases, overcoming substantial language barriers. Outreach efforts must also bridge gaps in trust. School districts, councils on aging, and others working to increase access have found that many low-income households and older adults in need of service do not open accounts out of fear that they will become indebted by teaser rates, late fees, or installation and equipment charges. Still, evidence suggests these barriers can be overcome. The Federal Communications Commission (FCC) provides access to detailed real-time data on EBB participation. These figures show substantial variation across communities. Nearly 30 percent of eligible households in Worcester have enrolled; in Fall River, just 15 percent receive the subsidy.

The second major issue is sustainability. Some households may have been reluctant to enroll in the EBB because of the temporary nature of the benefit. The ACP has been described as a permanent program, but that is not necessarily the case. The $14 billion that Congress allocated for the ACP is expected to last approximately five years. There is bipartisan support for the program, and there will be strong arguments for sustaining the subsidy if the program successfully increases adoption; however, the availability of this resource on an ongoing basis is far from guaranteed.

**Figure 4: Share of Eligible Households Receiving Emergency Broadband Benefit**

<table>
<thead>
<tr>
<th>City</th>
<th>EBB Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicope</td>
<td>29%</td>
</tr>
<tr>
<td>Worcester</td>
<td>29%</td>
</tr>
<tr>
<td>Pittsfield</td>
<td>28%</td>
</tr>
<tr>
<td>Springfield</td>
<td>24%</td>
</tr>
<tr>
<td>Brockton</td>
<td>19%</td>
</tr>
<tr>
<td>Holyoke</td>
<td>19%</td>
</tr>
<tr>
<td>New Bedford</td>
<td>17%</td>
</tr>
<tr>
<td>Lynn</td>
<td>17%</td>
</tr>
<tr>
<td>Fall River</td>
<td>15%</td>
</tr>
<tr>
<td>Boston</td>
<td>14%</td>
</tr>
<tr>
<td>Chelsea</td>
<td>14%</td>
</tr>
<tr>
<td>Fitchburg</td>
<td>14%</td>
</tr>
<tr>
<td>Haverhill</td>
<td>13%</td>
</tr>
<tr>
<td>Lawrence</td>
<td>13%</td>
</tr>
<tr>
<td>Lowell</td>
<td>13%</td>
</tr>
<tr>
<td>Salem</td>
<td>12%</td>
</tr>
<tr>
<td>Quincy</td>
<td>11%</td>
</tr>
<tr>
<td>Attleboro</td>
<td>10%</td>
</tr>
<tr>
<td>All Gateway Cities</td>
<td>15%</td>
</tr>
<tr>
<td>MA</td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: FCC claims data (as of Nov. 15, 2021) and American Community Survey, 2015–2019

**Figure 5: Share of Households Without a Laptop or Desktop Computer**

<table>
<thead>
<tr>
<th>City</th>
<th>Laptop Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lawrence</td>
<td>41%</td>
</tr>
<tr>
<td>Springfield</td>
<td>39%</td>
</tr>
<tr>
<td>Fall River</td>
<td>38%</td>
</tr>
<tr>
<td>Holyoke</td>
<td>37%</td>
</tr>
<tr>
<td>New Bedford</td>
<td>36%</td>
</tr>
<tr>
<td>Chelsea</td>
<td>33%</td>
</tr>
<tr>
<td>Lynn</td>
<td>33%</td>
</tr>
<tr>
<td>Brockton</td>
<td>31%</td>
</tr>
<tr>
<td>Lowell</td>
<td>30%</td>
</tr>
<tr>
<td>Worcester</td>
<td>29%</td>
</tr>
<tr>
<td>Chicope</td>
<td>29%</td>
</tr>
<tr>
<td>Pittsfield</td>
<td>26%</td>
</tr>
<tr>
<td>Fitchburg</td>
<td>25%</td>
</tr>
<tr>
<td>Haverhill</td>
<td>21%</td>
</tr>
<tr>
<td>Boston</td>
<td>20%</td>
</tr>
<tr>
<td>Salem</td>
<td>20%</td>
</tr>
<tr>
<td>Quincy</td>
<td>18%</td>
</tr>
<tr>
<td>Attleboro</td>
<td>18%</td>
</tr>
<tr>
<td>All Gateway Cities</td>
<td>18%</td>
</tr>
<tr>
<td>MA</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: American Community Survey, 2015–2019
Devices
Census data show 18 percent of households (470,000) in Massachusetts did not have a laptop or desktop computer at the onset of the pandemic. In Gateway Cities, the share was much larger, with 28 percent of households (nearly 200,000) lacking such devices. In Lawrence, more than 40 percent of households did not have computers. A similar share was without computers in Fall River, Holyoke, New Bedford, and Springfield (Figure 5).

A survey conducted by the MassINC Polling Group (MPG) in June 2020 found 16 percent of Gateway City families with school-age children did not have enough computing devices to meet the household’s needs. However, a follow-up survey in October 2020 found that only 9 percent of Gateway City families did not have a sufficient number of devices. This suggests school leaders were able to address almost half of the need in just a few short months.

In addition to schools, there have been several other notable efforts to increase access to devices during the pandemic. Households eligible for the EBB were offered the opportunity to receive a $100 subsidy toward the purchase of a desktop, laptop, or tablet. Nationally, approximately 11 percent of claimants have utilized this benefit. At this rate, approximately 13,000 EBB participants in Massachusetts will have utilized the device subsidy.8

With unemployment rates spiking, Massachusetts sought to help low-income job seekers access devices through the state’s network of 25 career centers. Together, they have issued more than 4,000 laptops (see box below). Massachusetts community colleges lent computers and provided grants for direct purchases, so that thousands of students could continue learning remotely.

Evidence is mixed about how much impact these efforts are having in reducing the device access gap. Nearly one-quarter (22 percent) of respondents to the recent MAPC survey of households in Chelsea, Everett, and Revere reported that they did not always have access to a computer in the home when they needed one. This is only marginally better than pre-pandemic community-level census data, which placed device ownership for these three cities combined at 27 percent of households.9 On the other hand, state-level data from the more recent 2020 American Community Survey (ACS) shows a 37 percent reduction in the number of households in Massachusetts without computing devices. This estimate appears to show remarkable change over a very short period; however, the Census Bureau urges caution when interpreting results from the 2020 ACS survey due to difficulty in sampling harder-to-reach households during the pandemic.10

While there can be no doubt that there are thousands of low-income residents who lacked computers prior to the pandemic and who now have them in their homes, there is currently no strategy in place to secure these gains. Already, there are signs of significant retreat. For example, most urban school districts that sent computers home with students for remote learning in 2020 have since returned the devices to locked closets at the end of each school day and throughout the summer months.

STEPPING UP FOR JOB SEEKERS DURING THE PANDEMIC
In January 2021, the Baker–Polito Administration launched the Mass Internet Connect program as a partnership between the Massachusetts Broadband Institute (MBI) and MassHire to help job seekers challenged by technology access. The program offers unemployed or underemployed job seekers in the MassHire program with digital skills training, cellular hotspots, internet subsidy referrals, and devices, as needed. As of January 31, 2022, the program has served 4,774 individuals, including helping 407 individuals with internet access through internet subsidy referrals or hotspots; distributing 4,151 Chromebooks; and providing 1,312 people with digital skills training. These services were offered to individuals of all ages, from every corner of the state. Mass Internet Connect surveyed participants, and respondents reported that the program helped them to access job listings (81 percent), create resumes (63 percent), build their digital skills (48 percent), and access online courses (47 percent). MBI and MassHire recently launched a pilot program with three career centers to train staff to serve as digital navigators who will provide one-on-one direct digital skills training to job seekers. This digital access program has provided critical services to some of the most vulnerable during the pandemic.
Digital Skills
In many regards, digital skills are far more important than internet connectivity and access to devices. Residents who lack these skills are often reluctant to seek out technology and unaware of how it can benefit them. Additionally, making online access and devices available to those without digital skills can potentially expose them to harm or extend structural inequities into the digital realm. However, we must also recognize that increasing access to computers and the internet positions residents to build digital skills. Throughout the pandemic, many organizations that work with low-income populations have found that their clients quickly acquired digital skills when they were provided with technology and help getting started.

