



# GATEWAY TO DIGITAL INCLUSION

THEY THAT GO  
DOWN TO THE SEA  
IN SHIPS

## GLOUCESTER DIGITAL EQUITY PLAN

FEBRUARY 2025

PREPARED BY METROPOLITAN AREA PLANNING COUNCIL (MAPC) ON BEHALF OF  
THE CITY OF GLOUCESTER AND THE SAWYER FREE LIBRARY

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### City of Gloucester Administration

Mayor Greg Verga

Jill Cahill, Chief Administrative Officer

Pam Tobey, Director of Communications and Constituent Services

### Sawyer Free Library

Jenny Benedict, Library Director

### City of Gloucester Staff

Ryan Knowles, Director of IT

Vickie Stringfellow, Interim Director of IT

Alex Koppelman, Director of Community Development

Erik Hinderlie, Staff Planner Community Development

Dominique Hurley, Director of Public Health

Elise Sinagra, Director of Elder Services

Ed Conley, Chief of Police at Gloucester Police

Chelsea Goldstein-Walsh, Regional Prevention Director at the Gloucester Health

Christine Castle, Title I, ELL, Family Community Engagement, and Homeless McKinney-Vento Liaison at Gloucester Public Schools

### **Gloucester Community Partners**

Peggy Hegarty-Stack, CEO at Action Inc.

Jennifer Beloff, Chief Program Officer at Action Inc

Julie LaFontaine, President and CEO, Open Door

Leah Briere, Client Services Coordinator at the Open Door

Melissa Dimond, President and Executive Director at Wellspring House

Andrew Allen, Director of Education and Career Pathways at Wellspring House

Melba Juez-Perrone, Chief Operating Officer at Wellspring House

Mary Beth Tobin, Director of Job Training Initiatives at Wellspring House

Liz Wuenschel, Director of Shelter Services & Housing Opportunities at Wellspring House

Tanya Cornetta, Family Resource Center Program Manager at Pathways for Children

Monica Pires, Interim Social Service Manager at Pathways for Children

David Houlden, Executive Director at Gloucester Housing Authority

Jen Hapgood, Assistant Executive Director at Gloucester Housing Authority

Liz Auwerda, Assistant Director of Resident Services at Gloucester Housing Authority

Courtney Allen, Director of Communication & Outreach Backyard Growers

Penny Hasseli, MassHire MetroNorth Workforce Development Board

Steve Buckley, Chief Executive Officer at the Greater Cape Ann Chamber of Commerce

Colleen Murdock, Director of Community Relations at the Greater Cape Ann Chamber of Commerce

Patty DeVries, tech instructor at Rose Baker Senior Center

Gloucester Racial Justice Team

**MAPC Staff**

Anagha Devanarayanan, Digital Equity Planner  
Will Pfeffer, Civic Technologist  
Alexa DeRosa, Regional Planning Data Analyst I  
Najee Nunnally, Community Engagement Specialist II  
Abigail Cohen, ACC Fellow  
Stephen Larrick, Digital Services Manager  
Jessie Partridge Guerrero, Director of Data Services  
Javier Gutierrez, Director of Community Engagement  
Camille Jonlin, Senior Economic Development Planner  
Tanaya Tonpay, Public Health and Climate Planner II  
Lindsay Randall, Senior Regional Humanities Specialist  
Tim Viall, Senior Communications Specialist

**Public Agency  
and Community  
Informants**

Community Stakeholders committee  
Essex County Community Foundation (ECCF)  
Massachusetts Broadband Institute (MBI)  
National Digital Inclusion Alliance (NDIA)



## EXECUTIVE SUMMARY

In the 21st century, access to high-speed internet is no longer a luxury, but a necessity for full participation in modern life, a fact that was put on full display during the COVID-19 pandemic. Despite this reality, the city of Gloucester, like many communities, still experiences an acute “digital divide”: while the majority of residents possess fast internet connections, modern computer devices and digital skills needed to take advantage of online life, some members of the community do not—a challenge that disproportionately and persistently impacts certain populations and socio-economic groups.