This outcome is consistent with studies exploring the acquisition of digital skills. Researchers have demonstrated that we gain the capability to use basic technologies largely through self-learning. And when people build skills in one domain (e.g., playing video games), they transfer and enhance them in other domains (e.g., engaging in civic discourse). This “compound growth” confers great advantage to those who have access to technology to develop digital skills early.11

Recent research by Pew found that more than one-third (38 percent) of adults in the US with lower incomes are not confident using their computers, smartphones, or other electronic devices to do the things they need to do online.12 This estimate is in line with similar figures produced by survey research in Massachusetts.

The MassINC Polling Group’s 2020 survey included several questions whose answers offer an indication of digital skills among Massachusetts residents with school-age children. For example, one-third of low-income respondents reported difficulty using the computer systems required for remote learning, which is about double the rate of difficulty encountered by those with greater means. Perhaps most telling is the significant number of parents who do not use email: 1 in 5 low-income respondents.

MAPC’s recent survey of residents living in Chelsea, Everett, and Revere found that nearly half (48 percent) of those with internet service did not feel confident in their ability to resolve a problem with the connection, and more than one-third of respondents would like to learn more about how they could receive training in basic computer skills, such as using a keyboard and navigating the internet with a web browser. Among those who responded to the survey in a language other than English, nearly half (48 percent) reported a desire for basic computer skills training. If limited-English households...
THE CRITICAL WORK OF CONNECTING SENIORS

In an effort to combat social isolation during the COVID-19 pandemic, AgeSpan (formerly Elder Services of the Merrimack Valley and North Shore) partnered with Fidelity House to launch a digital access program for low-income seniors and individuals of all ages with disabilities. The program opened in summer 2021, providing computer tablets, data plans, and personalized technology training. After only six months in operation, the program has already received referrals for 300 individuals, approximately 25 percent of whom speak a language other than English.

During the intake process, AgeSpan asks users about their goals for connectivity. The primary objectives given are access to telehealth, participation in virtual community programming, use of video conferencing platforms such as Zoom for social connectivity, access to news and current events, participation in virtual worship services, access to continuing education, ability to pay bills online, and access to a variety of other services and information.

AgeSpan launched the program as a health equity initiative with support from the NiSource Foundation, the community support fund created in response to the Merrimack Valley natural gas disaster of 2018, in partnership with the Essex County Community Foundation. A digital training coordinator assesses the personal needs of each individual entering the program and provides customized skills training to ensure that each participant reaches their individual goals. The individualized attention allows AgeSpan to understand and mitigate any barriers that may prevent participants from succeeding. To date, the oldest participant in the program has been 95 years old. All participants have demonstrated a desire and capacity to utilize technology in ways that would be expected of any other age group.

in all Gateway Cities have similar levels of interest, this would amount to nearly 70,000 adults seeking basic digital skills.

However, all of these figures should be interpreted as the lower bound. As noted by the authors of the Pew study, sampling techniques likely underrepresent those with limited digital skills. While researchers use a variety of methods to address this challenge, even the most rigorous methodologies will have difficulty providing accurate measures of digital skills.

If one-third or more of the state’s low-income population lack digital skills, we can be certain that this issue is significantly contributing to the challenges Massachusetts employers face in filling job openings. Pre-pandemic studies found employment outcomes have become heavily contingent on digital skills. Finding and applying for most jobs requires the ability to navigate the web and complete forms online. Even in frontline service occupations that have not traditionally involved computers, day-to-day functions now increasingly call for some aptitude with digital technology. With increasing automation of low-skilled work, the pandemic is accelerating this shift.

The pandemic is also undoubtedly pushing more of civic life online. Previous research shows that digital skills allow for higher levels of civic participation, particularly among those who face socioeconomic barriers to engaging in person. Again, the pandemic experience validates the academic research. Online community forums held around issues related to the pandemic drew unprecedented levels of attendance from residents of all backgrounds. However, we must remember that this occurred when thousands of families were able to utilize computers and internet hotspots provided by local school districts.

The expansion of digital skills through Tech Goes Home (TGH) shows that it is possible to attain the scale required to reach one-third or more of the state’s low-income households. In 2021, this single nonprofit served nearly 5,000 students by partnering with community-based organizations to deliver 360 courses across 100 sites. TGH achieved this impact despite its limited Boston-area footprint. The organization did expand to Essex County over the past year and plans to grow throughout Eastern Massachusetts in 2022 (see box on p. 10).
LISC’s Digital Growth Accelerator Empowers Entrepreneurs of Color

LISC Boston has continued its good work to support small minority-owned businesses to thrive and grow during the COVID-19 pandemic. Building off its successes with the Beyond Six Feet Apart Accelerator model, which was funded through the Small Business Technical Assistance Program at Mass Growth Capital Corporation (MGCC), LISC has launched the BIPOC Digital Growth Accelerator program. This 7-week program leverages consulting teams and digital tools to empower minority-owned businesses to strengthen their core business, grow their capacity, and double their revenue. The consultant teams tailor the customized curriculum to meet the needs and opportunities of each individual business, and they recommend strategies such as e-commerce, digital marketing, and other low-cost customer acquisition and sales strategies. With digital empowerment tools, these entrepreneurs can transform their businesses and significantly expand their revenue potential. The program also connects businesses with other resources available to them, such as the lending, grants, and technical assistance programs available through MGCC. The digital growth accelerator has supported approximately 75 businesses and is working to partner with cities and regional organizations to expand, catalyzing localized small business networks throughout the state.

One recent graduate of the BIPOC Digital Growth Accelerator is Teresa Maynard of Sweet Teez Bakery. Maynard utilized her consulting support to focus her marketing on corporate gifting. With this shift in focus and the application of new digital tools, she saw her revenue grow dramatically.

“I have tried many business accelerators, but this one was different. My consulting team helped me create an implementation plan that’s easy to execute. The program transformed my business, and I am looking into opening my first physical location!”

— Teresa Maynard, owner, Sweet Teez Bakery
III. Working Together to End the Digital Divide

The once-in-a-generation funding available to close the digital divide will only have lasting impact if these resources are deployed in a manner that produces structural change. Interviews and working sessions with public and private-sector stakeholders surfaced high-level challenges that must be overcome to get to the root causes of the digital divide in Massachusetts. At the same time, these conversations can be characterized as exceedingly hopeful. There is near-universal agreement that the opportunities today vastly outmatch the challenges.

A. Challenges
Conversations repeatedly came back to three distinct challenges: limited local capacity, insufficient data, and lack of state-level coordination. Digital equity strategists must recognize that overcoming each of these issues is fundamental to success. Fortunately, none of these issues are particularly difficult to overcome, and there are already some clear signs of progress.