In contrast to the digital divide, digital equity means that every community member has access to the online opportunities and resources that they need, regardless of their socio-economic status or the neighborhood they live in. Prioritizing and planning for digital equity ensures everyone can participate in society and the economy, access education and training, and take part in civic life, among other essential functions.

This concept of digital equity is especially crucial for Gloucester because we know that access to the internet is not an isolated issue but is instead interrelated to many of the core challenges that residents in Gloucester face. While the City of Gloucester is not officially designated as a “Gateway City,” it shares a similar level of need, cultural and economic diversity, and similar aspirations to build economic value and renew opportunities for residents. From online education and building digital skills, to remote job opportunities, to the ability to access online social programs and telehealth services, digital equity impacts all facets of modern life. As a result, many of the state’s Gateway cities have recognized the importance of digital equity in the work of reinventing themselves, supporting vulnerable residents, and building on their industrial past. Similarly, as Gloucester’s maritime history and economy continue to evolve, the city must invest in digital equity to help ensure that local businesses and workers in Gloucester remain competitive in an increasingly technology-driven economy, and that residents can take advantage of online opportunities and services.

Recognizing this need, in late 2023, the City of Gloucester and the Sawyer Free Library joined the



Massachusetts Broadband Institute’s (MBI’s) [Municipal Digital Equity Planning program](#), and through that program, engaged the Metropolitan Area Planning Council (MAPC) in the development of the community’s first Digital Equity Plan.

The goal of this plan is to identify challenges and opportunities in Gloucester and ultimately to make recommendations to help address barriers and support individuals and families in accessing the internet. MAPC’s planning approach for Gloucester’s Digital Equity Plan was grounded in gathering insights from quantitative data while centering community voices through resident surveys and focus group discussions. Throughout the planning process the municipal officials, community leaders, and residents most impacted were invited to think about and discuss the topic of digital equity through data, research and documentation of the existing conditions and needs.

The resulting plan emphasizes the common framework of the “three pillars” of digital equity – internet access, device access, and digital literacy – and makes recommendations that connect Gloucester’s digital needs to actions, programs opportunities,

and possible funding sources. By addressing the digital divide and its disproportionate impacts on the most vulnerable Gloucester residents, the plan also presents opportunities to drive positive impact in other intersecting domains, including, but not limited to: housing; economic development; public health; education, civic participation; and language access.

While there is much work to do to advance digital equity in Gloucester, the planning process also revealed existing assets and unique strengths to build on, including ongoing efforts by community service providers. The Sawyer Free Library and Gloucester City Hall in particular are central actors, with the Library offering essential digital services such as computer labs where anyone can use public

workstations, receive digital training, or take advantage of device lending programs through which residents can borrow devices to access the internet at home. Gloucester also has a robust network of nonprofit community organizations and advocates who are committed to addressing a range of challenges faced by the community, such as housing, transportation, language access, and employment. These organizations have already begun to incorporate digital approaches and digital equity into their work and are well poised to continue to advance the digital equity goals and recommendations laid out in this plan.

### Summary of Key Findings

The following represents an overview of key insights gathered from digital equity data and observed across conversations with stakeholders during the digital equity planning process in Gloucester.

#### Internet Access

**Too many households in Gloucester lack a home high-speed internet connection.**

10.7% of households in Gloucester do not have access to broadband internet at all. This is the highest percentage of households without access to the internet in neighboring municipalities and among the highest of any municipality in Essex County. Gloucester's downtown shows the highest percentage of households, around 17% to 26%, who have no access to the internet.

**Affordability and lack of consumer choice are key barriers to full broadband adoption in Gloucester.**

Of households with no internet, most have a household income under \$20,000, suggesting that cost burden is a significant barrier to internet access for very low-income households and that affordable internet connection is key to helping those most impacted by the digital divide. The vast majority of Gloucester households are served by only one internet service provider, Comcast. This lack of available consumer choices likely contributes to cost and access challenges.

#### Device access

**Populations most impacted by the digital divide in Gloucester often rely on smartphones and devices made available through public facilities and community programs.**

American Community Survey data shows similarities between the number of Gloucester households with no computer at home (7.1%) and the percent of the total city population with only a smartphone (7.9%). Older residents and those with disabilities face inadequate access to supportive technologies and devices. In focus groups, residents shared that they often used public computers in the library or those in community organizations' offices to meet their device needs. Additionally, residents who have school children also highlighted that they use a Chromebook that is available through the school district's Chromebook lending program. Residents showed interest in training programs that provide them access to devices and internet service for a year after the program.

**Cultural and language barriers compound device access issues for immigrants and non-English speakers.**

Immigrants and newly arrived individuals may have had less access to technology in their country of origin and may have less trust in government programs, as well as more concerns about privacy regarding device-lending programs. In addition, recently immigrated families and families who don't speak English at home reported not using community resources to access devices.

## Digital literacy

### **Digital skills training is needed for device access to be effective.**

There is a need to complement device access efforts for residents in Gloucester with skills training on how to use the available devices. This ensures that device lending and other similar programs are impactful, and the devices are used efficiently.

A lack of digital literacy impacts access to essential services like transportation—especially for older and non-English speaking residents.

The combined need for device access and digital skills for Gloucester residents was especially relevant for high-need residents—particularly older residents and non-English speaking residents—while accessing transportation services, such as the Cape Ann Transit Authority (CATA) On Demand ride-hailing app.

### **A lack of digital skills impacts small business owners.**

Small businesses, and particularly immigrant-owned small businesses, are also disparately impacted by lack of access to adequate digital skills and tools. Focus groups and community meetings indicated that online marketing through setting up a business website or providing listings on Google or Yelp were especially important skills for immigrant small business owners in Gloucester.

### **Many impacted by the digital divide are unaware of existing programs and resources to support digital equity.**

Many residents primarily learn about available programs and training in Gloucester only through word-of-mouth and community interactions. Many are unaware of available services, training, or programs available in their community.

## Summary of Recommendations

Building on data and outreach findings, the digital equity process in Gloucester ultimately resulted in the following short-term and long-term recommendations, summarized below.

## Short-Term Recommendations

### **Expand internet access in Gloucester, focusing on those with the highest need.**

#### **Pilot a publicly accessible outdoor Wi-Fi network downtown.**

Plan and implement an outdoor, publicly accessible Wi-Fi network in downtown Gloucester. Prioritize downtown locations that are easily accessible and can have a high impact for residents who lack reliable internet connections at home.

#### **Support the deployment of free broadband internet at affordable housing sites.**

Explore ways to provide low- and moderate-income residents of subsidized and affordable housing sites with free or low-cost home internet, including pursuing grant programs such as the Mass Broadband Institute's [Residential Retrofit program](#) or [Apartment Wi-Fi program](#). Work with Gloucester Housing Authority and other affordable housing property managers to prioritize sites with high need populations and where resident service coordinators can provide support beyond a technical connection.



### **Raise awareness of existing free public Wi-Fi locations**

Free public Wi-Fi is currently available in some public buildings in Gloucester, such as the library, but such locations are not made readily apparent to residents via a map or other marketing material. Promoting public Wi-Fi locations can help residents who lack adequate at-home internet service to find these locations—especially if maps and other print materials are translated to high-need languages other than English, such as Spanish and Portuguese. Public Wi-Fi locations can also be compiled into an online directory and/or web map and shared on various civic or community websites including the library website, Gloucester Connection, and the City of Gloucester website.