1. Limited Local Capacity
As the data presented above demonstrated, those without access to digital technology are heavily concentrated in Gateway Cities and low-income neighborhoods. Many of these communities lack capacity to address the challenge. At present, no Gateway City has a digital equity officer. Often, these responsibilities fall on a chief technology officer, whose primary concern is the operation and security of the websites and networks that municipal agencies rely on to perform everyday business. In some communities, librarians, who are already overstretched in serving poorly funded urban library systems, have assumed the role in the absence of other leadership. IT staff in school districts have also taken on a great deal of responsibility, but different governance and budgeting practices make it more difficult for these officials to lead coordination across municipal agencies.

Outside of government, Gateway Cities have limited access to private philanthropy or large corporate partners with the resources to mount a community-wide digital equity campaign. While federal recovery funds are available to these municipal governments and school districts, they face an array of needs that have only intensified with the pandemic. There are many competing demands on their resources and not enough staff to deploy these funds quickly and effectively.

As a result, most Gateway Cities are early in their digital equity planning efforts, and there is some question as to whether all municipal leaders fully recognize the urgent need. Rather than making equity central, many are focused narrowly on improving the performance of networks.

However, some communities have found strategies to overcome limited capacity. Chelsea, Everett, and Revere joined forces with MAPC to develop a detailed digital equity plan (see box on p. 15). MAPC provided analytical support, including producing the detailed resident survey referenced earlier. Everett is in the process of hiring a chief digital equity officer to lead implementation of the plan.

The ability of Gateway Cities to leverage resources and lead coordinated efforts to tackle digital equity is paramount, not just because they contain half of the state’s disconnected population, but also because neighboring communities generally have even more limited capacity. Gateway Cities can leverage their increasing technical capabilities to anchor regional solutions.

2. Insufficient Data
Communities lack information to develop digital equity strategies. Most have little understanding of who cannot access the internet and why. The data that ISPs collect on network performance and on the reasons for slow speeds and intermittent service is inaccessible. There is even less information on digital skills and how the needs for training vary across communities. However, communities are finding creative ways to overcome this challenge.

Urban Edge, for example, is doing just that. A large community development corporation (CDC) with thousands of affordable housing units in Boston, Urban Edge is utilizing its reservoir of trust and decades of building relationships to engage residents, allied CDCs, other nonprofits, municipal partners, and stakeholders to gain insight into the digital equity needs of the community. With that information, Urban Edge is then addressing issues, like digital skills learning, through further outreach and collaboration (see box on p. 14).

Several Gateway City schools districts participated in the Bridge to Broadband program. Led by the national nonprofit EducationSuperHighway, the program established confidential data exchanges so K–12 school districts could provide records to ISPs, allowing them to identify unconnected students for the first time. However, these early efforts encountered difficulty matching student addresses with records maintained by the ISPs. Many schools conducted considerable outreach to families, only to find that the households did have service plans in place. The inability to employ basic matching algorithms signifies the substantial work ahead for efforts to increase digital equity.
LEVERAGING THE CABLE FRANCHISE AGREEMENT TO GENERATE DIGITAL EQUITY DATA

All municipalities in Massachusetts enter cable franchise agreements as authorized under the federal Cable Communications Policy Act (1984). These agreements establish terms that cable companies must adhere to in exchange for use of public rights of way and other public infrastructure. The federal law caps the assessment municipalities may charge at 5 percent of total subscribership.

These agreements are important to digital equity because cable internet runs on the same lines as cable TV. While cable companies are not required to provide data related to internet service as part of these agreements, the cable plant is the internet network. Most cable franchise agreements have a “map” clause, which enables municipalities to request a map of the cable plant and understand where private infrastructure is present in the community. In the future, communities could negotiate for provisions in these franchise agreements that go further, requiring regular data submissions on internet subscribers, network speeds, and latency.

3. Lack of State-Level Coordination

Throughout state government, many individuals have led on digital equity over the course of the pandemic. The Baker–Polito Administration has provided considerable leadership, creating a Gateway City WiFi Fund at MBI, advancing digital equity through the state’s network of career centers, launching the Empower Digital grant program for small businesses at the Mass Growth Capital Corporation, statutorily strengthening the Department of Public Utilities’ regulatory powers, and directing $100 million to a digital equity fund in the governor’s first ARPA bill.

These efforts provide a strong foundation. However, more work remains to ensure that state government is positioned to coordinate and support digital equity efforts throughout the commonwealth. Massachusetts does not currently have an agency or high-level leader overseeing digital equity efforts across state government, and it lacks a coordinating cabinet to leverage resources and align efforts across state agencies. Additionally, the state has not yet utilized its power as a convener to bring communities together to network and exchange best practices.

URBAN EDGE BRINGS DIGITAL EQUITY TO THE NEIGHBORHOOD

Urban Edge is a community development corporation (CDC) with over 1,500 affordable housing units located in Jamaica Plain, Roxbury, and the surrounding Boston neighborhoods. The CDC’s industrious efforts demonstrate how a community-based organization can play a leading role identifying the digital equity needs of local residents and working collaboratively to address them. Over the past year, Urban Edge partnered with the Metropolitan Area Planning Council to conduct a community needs assessment, surveying over 200 neighborhood residents and organizing focus groups with neighbors and local nonprofit partners. This work revealed the need to build a coalition of groups to fully serve the access, device, and digital skills needs of the community. As it works to help coalesce this broader coalition, the CDC is acting quickly to ensure that older adult residents are not socially isolated during the pandemic and that they can utilize technology for telehealth.

Through a partnership with Tech Goes Home (TGH), Urban Edge staff are delivering digital skills training. They are also developing a model that pairs older adults with area youth to reinforce lessons learned through the TGH training and help them troubleshoot problems in the home.

Additionally, Urban Edge is exploring a technical strategy to develop a community broadband network that would provide a free wireless connection to all residents and businesses along the Columbus Avenue corridor.
There are hopeful signs that the state will soon have these pieces in place. A legislative commission formed in 2021 to identify digital equity challenges and remedies has pursued the assignment with considerable focus and a sense of urgency. The commission’s final report is expected in the coming months.

As noted previously, the legislature recently created a digital equity fund. Combined with federal resources, MBI can now staff up and assume a more robust role leading state-level efforts, if it is tasked to do so.

**MBI AND MAPC TEAM UP TO PILOT FREE WI-FI IN CHELSEA AND REVERE**

In urban areas, many households without internet access live in apartment buildings. Providing free Wi-Fi in these buildings can make a significant impact on the digital divide in a relatively short span of time. Highly capable technology is readily available. For example, nearly every hotel in the country operates a Wi-Fi network that connects each room to fast and reliable internet service. Recognizing this opportunity, the 2021 bipartisan infrastructure bill explicitly makes the deployment of free Wi-Fi networks in low-income apartment buildings an eligible use of funds.

With support from the Massachusetts Broadband Institute and the Metropolitan Area Planning Commission, the Chelsea and Revere Housing Authorities are piloting free Wi-Fi in two public housing developments: Prattville Apartments, a 128-unit family housing complex with two three-story buildings in Chelsea, and Rose Pomona, a 110-unit family housing building in Revere.

The pilot began with site visits to catalog assets and information such as ownership of light poles on the sites, and record other existing conditions, including building construction and layout. To gain a better understanding of how residents might use free Wi-Fi and to surface potential concerns, the team also conducted outreach to residents early on, through community events and surveys.

With a firm understanding of physical conditions and resident needs, MAPC is now in the process of selecting an ISP to deliver the service and a vendor to install the network. The service will be provided through a 1 gigabit per second (Gbps) enterprise-level package, which will cost between $1,250 and $2,500 per month. Startup expenses for Wi-Fi deployment at the Chelsea Prattville site is estimated to cost approximately $25,000 ($11,000 for hardware and $14,000 for installation and configuration of the Wi-Fi network).