### **Promote lower-cost plans for income-qualified residents**

Increase awareness of lower-cost internet service options for income-qualified residents by working with ISPs and community organizations. Distribute marketing materials about less expensive internet plans sourced from internet service providers to community organizations that serve vulnerable populations. Residents who lost their Affordable Connectivity Program (ACP) subsidy should be prioritized for support in enrolling into low-cost plans.

## **Expand Digital Literacy Programs and Access to Devices**

### **Integrate digital needs assessments into existing client services in agencies across Gloucester**

Existing one-on-one interactions with residents provide an ideal opportunity to also explore needs related to digital inclusion. Case managers and other program staff can provide a full cycle of support that includes assessing needs, evaluating and discussing solutions, referring residents to relevant resources (digital skills training, appropriate devices, affordable connectivity), and following up to check in and evaluate progress. Training and materials should be developed and distributed to support program staff in the incorporation of digital equity into existing services.

### **Provide computer basics literacy programs, meeting high-need populations where they are.**

The most successful computer basics programs offer 12-15 hours of instruction with quality tech support, coupled with an incentive program providing a free device and a year's worth of internet access to qualified individuals who complete the training. The curriculum for computer basics courses typically has four sections covering computer hardware, basic software such as the Google platform (docs, spreadsheets and presentations) or Microsoft Office suite (Word, Excel, PowerPoint), online safety, and online communication. Gloucester should build on the success of previous programs to continue offering basic digital literacy training like this, with a focus on high priority locations, such as the library, community centers, and within existing agencies or organizations serving high-need populations.

### **Expand workforce preparation digital skills programs**

Workforce preparation programs provide intermediate and advanced training in digital skills for a variety of jobs including tech support, web development, and user experience research and design. Employment opportunities for candidates with these types of skills are typically higher paying and offer the potential for advancement and career growth. To support such programs in the community Gloucester should explore partnerships with job training or tech skills organizations, such as those involved in the Digital JEDI Consortium through MassHire Metro North Workforce Board.

### **Build trust with high need populations who may be fearful or skeptical of online participation**

Support residents who feel fearful and vulnerable about participating online—particularly older adults and immigrant families—with programs, one-on-one appointments, and educational materials on topics such as cybersecurity and internet privacy; consumer advocacy and protection resources; fake news, conspiracy theories and disinformation; consumer fraud and scams; and parental content controls. Ensure that trust is maintained with these populations through the provision of accurate information from trustworthy sources in relevant languages.

### **Offer “how-to” online video tutorials in high-need languages**

Video tutorials in Spanish and Portuguese are the primary way that non- and low- English-speaking residents navigate services on their smartphones. Videos like these should be the standard approach when offering resources on where to find public digital literacy programs and access to devices in Gloucester, as well as how to use online tools or apps for transportation, housing, and other essential services. Such videos could be added to the existing Gloucester Connection website or incorporated into other existing community and workforce programs.

## **Building Capacity**

### **Form a Gloucester Digital Equity Steering Committee**

Form a Gloucester Digital Equity Steering Committee to convene community stakeholders, coordinate efforts, and ultimately oversee progress toward implementation of digital equity recommendations, including the recommendations of the digital equity plan. Such a Steering Committee could be co-led by the City's IT Director and the Sawyer Free Library Director and could utilize guidance from the National Digital Inclusion Alliance (NDIA) on building a digital inclusion coalition.

### **Launch the Digital Learning Lab at the Sawyer Free Library**

The Digital Learning Lab, which is part of the major 2025 Sawyer Free Library capital project currently under construction, will be the first public, purpose-built learning space for quality digital literacy educational programs in Gloucester. Anticipated to open in the fall of 2025, the Digital Learning Lab will serve basic computer skills, workforce preparation, as well as more advanced skills, supporting experimentation and mastery of a wide range of technologies. In addition to digital skills programs, broadband, and device access, expert staff will support both group and independent learning. The City of Gloucester should support and promote the Digital Learning Lab to help to unlock the potential of community members who can contribute to innovation, entrepreneurship, creative expression, and economic growth. Digital Learning Lab should take advantage of its location within the library to serve as a center of information for Gloucester's digital literacy assets and an anchor institution for a referral network to other community service providers.

### **Build on the Digital Equity Asset map to develop a regularly-updated directory of digital equity resources.**

The City of Gloucester's Digital Equity webpages and the Library's Gloucester Connection website are tools for providing current information on community resources to the public, policy makers, funding agencies, City administration and senior managers, and community organizations delivering programming and services. These websites should include resources on digital equity. More easily accessible program and resource information will benefit high need residents most directly but can also provide secondary benefits to municipal staff who seek to understand community assets, identify see gaps, demonstrate results and report progress over time to funders.

## Long-Term Recommendations

### Expanding Internet Access

#### **Implement publicly accessible Wi-Fi networks in open space locations**

Build on short term public Wi-Fi provision to plan and implement additional outdoor, publicly-accessible Wi-Fi networks in locations where residents and tourists congregate, including locations beyond downtown. This will also support the goals in the Gloucester Open Space and Recreation Plan, particularly to enhance Gloucester’s Recreation Land, as well as to improve management and stewardship through partnership with local organizations. Priority locations could include the West Gloucester WTBA station, Stage Fort Park and Good Harbor Beach.

#### **Bring additional private Internet Service Provider (ISP) options to Gloucester**

Giving consumers additional choice for broadband internet connection should be a priority for Gloucester to facilitate market competition and ultimately more affordable service for residents and businesses. Continuing and expanding direct working relationships with major internet providers, such as Xfinity and Verizon Fios will be critical for exploring how the private sector might provide new broadband infrastructure. Gloucester should also consider negotiating regionally along with other underserved communities, such as Rockport, to apply pressure on ISPs/court additional private sector infrastructure and service.

#### **Explore the feasibility of public broadband infrastructure in Gloucester**

Although it won’t be easy, another way to expand access and apply downward pressure on broadband subscription costs is to explore options for leveraging public infrastructure. This could range from conducting a feasibility study for the provision of municipal broadband, to more modest or strategic approaches such exploring an “Open Access” network model or providing public internet service to targeted sites or neighborhoods.

### Expand device access and digital literacy

#### **Increase opportunities for students to pursue technology internships and careers**

The implementation of new digital literacy programs and public digital learning labs creates new opportunities for part-time, paid student interns—who have often grown up learning relevant digital skills—to deliver digital tutoring assistance and one-on-one tech support. These opportunities provide meaningful work experience for students and open the door to advanced certification programs and well-paying careers.

#### **Expand and scale up digital literacy programs in proportion to community needs**

Gloucester should evaluate the efficacy of digital literacy programs piloted or launched in the short term and scale up what is working in ways that meet community needs. Whereas short term programs will likely leverage existing program staff and budgets, scaling up these programs will require additional task and resources, including: hiring digital equity coordinators to manage program personnel, recruitment, promotion, scheduling, budgeting, etc.; formalizing partnerships with educational institutions; and procuring a greater number of computers and hotspot devices to promote and support program participation.

### Build capacity & expand partnerships

#### **Expand computer labs in public spaces, including beyond downtown other Gloucester neighborhoods**

While the area of highest need for residents experiencing the digital divide is downtown, residents of many other neighborhoods are also in need of digital access support, including , including computer devices, digital literacy programs and staff support. Expanding computer labs in public spaces throughout the community, including neighborhoods outside of downtown helps to meet people where they are and can reduce barriers to participation related to transportation and time constraints.

#### **Support small businesses with digital capacity building**

Gloucester should further engage small businesses to understand and support their digital equity needs. Priority digital skills training identified include online marketing through setting up a business website or providing listings on Google or Yelp. An asset already in place is the Greater Cape Ann Chamber of Commerce, which is well positioned to assist business owners both through direct programming and by spreading the word about additional programs and resources available to the small business community.