Lessons learned from these two pilots will demonstrate the benefits of providing Wi-Fi in affordable housing developments and the challenges that must be overcome to take advantage of this high-impact strategy.
B. Opportunities

From national digital equity experts to community stakeholders, our interview subjects offered a remarkably consistent take on the opportunities to close the divide. They emphasized the need for locally tailored solutions developed by collaborative cross-sector partnerships that address each dimension of the digital divide. They strenuously endorsed community participation and direct involvement from those whom digital equity strategies seek to serve. At the same time, they highlighted the unique expertise Massachusetts can tap from academia, health care, and high-tech companies.

1. Cross-Sector Partnerships

In recent years, models where civic leaders join forces for “collective impact” have received considerable attention in community economic development, education, and health circles. The idea centers on aligning efforts toward a common goal to achieve far greater impact than any single organization could reach operating on its own. Strong relationships and a culture of collaboration across agencies and organizations are critical to success. Over the years, numerous efforts have sought to help foster this form of social capital in Gateway Cities, most notably the Working Cities Challenge, led by the Federal Reserve Bank of Boston, MassDevelopment’s Transformative Development Initiative, and Harvard Business School’s LEADS program.

As a social change model, collective impact has delivered impressive results, but in some applications the results have been disappointing, leaving some wary of the approach. However, the digital divide is especially well suited to this form of cross-sector collaboration. The goal is clear and actionable. From education and workforce development to health and human services, numerous organizations can further their distinct missions by achieving it together. And each organization has different capabilities to contribute. Those providing social work or home health care reach people where they live, allowing them to make assessments and provide hands-on support. Community health centers, nonprofit housing agencies, community-based nonprofits, and libraries reach different portions of the population. Together, they can communicate about various opportunities to receive technology and training. School districts and other large organizations may be adept at procuring and servicing computers and other digital technology on behalf of smaller agencies, such as the local Council on Aging.

Most importantly, because so many of these organizations are close to the ground, they have pre-existing relationships with and a great deal of trust from the residents they serve. This is critical to getting households over the significant hump involved in providing personal information, signing agreements for discounted services, and inviting installers into their homes. For example, regional coalitions composed of many of the same members successfully capitalized on their trust-based relationships to increase COVID-19 vaccine utilization.

Recognizing the efficacy of this approach, experts see local partnerships as the foundation of an effective strategy to close the digital divide. Groups like the National Digital Inclusion Alliance are working to support the growth of these efforts throughout the country. In Massachusetts, two notable regional partnerships launched in 2021. The Essex County Community Foundation convened over 100 partner organizations and invested $2.5 million in a three-year digital equity campaign. With the foundation’s leadership, these groups developed and...
began to implement a comprehensive action plan with impressive speed. In Western Massachusetts, Baystate Health began exploring strategies to address digital equity at the onset of the pandemic. In the spring of 2020, they undertook an initial assessment and convened a series of community meetings with organizations representing various sectors. This led to the formation of a digital equity coalition made up of key stakeholders spanning the 69 municipalities of Hampden, Hampshire, and Franklin counties (see box on p. 18).

2. Community Participation

Too often, well-intentioned social change initiatives fail because members of the affected population are not involved in identifying the problems and developing and contributing to the solutions. Digital equity partnerships can easily avoid this pitfall because there are numerous entry points for meaningful community participation.

By placing community members in the lead, they can develop a much better picture of which households are underserved and why. Tech Goes Home and others are already working creatively to engage residents in the development and administration of surveys, so that they are asking the right questions, and residents are reaching out to fellow members of the community to increase participation.

There are also numerous roles community members can play in mounting the response. Many organizations are seeking to hire “digital navigators”—trusted members of the community who work one on one with residents to identify their needs and help them connect with appropriate resources. In community health centers or local libraries, digital navigators with relatively modest training can provide effective outreach and services in a variety of settings. As an example, the Metro North Workforce Development Board is utilizing a grant from the state’s YouthWorks program to train teens to provide digital outreach and skills training (see above).

As digital equity efforts gain momentum, there should be opportunities for residents to fill more technical “digital steward” positions. Workers in these roles perform functions ranging from building and servicing open access neighborhood Wi-Fi networks to recycling computers and producing digital content to meet community needs. The Detroit Community Technology Project exemplifies the power of this model as a community economic development strategy that builds new skills along with new forms of social capital and collective efficacy (see box on p. 16).

3. Private-Sector Expertise

As Baystate Health’s leadership in the Pioneer Valley demonstrates, the private sector can play a role in catalyzing digital equity efforts in regions throughout the state. Digital equity experts recommend bringing the private sector to the table, where they can first “lead by listening.” This posture is particularly important for the ISPs. Collaborative cross-sector partnerships that afford grassroots groups with opportunities to meet with providers on more equal terms could have tremendous value.

Moreover, Massachusetts is also in the enviable position of having some of the most sophisticated technology companies in the state, and digital strategists must think creatively about how to best take advantage of this asset. Ensuring that regions in other parts of the state can benefit from knowledge concentrated in Greater Boston requires especially careful consideration.

These institutions can play an invaluable role in helping regional partnerships get ahead of the curve and anticipate the challenges and opportunities presented by changing technology. At the state level, surfacing knowledge from these institutions will be particularly valuable to efforts that involve experimentation and long-term policy development.

MASSHIRE METRO NORTH DEVELOPS CUTTING-EDGE DIGITAL NAVIGATOR MODEL

Together with city officials in Everett, Malden, and Revere, the Metropolitan Area Planning Council, Comcast, and Commonwealth Corporation, MassHire Metro North has developed an innovative program to train youth workers to serve as digital navigators. The first cohort includes 15 young adults, ages 17 to 21. With funding from Comcast, Metro North will deliver first-class training through the National Digital Inclusion Alliance. Each community will then find placements for five digital navigators at city hall or in appropriate departments, such as libraries, councils on aging, and housing authorities. As digital navigators, the youth workers will offer individualized or small-group assistance to community members seeking affordable home internet service, affordable internet-capable devices, and/or coaching in introductory digital skills. Funding from the state’s YouthWorks program will cover their salaries.
MARSHALING CAPACITY TO LEAD THE WAY

For years, the digital divide never reached front burner status. Now that communities fully appreciate the problem, many continue to lack capacity to act on it. Experience from regions that are rising to the challenge shows organizing capacity can come from many quarters, and cities and towns can gain a lot by working together to pinpoint common challenges and tackle them one by one.

Once a digital equity coalition gets off the ground, roles and responsibilities can change over time, but certain organizations have inherent advantages getting things started. A large anchor institution or community foundation, for instance, can deploy funds quickly, and it has valuable working relationships with grassroots groups, who in turn have understanding, trust, and goodwill with residents most in need of support. Regional planning agencies also make excellent backbone organizations to lead digital equity coalitions. They have the sophistication to work with state and federal funding programs, they know the municipal officials in their regions well, and many have in-house staff to perform technical analysis and project-manage pilot programs. The case studies below highlight the forces behind digital equity efforts across the state.

BAYSTATE HEALTH ORGANIZES THE PIONEER VALLEY

In the summer 2020, Baystate Health brought more than 150 leaders from Hampden, Hampshire, and Franklin counties together for three online forums. These discussions brought into focus the need to organize collaboratively to address the digital divide in Western Massachusetts and spawned the Alliance for Digital Equity (ADE). ADE is a coalition of community organizations, city officials, and civic leaders from Hampden, Hampshire, and Franklin counties. They represent 69 communities from urban to rural, with an emphasis on supporting low-income residents, underserved residents of color, and those with disabilities.