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## INTRODUCTION

The City of Gloucester strives for equity as a core community value in serving its residents. In today's world, this increasingly includes ensuring equity in the context of digital access and technology. Digital equity is central to helping individuals and families access adequate social, economic, and civic opportunities. This section provides background context on Gloucester's current digital inclusion work and the stakeholders who undertake this effort. It also introduces key concepts that define digital equity and its intersection with other core community values and needs.

### Background

Gloucester, like many cities, faces significant challenges with broadband access, inequity, and the digital divide, impacting various population groups disparately. Residents living on the wrong side of the digital divide suffer more from inadequate internet service, lack of devices, or limited digital literacy.

In 2023, the City of Gloucester and the Sawyer Free Library joined the Massachusetts Broadband Institute's [Municipal Digital Equity Planning program](#) and engaged the Metropolitan Area Planning Council (MAPC) in the development of the city's first Digital Equity Plan. This plan provided Gloucester an opportunity to think about and discuss the topic of digital equity as a community through research and documentation of the existing conditions and needs. It also allowed Gloucester to articulate a vision for digital equity and propose a set of actionable recommendations to overcome the digital divide. Ultimately, we hope Gloucester's first ever digital equity plan lays the groundwork to continue this discussion, and move to action—action to address evolving challenges for the residents most in need, empower the City to access funding for impactful changes, and enable the most-affected residents to fully participate in our modern society.



The planning process, conducted over the course of 11 months beginning in November 2023, revealed the community's diverse digital needs and also revealed ongoing efforts by existing community service providers. Unsurprisingly, the Sawyer Free Library and the City are central to advancing digital equity. The Library offers essential digital services, including spaces where the public can access the internet and devices available through computer workstations and lending programs. Gloucester has a robust network of community organizations and stakeholders committed to addressing a range of intersecting challenges, such as housing, transportation, food, and employment. As more services move online, residents facing barriers in these essential areas are increasingly affected by the digital divide. Consequently, these organizations are now also helping residents navigate the digital landscape effectively.



Despite Gloucester not being a designated Gateway city<sup>1</sup>, it faces a similar level of need and calls for comparable attention. The city strives to grow into a technology-driven economy and overcome challenges in crucial economic measures, such as job creation, employment in knowledge industries, educational attainment, and income levels<sup>2</sup>. For older residents in Gloucester, there is a clear need to focus on supporting their digital access and internet safety needs. Furthermore, Gloucester's diverse population underscores the importance of addressing language access, ensuring that non-English-speaking families can integrate into the community and access opportunities and services effectively.

### What is Digital Equity?

This plan describes existing conditions and the community's needs in accessing digital tools and the skills to use the technology; it also includes recommendations to achieve digital equity in Gloucester. But first, what is digital equity?

***“Digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services.”***

- National Digital Inclusion Alliance

Digital equity means that everyone has access to the online opportunities and resources that they need, regardless of their socioeconomic status or the neighborhood they live in. Appendix 1 dives into the Digital Equity Framework and analyzes digital equity in Gloucester. This plan adopts the common framework of the “three pillars” of digital equity: internet access; devices; and digital literacy.

### Digital Equity is interconnected to core community issues

Digital equity is not an isolated issue but is instead interrelated to many of the core challenges that residents in Gloucester face. By addressing the digital divide and its disproportionate impacts on the most vulnerable Gloucester residents, this plan presents an opportunity to drive impact in other intersecting domains.

As more and more of our world moves online, from education and socializing to work, shopping, healthcare, government, and community basic services – digital access is not just one more community issue area to be addressed. It is increasingly a prerequisite to addressing every issue area. The following sections provide an overview of how digital equity relates to various community issue areas.