With assistance from the Western Massachusetts Community Foundation, ADE conducted a detailed needs assessment, exploring connectivity, device access, and digital skills. The United Ways of Pioneer Valley, Hampshire County, and Franklin County partnered with the alliance to distribute an online survey. The survey generated feedback from over 100 organizations that provide direct services to the target populations. To complement the data generated from the survey, ADE partnered with the Pioneer Valley Planning Commission and the Franklin Regional Council of Governments to examine census data and other information on digital access. In May 2021, they released an extensive report on the state of digital equity in the region.

With this information in hand, the coalition is now working on short-term strategies to increase digital access and adoption. Together, these groups are also exploring policy solutions to further digital equity over the long term.

THE WORCESTER MUNICIPAL RESEARCH BUREAU INSTIGATES CHANGE

The Worcester Regional Research Bureau took the lead in initiating digital equity dialogue, with a July 2020 report unveiling gaps in access throughout New England’s second-largest city. After briefing the city council and school committee on the findings and recommendations, the city manager formed a task force to further unpack the issues. The task force includes municipal and school department officials and leaders from Worcester Polytechnic Institute (WPI), the Worcester Regional Chamber of Commerce, and the Worcester Municipal Research Bureau. WPI has provided technical research, while the bureau has offered policy research. Worcester has had considerable difficulty engaging the community’s sole internet provider, a challenge that has led the task force to focus heavily on exploring the potential of municipal broadband and other strategies to increase competition.
A COMMUNITY FOUNDATION MOBILIZES ESSEX COUNTY

The Essex County Community Foundation (ECCF) works to invest strategically in initiatives that take a systems-based approach for population-level impact. The foundation's leadership team quickly recognized that their model could help close the region's deep digital divide that was exposed by the COVID-19 pandemic.

To better understand the challenges, ECCF partnered with the Center for State Policy Analysis at Tufts University to produce a baseline digital equity analysis for each of Essex County's 34 cities and towns. Released in October 2020, the report provided detailed information to guide a comprehensive response.

In June 2021, the foundation announced the formation of a new coalition, with over 150 members working together to advance digital equity in the region. ECCF made a $2.5 million commitment to support this work focused on overcoming access, equipment and digital skill barriers, as well as building a cross-sector coalition as a regional community of practice. The skills focus included forming a three-year partnership with Tech Goes Home (TGH). The foundation's support allowed TGH to enter new partnerships with local community-based organizations to provide over 800 households with digital access, devices, and skills training.

With resources from the Massachusetts Broadband Institute's Gateway City WiFi Fund and local service providers, the foundation is supporting efforts to provide free access to over 20,000 residents across the county. For example, North Shore Community Development Corporation is installing internet access points on all of its more than 40 properties in the Point neighborhood of Salem. This Wi-Fi project has the potential to serve over 5,000 residents. Finally, to address device needs, ECCF is also working to form a nonprofit digital device recycling partnership. To date, the initiative has refurbished more than 1,000 devices and provided them to households through area homeless and women shelters, refugee resettlement organizations, and workforce development programs.

CHELSEA, EVERETT, AND REVERE JOIN FORCES WITH MAPC

Early in the pandemic, the Metropolitan Area Planning Commission (MAPC) recognized the need to help communities with limited capacity coalesce around digital equity planning. Drawing on a federal Economic Development Administration grant, MAPC convened stakeholders from Chelsea, Everett, and Revere to help them craft strategies to close the digital divide in their communities. The working group included chief information officers, librarians, school district leaders, officials from local housing authorities and workforce development boards, leaders from community-based organizations, and regional health and human service providers.

Staff at MAPC provided technical expertise to assess service coverage in each community and catalog existing infrastructure, including municipal fiber lines, cell towers, small cell wireless nodes, and data centers. They also examined the regulatory frameworks associated with these assets. Using publicly available data and an extensive survey of over 2,000 residents, they collected valuable information on price, speed, and service quality.

The resulting plan lays out digital equity goals and strategies that Chelsea and Revere can pursue to meet them. MAPC has also increased its capacity to assist communities with the implementation of digital equity strategies, piloting the deployment of free Wi-Fi in affordable housing complexes (see box on p. 15) and helping a community development corporation in Boston craft a neighborhood-level strategy (see box on p. 14). In addition to facilitating collaboration and shared capacity across communities, MAPC’s efforts demonstrate the inherent strength of regional planning agencies as digital equity intermediaries.
LEVERAGING THE LEGAL AID COMMUNITY AS DIGITAL EQUITY ADVOCATES

Digital equity coalitions can look to legal aid providers as a valuable source of support. Last year, the Massachusetts Law Reform Institute (MLRI) launched a digital equity project as part of its Racial Equity and Justice Initiative. Attorneys at MLRI are working to help address digital and language access barriers that block low-income people of color from accessing quality education, health care, employment, housing, government benefits, and the courts. They provide trainings and materials on federal programs including the Affordable Connectivity Program (ACP), participate in national advocacy campaigns, and comment on digital equity issues. Additionally, MLRI provides general public information on MassLegalHelp and coordinates a working group of civil legal aid advocates and community partners working to build a statewide coalition to advocate for policies that will close the digital divide.

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<td>Civil Rights</td>
<td>Connect residents to appropriate programs and services</td>
</tr>
<tr>
<td></td>
<td>Community Development</td>
<td>Carry out digital equity audits</td>
</tr>
<tr>
<td></td>
<td>Immigrant Services</td>
<td>Provide classes</td>
</tr>
<tr>
<td></td>
<td>Older Adults</td>
<td>Offer tech help</td>
</tr>
<tr>
<td></td>
<td>Small Business Development</td>
<td>Distribute devices</td>
</tr>
<tr>
<td></td>
<td>Youth Development</td>
<td>Issue and maintain devices</td>
</tr>
<tr>
<td><strong>Private and Institutional Partners</strong></td>
<td>ISPs</td>
<td>Anchor digital equity coalitions</td>
</tr>
<tr>
<td></td>
<td>Technology Companies</td>
<td>Finance pilot projects</td>
</tr>
<tr>
<td></td>
<td>Hospitals</td>
<td>Provide technical expertise</td>
</tr>
<tr>
<td></td>
<td>Universities</td>
<td>Advocate for policy change</td>
</tr>
<tr>
<td></td>
<td>Philanthropy</td>
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</tr>
</tbody>
</table>

GROWING A HEALTHY DIGITAL EQUITY ECOSYSTEM

Borrowing heavily from a 2020 paper from the Benton Institute for Broadband and Society, the graphic below visualizes digital equity actors and the roles they each perform. Regional digital equity coalitions play a critical role in helping these various actors meld into a healthy digital equity ecosystem.²¹
IV. An Action Plan for Advancing Digital Equity

The following sets forth a near- to mid-term agenda to close the digital divide in Massachusetts. Informed by research and working sessions with a diverse collection of leaders from across the state, we distill a series of actions to enhance broadband networks, increase access to affordable devices and internet service, and promote and build digital skills. With a focus on supporting the collaborative community-based problem-solving model, the agenda outlines a framework for state leadership, tools to empower communities, roles for private and institutional partners, and issues for future consideration.

A Framework for State Leadership

Massachusetts has been a national broadband leader since the creation of the Massachusetts Broadband Institute (MBI) in 2008. With MBI’s efforts to forge public–private partnerships, broadband infrastructure has been extended to every corner of the state. With the following strategies, Massachusetts can further this leading position by nurturing collaborative community-based partnerships that give all residents the opportunity to benefit from today’s advanced digital technologies:

1. Formally Designate MBI as the Lead State Entity on Digital Equity

There are many digital equity efforts already underway across state government, and they will soon grow considerably, with new funding from the federal infrastructure package. At present, it remains unclear who is responsible for coordinating these initiatives. Action is required to ensure that agencies work together synergistically.

While originally established to assist with deploying broadband in unserved areas (a task that it has largely achieved), MBI has informally assumed an expanded role as part of the state’s pandemic response. Building on this work, MBI’s mission should formally and permanently expand to include:

- Coordinating digital equity planning and programs, policy development, and funding across state government.
- Regularly convening a digital equity cabinet, including representatives from Health and Human Services, Education, Technology Services, Housing and Economic Development, the Executive Office of Labor and Workforce Development, and the Executive Office of Elder Affairs.
- Supporting local and regional digital equity partnerships by providing technical assistance and capacity-building services; providing financial support, including operating grants; conducting evaluations; and disseminating best practices.
- Preparing and maintaining the state’s broadband service map.

This last charge is especially critical, as the private provision of this infrastructure has made it difficult to determine coverage and coordinate public investment to address gaps and ensure that all households receive adequate service.

The recently passed federal Digital Equity Act requires that states designate a lead entity for digital equity. The governor should select MBI to serve in this capacity. The legislature can ensure that this is not just a compliance matter by adding the functions described above to MBI’s enabling statute (MGL Chapter 40J Section 6B). Further, the legislature should require that at least one of the four gubernatorial appointees to the MBI board have a background in digital equity.

2. Assemble a Robust State Digital Equity Plan

To receive federal funds provided by the Digital Equity Act, states must first submit a detailed digital equity plan. This requirement is an opening to help Massachusetts organize its broader efforts, positioning MBI for long-term leadership on digital equity and stimulating activity at the local level in regions across the state.

The Baker–Polito Administration should immediately begin crafting a process and public engagement strategy for the development of the state’s digital equity plan, leveraging private sector involvement and expertise. The goals of the planning process should include:

- Adding to the growing number of actors engaged in digital equity efforts by drawing strong participation from municipal governments and community-based organizations, with particular emphasis on engaging boots-on-the-ground representatives from low-income communities.
- Generating new, more complete data to identify gaps and needs and establish goals at both the state and local levels across all three dimensions of digital equity.
- Inventorying programs and assets across state government, providing a clearer understanding of where additional coordination and collaboration can have the greatest impact.
3. Create a Digital Equity Fund

Massachusetts has already made significant progress toward providing a vehicle to resource digital equity efforts. Signed into law by Governor Baker in December 2021, An Act Relative to Immediate COVID-19 Recovery Needs (Chapter 102 of the Acts of 2021) includes $50 million to capitalize a broadband innovation fund administered by the Executive Office of Housing and Economic Development (EOHED). The authorizing language defines eligible uses for these dollars broadly. They include facilitating broadband adoption in underserved communities, expanding digital skills training, and providing devices to low-income residents.

EOHED should delegate the administration of this fund to MBI. In developing specific guidelines for the use of these resources, MBI should cast a broad net. This will ensure that existing efforts can tap the fund to meet identified needs, while also demonstrating that resources will be available to support a wide variety of activities as stakeholders engage in digital equity planning at the local level. At a minimum, these funds should be available for:

- Local and regional coalition and capacity building and digital equity planning.
- Digital outreach services and support (including digital navigators and stewards).
- Digital equity audits.
- Small business assistance digital capacity building.
- Device subsidies.
- Wireless networks in affordable housing developments and shelters.
- Public wireless networks in underserved low-income neighborhoods.
- Public–private partnerships to improve broadband networks in underserved communities.
- Evaluation and knowledge dissemination.

MBI must have authorization to utilize a portion of the fund to significantly expand its staff capacity. In addition, MBI should sub-grant a sizeable share of these funds to community foundations, regional planning agencies, and other local intermediaries with knowledge of grassroots groups in their communities and strong financial controls to administer state and federal dollars. These organizations are better positioned to ensure that community groups are aware of the resources available, and they can provide more hands-on support in guiding them through the application process.

Given that this fund is intended to serve community-led digital equity strategies, MBI should establish an advisory board with diverse representation to formally solicit input on the development, administration, and evaluation of grantmaking. As digital equity planning and pilot programming proceeds, and the cost and benefits of various approaches come into clearer view, the advisory board can provide an especially valuable contribution weighing whether larger investments in public–private partnerships present an efficacious use of limited resources (see box on p. 23).

While federal funding from the infrastructure bill will be available to recapitalize this fund in the coming years, it is never too early to plan for sustainability. The authorizing language allows for voluntary private-sector contributions to the fund. MBI should explore opportunities to develop these partnerships, as described in more detail in the “Future Considerations” section, below.

4. Issue Digital Equity Planning Grants

While MBI must move expeditiously to get the digital equity fund up and running, the agency should develop a list of pre-approved vendors and make resources available to communities for digital equity planning with even greater speed. The more work occurring at the local and regional scale, the more effective the state will be in preparing its digital equity strategy. Furthermore, communities have their own federal resources to deploy; this local investment should be informed by a well-conceived plan. Strong planning will also put communities in a better position to win additional federal funding that will be awarded competitively.

While a handful of communities have undertaken digital equity strategy work, most have yet to begin. It is critical that communities mount an inclusive planning process at the municipal and/or regional level to analyze and understand their needs. While data limitations present a challenge, there is ample information at the neighborhood level from the Census Bureau, and communities can complement these figures by piecing together valuable data from their school departments, libraries, councils on aging, and local nonprofits. Municipalities can also utilize disclosure provisions in their cable franchise agreements (see box on p. 14) to improve their understanding of how private broadband infrastructure traverses the community. Finally, it is possible to develop a much clearer picture of local needs by surveying residents and community-based organizations.

Producing plans as a matter of compliance has little value and may do more harm than good. To ensure communities are fully committed to the undertaking, the state should require
a local match and should screen proposals to ensure that the framework proposed includes thoughtful community engagement and diverse representation from underserved populations. The state could incentivize even more robust planning by scaling the size of the grants according to the depth of the proposed process and/or providing a larger state match.

Once plans are developed, they could be shared through the Community Compact online best practices library, to support continued idea sharing across communities.

GEARING UP FOR SMART INVESTMENTS IN LOCAL INFRASTRUCTURE

Cities throughout Massachusetts are responding to the pandemic by exploring municipal broadband. These frenetic efforts stand in contrast to limited work on digital equity planning, particularly in urban communities, where access is clearly not the primary source of digital inequity. Before communities make complex and risky infrastructure investments, they must first establish resident needs and then inventory their assets and understand the capabilities various partners can bring to help meet these needs. With this foundation, communities will be in a stronger position to make informed decisions about whether public investments in broadband infrastructure are required, and if so, how they maximize return on their resources.

Communities must accelerate their progress along this learning curve to put themselves in the best position to access funds from the federal infrastructure bill’s BEAD program. They will also need this knowledge to successfully navigate opportunities to enter public–private partnerships. With unprecedented public funding available, private companies will be heavily courting municipal governments in the coming years.

A strong public–private partnership can position each sector to contribute their relative strengths to the construction and operation of broadband infrastructure. These arrangements generally assume two forms: public financing of privately owned infrastructure, or public financing of publicly owned infrastructure to be operated by the private sector. In the first instance, the municipality provides capital in exchange for an agreement to meet specified policy goals, such as providing all households in an area with affordable high-speed service. Alternatively, the municipality may pay for infrastructure that will be publicly owned, but the private partner takes responsibility for designing, building, maintaining, and operating the network. Either of these approaches could be community-wide or targeted to neighborhoods with unmet needs. For communities without municipal light plants seeking the former, public-private partnership models may present a particularly attractive option.