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<sup>1</sup> Gateway city definition: <https://massinc.org/our-work/policy-center/gateway-cities/about-the-gateway-cities/#:-:text=The%20Legislature%20defines%20a%20Gateway,%2C%20Springfield%2C%20Taunton%2C%20Westfield%2C>

<sup>2</sup> Reconnecting Massachusetts Gateway Cities: Lessons learned and an Agenda for Renewal <https://masstech.org/sites/default/files/2022-04/Gateway%20Cities%20Report.pdf>



## Digital Equity + Housing

- High speed internet access is an increasingly vital aspect of adequate housing<sup>3</sup>.
- A building's wiring and infrastructure can impact the internet options available to residents.
- High cost of housing / cost burden can force households to have to choose between basic necessities, sometimes sacrificing internet access.
- Applications for affordable housing and other housing related services (such as rent payment portals) are increasingly online.
- Low-income residents of affordable housing experience lower levels of internet access and adoption. As of 2016, 46% of families living in public housing do not have high-speed internet at home or rely solely on smartphones<sup>4</sup>.
- Housing authority-managed sites and other multi-dwelling unit buildings can provide opportunities for shared broadband amenities or services.



## Digital Equity + Economic Development

- Research increasingly shows that digital inclusion is a prerequisite for economic inclusion and for closing generational wealth gaps<sup>5</sup>.
- Digital access is necessary for a variety of important economic activities that take place online, from working remotely, to searching for a job, upskilling through online training, to e-commerce and online entrepreneurship.
- Digital skills are required for 92% of job opportunities, and jobs that require more digital skills pay more than jobs that require fewer<sup>6</sup>.
- A community's broadband coverage and adoption is associated with the number of jobs and economic output<sup>7</sup>, and individuals with broadband subscriptions report higher income than those without<sup>8</sup>.
- Small businesses owners need digital skills to market and promote their business online.
- Technology companies and many other employers require top-tier broadband speeds to locate in a community.
- Digital equity interventions often create job opportunities and opportunities to train workers with high-tech skills, from cabling buildings, to device refurbishment and IT support.

<sup>3</sup> National League of Cities (2021, December 9). Digital Equity Playbook: How City Leaders Can Bridge the Digital Divide. <https://www.nlc.org/resource/digital-equity-playbook-how-city-leaders-can-bridge-the-digital-divide/>

<sup>4</sup> ConnectHomeUSA Playbook. [https://www.hud.gov/sites/dfiles/PIH/documents/ConnectHomeUSA%20Playbook%202019%201-8\\_Final.pdf](https://www.hud.gov/sites/dfiles/PIH/documents/ConnectHomeUSA%20Playbook%202019%201-8_Final.pdf)

<sup>5</sup> Ochillo, F. (2022). The Economic Consequences and Generational Impact of the Digital Divide. Belfer Center for Science and International Affairs. <https://www.belfercenter.org/publication/economic-consequences-and-generational-impact-digital-divide>

<sup>6</sup> Bergson-Shilcock, A., Taylor, R., & Hodge, N. (2023). Closing the Digital Skill Divide. National Skills Coalition. [https://nationalskillscoalition.org/wp-content/uploads/2023/02/NSC-DigitalDivide\\_report\\_Feb2023.pdf](https://nationalskillscoalition.org/wp-content/uploads/2023/02/NSC-DigitalDivide_report_Feb2023.pdf)

<sup>7</sup> (2021). Broadband for all: Charting a path to economic growth. Deloitte. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/process-and-operations/us-charting-a-path-to-economic-growth.pdf>

<sup>8</sup> Curtis ME, Clingan SE, Guo H, Zhu Y, Mooney LJ, Hser YI. (2022) Disparities in digital access among American rural and urban households and implications for telemedicine-based services. J Rural Health. 38(3):512-518. doi: 10.1111/jrh.12614. Epub 2021 Aug 6. PMID: 34355427; PMCID: PMC9827725

## Digital Equity + Public Health

- Digital equity is a “super” social determinant of health, meaning it influences others, such as healthcare, education, and employment<sup>9</sup>.
- The COVID-19 pandemic spotlighted the internet’s impact on these domains, when medical appointments, school, and certain jobs moved online during the COVID-19 pandemic and made digital access vital to meeting many daily needs associated with health outcomes.
- With the rise of telehealth appointments, online patient portals, and secure messaging services for communicating with medical staff, access to healthcare is increasingly predicated on digital access.