A recent paper from the Benton Institute provides communities with a valuable guide for exploring these arrangements with particular emphasis on how they pay careful attention to avoiding pitfalls and pursuing partnerships only with creditworthy entities that offer enforceable agreements and proven technologies. To expand broadband to rural areas, MBI experimented with various public-private partnership models, gaining valuable expertise that it is increasingly well-positioned to share with communities throughout the state.

It remains unclear how much communities will be able to bring federal dollars from the infrastructure bill into public–private partnerships that compete directly with incumbent providers, but Congress has explicitly authorized the use of ARPA funds to help increase access and adoption in underserved areas. Recent guidance from the Treasury Department on eligible uses of ARPA’s State & Local Fiscal Recovery Funds gives communities considerable flexibility to determine how and where they invest in broadband infrastructure, including by specifying areas with service levels below 100/100 Mbps as meeting the definition of underserved.
Tools to Empower Communities
From schools and libraries to health centers and community development corporations, local organizations know residents best, and they are much more likely than higher-level organizations to have the public’s trust. As described in the preceding pages, this is why the most effective digital equity efforts are built and managed at the local or regional level. The following strategies will ensure that Massachusetts is doing all that it can to empower communities to spearhead digital equity campaigns:

1. Deploy Digital Equity Fellows
Drawing on lessons from the successful Transformative Development Initiative (TDI) at MassDevelopment, MBI should establish a program that assigns digital equity fellows to support the building of coalitions and the execution of local and regional digital equity plans in communities across the state. Mid-career professionals should be recruited for these full-time fellowships. In addition to contributing much needed capacity locally by filling this role for two to three years, they will provide MBI with a force multiplier, bringing on-the-ground perspective to assist with resource coordination and facilitating the flow of funds to the most impactful investment opportunities.

2. Convene a Municipal Leaders Institute on Digital Equity
Municipal leaders across the state have come together on various issues at different times, most recently in coordinating efforts to combat the COVID-19 pandemic. Providing venues for mayors, city/town managers, and other municipal leaders to come together has proven to be an effective tool for information sharing and idea generation. Toward this end, MBI should work with partners to convene a municipal leaders institute on digital equity.

This forum will provide mayors and managers with opportunities to learn about the latest digital equity issues and local efforts to address them in Massachusetts and beyond. By facilitating peer-to-peer exchange, the institute will help identify challenges and opportunities early and disseminate best practices quickly. Networking municipal leaders will also provide value to efforts to advance digital equity in state and federal policy.

BOSTON’S DIGITAL EQUITY FUND
Created in 2017, Boston’s Digital Equity Fund provides support to community-based organizations that help Boston residents participate in today’s digital society. This includes providing basic digital skills training; training in digital tools to pursue professional, educational, and civic endeavors; and increasing broadband adoption among Bostonians without service in their homes.

The grant’s next round will focus on efforts to promote the Affordable Connectivity Program, a FCC provided discount of up to $30 per month toward internet service for eligible households. Projects funded to date have focused on audiovisual training for high school students; digital literacy courses covering basic to intermediate computer skills; how to use social media; digital applications for health, online banking, and protecting oneself and family online; and creative engagement in technology and engineering for youth and adults, including those who are formerly incarcerated.

In 2021, the Digital Equity Fund and the Boston Equity Office joined with the city’s Department of Innovation & Technology and the Age-Strong Commission to grant nearly $500,000 to 19 Boston nonprofit organizations, with awards ranging from $5,000 to $35,000. Focus was given to neighborhoods disproportionally impacted by COVID-19 and to organizations serving older adults, persons with disabilities, those with limited English, residents of public housing or rental voucher holders, and workers who lost employment due to the pandemic.
3. **Convene a Community of Practice for Digital Equity Coalitions**

Those who are on the ground leading digital equity efforts would also benefit from a learning community. These leaders come from a range of organizations and vastly different sectors, including education, health care, housing, libraries, senior services, small business assistance, and workforce development. Without a formal effort to bring them together on the issue, they have little opportunity to interact outside of their local or regional partnership tables. A community of practice would provide a valuable forum to share lessons learned, problem-solve, expand networks, and cultivate new thinking.

4. **Establish Data Partnerships With ISPs**

Massachusetts-based ISPs are making efforts to support digital equity through programs that offer lower-cost internet service and through targeted investments in community-based efforts. However, municipalities and local resource providers do not have access to the data necessary to make informed policy or investment decisions. With the limited information available today, it is difficult for a community to know if its broadband network adequately serves all residents. Similarly, it is hard to gauge the effectiveness of efforts to increase broadband adoption. These data limitations make it challenging to program investments and establish performance targets for digital equity initiatives.

Various efforts are underway to generate more information on network performance and uptake of digital equity programs. But in the interim, communities and the state should pursue opportunities to partner with ISPs to generate vital data. Timely access to information will be critical to the success of digital equity planning efforts.

Through partnership with ISPs, communities can build upon the information-sharing with school districts facilitated by EducationSuperHighway’s K–12 Bridge to Broadband program, to ensure that those in health care and other human services organizations are able to obtain information on whom in the community lacks connections at the household level.

### Critical Roles for Private and Institutional Partners

With the expertise of private, nonprofit, and institutional entities in the state's innovation and technology sectors, Massachusetts can tap into a depth of knowledge that is unmatched elsewhere in the country. These organizations understand the problem, and they are eager to contribute to the solution through collaborative public–private partnerships. The following strategies seek to fully harness their capabilities:

1. **Establish a Commission on the Future of Broadband**

Broadband technology is critical to the economic competitiveness and social welfare of the commonwealth. Lack of competition may lead privately owned and operated networks to invest at below-optimal levels. Fragmented delivery that is based on municipal boundaries could leave lower-income communities without the technology they need to attract businesses and residents. Rapidly changing technology makes it difficult for the public sector to identify issues in the marketplace and respond in a manner that ensures that communities throughout the state have access to cost-effective infrastructure that meets their needs.

A commission led by private industry and universities could explore market conditions today and propose market-based solutions to any current or future challenges that they identify. Ideally, this body would be assembled by the governor or state legislature, but this is not necessary. An effort organized and led independently by the private sector could have equal impact, so long as it produces high-quality information that was previously unavailable to policymakers and the public.

2. **Establish a Working Group on Digital Devices**

Device procurement and servicing is another thorny challenge that merits focused attention from experts in state and local government, the private sector, and academia. Public schools and other organizations are now providing tens of thousands of devices to individuals and families in Massachusetts, but there does not appear to be an established model to fund the maintenance and replacement costs of these devices over the long term. Similarly, there is no model for providing users with product support. While federal funds can support these needs in the near term, maintaining device access will require approaches that take advantage of economies of scale and lay the groundwork for a sustainable financial plan.
The Department of Elementary and Secondary Education should convene a working group of public, private, nonprofit, and institutional partners to investigate potential device procurement, management, and financing solutions. Opportunities for consideration include incubating device-recycling partnerships, identifying an organization in each region (e.g., large urban school districts) to procure and service devices on behalf of partner organizations, establishing new need-based funding formulas for public school districts, and innovative technical support solutions.

This group could also analyze the ways in which meeting local devices needs may present openings to capitalize on inclusive entrepreneurship and community economic development opportunities.

Ideally, such a working group could expeditiously provide more information on device needs and potential models to meet them, allowing MBI to take this into consideration before expending significant resources from the digital equity fund on devices.

3. Facilitate Cross-Sector Partnerships to Pilot Effective New Models

Throughout the COVID-19 pandemic, communities deployed innovative models to connect underserved populations with digital resources. Future efforts to close the digital divide should operate with this high level of ingenuity and urgency; however, we must also ensure that new initiatives are structured in a manner that allows for rigorous evaluation. The private sector can play a major role in seeding such efforts and in encouraging rapid prototyping, process improvements, and replication. Private-sector leadership in device procurement, distribution, and maintenance will be crucial. Fields that are ripe for digital equity innovation with private-sector partnership include affordable housing, community health, older adults, small business assistance, and workforce development. Over the years, private-sector partners have contributed to numerous efforts to help educators leverage new technologies in the classroom. These partnerships will have added value as investments bring these technologies into more and more homes.

MAPPING BROADBAND SERVICE TO IDENTIFY GAPS

One of the most challenging aspects of increasing access to broadband is determining who does and does not have a wired connection to the internet, and whether the quality of service provided by the available infrastructure is sufficient. The Baker-Polito Administration identified this as a key next step to close the digital divide, and through an EDA Planning Grant, is undertaking a state-level broadband map initiative to create a detailed statewide broadband coverage map that will identify infrastructure gaps in the Commonwealth.

The map will be used to identify where resources should be deployed to ensure that everyone in the state has adequate access. Led by the Massachusetts Broadband Institute (MBI), this effort will involve collecting, processing, analyzing, and mapping data from Internet Service Provers (ISPs), surveys, and other sources to identify addresses that currently do not have service that meets the federal minimum speed threshold (25/3 Mbps). The data collected will also help pinpoint locations that require upgraded infrastructure to reach higher speeds as specified in the American Rescue Plan Act and the Infrastructure Investment and Jobs Act. MBI recently released a request for proposal for contractors to support this project.
Future Considerations

Three policy questions that surfaced repeatedly in discussions with digital equity leaders deserve further consideration. As we learn more about the efficacy of current efforts, the outcome of those proposed above, and the federal regulatory response, the merits of state action in these areas will become clearer:

1. Installing Free Wi-Fi in New Affordable Housing Developments

Equipping affordable housing units with free Wi-Fi could ensure that many more low-income residents of Massachusetts have reliable internet service over the long term. However, building and managing affordable housing is complicated and costly, and there is concern about making the work more difficult and expensive. The multiple benefits of providing free internet to residents may produce returns for the owners and managers of these properties to offset additional costs. Pilot projects currently underway to test free Wi-Fi in existing affordable housing developments will provide more insight on the costs and benefits of this approach.

2. Developing a Sustainable Long Term Funding Model

The Digital Equity Fund will be flush with resources for the next several years, but when one-time federal funds are spent down, Massachusetts must have a sustainable revenue stream in place to cement progress. The state should begin exploring opportunities to create a long-term funding model for digital equity fairly soon. Options include a line item in the state budget, collecting voluntary contributions from ISPs, attaching an end-user service fee to internet bills (following the MassSave model for residential energy efficiency upgrades), attaching a surcharge to digital device purchases or asking consumers to donate to a fund at the time of purchase, or a combination of these mechanisms.

3. Taking Regulatory Action to Generate Data

Massachusetts cannot execute a digital equity strategy effectively without access to information. The required data could come voluntarily from the ISPs or through the efforts of the FCC. However, if these avenues fail to produce sufficient information in a timely manner, the legislature has empowered the state’s Department of Public Utilities (DPU) to mandate data reporting to the state. The DPU must be prepared to exercise this regulatory authority in a neutral manner that protects the privacy of individuals and the proprietary interests of the ISPs.

“I have already learned so much and feel more confident. MakeIT Haverhill’s guidance and teaching have been very helpful, and I am looking forward to continuing more advanced computer classes to further improve my knowledge and skills.”

— Susan Karimupfumbi, MakeIT graduate, Haverhill resident, and immigrant from Zimbabwe
Acknowledgments

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Susan Adams
Massachusetts League of Community Health Centers

Anne Klibanski, MD
Mass General Brigham

Michael Baldino
Massachusetts Broadband Institute

Michael Knapik
Baystate Health

Troy Clarkson
City of Brockton

Ed Lambert
Massachusetts Business Alliance for Education

Glen Comiso
Massachusetts Institute of Technology

Jeffrey Leiden, MD, PhD
Vertex Pharmaceuticals

Roger Crandall
MassMutual

Stratton Lloyd
Essex County Community Foundation

Josh Eichen
Metropolitan Area Planning Commission

Paul Matthews
Worcester Regional Research Bureau

Paul Foster
Springfield Public Schools

Margaret Norton
Mass General Brigham

James Fuccione
Massachusetts Healthy Aging Collaborative

Dan Noyes
Tech Goes Home

Jacquelyn Gantzer
MA Dept. of Elementary and Secondary Education

Colin Rhinesmith
Suffolk University

Suzanne Glassburn
Massachusetts Institute of Technology

Frank Robinson
Baystate Health

Dominick Ianno
MassMutual

Ashley Stolba
Executive Office of Housing & Economic Development

Karen Kelleher
Local Initiative Support Corporation

Rep. Andrew Vargas
Third Essex District
Endnotes

1 The provisions include $2.75 billion over five years for digital equity grants awarded to state by formula and competitively; $42.5 billion for broadband investments awarded by formula (Massachusetts is estimated to receive $550 million from this large tranche; $14.2 billion to fund the new Affordable Connectivity Program subsidy; and $1 billion for Middle Mile Connectivity).

2 Authors’ estimates from the 2015–2019 American Community Survey, Public Use Microsample.


4 This figure could slightly inflate the number of those without access at broadband speeds. For instance, we may double-count a household that reported no internet plan to the census if they are utilizing a neighbor’s unprotected wireless and thus operating at a slow speed.


7 The ACP also differs from the EBB in that households can apply the benefit to any plan offered by the ISP. Under the EBB, ISPs could decide whether they would accept the discount toward the various plans that they offer customers.

8 Not all ISPs administered the device benefit. The internet and device benefit must be claimed through the same provider. Data cover claims up until November 15, 2021. Also note that, nationally, 98 percent of households purchased tablets. See: https://www.usac.org/about/emergency-broadband-benefit-program/emergency-broadband-benefit-program-enrollments-and-claims-tracker/#enrollment-by-state.

9 In part, this limited progress may reflect broader wording of this question on the MAPC survey. MAPC asked whether respondents agreed with the statement: “People in my household always have access to a computer if they need one.”

See: https://www.census.gov/newsroom/blogs/random-samplings/2021/10/pandemic-impact-on-2020-acs-1-year-data.html. Also note this estimate reflects a more comprehensive definition that include smartphones and tablets.


About the Massachusetts Competitive Partnership

The Massachusetts Competitive Partnership is a nonprofit, nonpartisan, 501(c)(4) public policy group comprising chief executive officers from some of the commonwealth’s largest businesses. MACP’s goal is to promote job growth and competitiveness in the commonwealth by working in collaboration with public officials and business and civic leaders. MACP’s mission is to make Massachusetts one of the leading states for business investment, inclusive job creation, and overall competitiveness.

About MassINC

Founded in 1996, MassINC’s mission is to provide the people of Massachusetts with the information they need to participate fully in our democracy. We are a nonpartisan 501(c)(3) and achieve impact through independent research, nonprofit journalism, and civic engagement.