## Digital Equity + Education

- Remote learning allows students to attend school, complete assignments, and experience educational programs from home.
- Teenagers with computers at home are 6-8% more likely to graduate high school than those without, when controlling for individual, parental, and family differences<sup>10</sup>.
- Middle and high school students without home internet access or who depend on a cell phone for internet access tend to have lower GPAs, lower homework completion rates, and lower standardized test (like SAT) scores, and are less likely to plan to attend college or pursue STEM-related careers<sup>11</sup>.
- Education exposes students to digital skills that can expand learning and introduce future career pathways.

## Digital Equity + Civic Participation

- Digital access and inclusion also enable civic participation, especially as online government services expand<sup>12</sup>.
- Government permits and services are increasingly accessed online via program websites and online application forms.
- Many public meetings can now be accessed via online videoconferencing, allowing more flexible remote participation, but also presenting challenges for those without digital access.
- Public announcements and community alerts are shared online on websites and via online applications.
- Community organizing and other forms of social participation in civic life increasingly take place on social media.

## Digital Equity + Language Availability

- Language access is key to ensuring that digital content is accessible and usable by all and especially by individuals who are not native English speakers. For individuals with limited English proficiency, independent internet access can help them feel more included as they work on improving their language skills<sup>13</sup>.
- Digital language support includes translating online websites, tools, and services to all the languages in demand. It provides staff support for interpretation services to promote participation and engagement for services of housing, healthcare, education, employment, and more that have now moved online.
- Digital literacy support that is tailored to the needs of non-English speakers to improve their proficiency in using digital tools helps close the gap in how they access opportunities.

<sup>9</sup> Turcios, Y. (2023, March 22). Digital Access: A Super Determinant of Health. <https://www.samhsa.gov/blog/digital-access-super-determinant-health>

<sup>10</sup> Home Computers and Educational Outcomes: Evidence from the NLSY97 and CPS. <https://www.federalreserve.gov/pubs/ifdp/2008/958/ifdp958.pdf>

<sup>11</sup> Hampton, K. N., Fernandez, L., Robertson, C. T., & Bauer, J. M. Broadband and Student Performance Gaps. James H. and Mary B. Quello Center, Michigan State University. <https://doi.org/10.25335/BZGY-3V9>

<sup>12</sup> Hovik, S., Giannoumis, G.A. (2022). Linkages Between Citizen Participation, Digital Technology, and Urban Development . In: Hovik, S., Giannoumis, G.A., Reichborn-Kjennerud, K., Ruano, J.M., McShane, I., Legard, S. (eds) Citizen Participation in the Information Society. Palgrave Macmillan, Cham. [https://doi.org/10.1007/978-3-030-99940-7\\_1](https://doi.org/10.1007/978-3-030-99940-7_1)

<sup>13</sup> Supporting digital inclusion for adults with low English language skills. [Supporting Digital Inclusion for Adults with Low English Skills | Good Things Foundation](#)

### Digital Equity in Gloucester

Our review of digital equity in Gloucester started with mapping key stakeholders and assets supporting internet access, devices, and literacy, as well as providing related social support to residents experiencing the digital divide.

#### Sawyer Free Library

The Sawyer Free Library serves as a key resource for digital equity in the Gloucester community, leading the way in digital inclusion efforts. Their programs and efforts are guided by their core values to foster a space for belonging and community-building that is focused on improving access to opportunities for all residents, as well as being sensitive to people's evolving technology needs. This includes enhancing free access to the internet and technology equipment, as well as providing supportive and safe spaces for learning.

The Sawyer Free Library's 2025-2029 strategic plan outlines future goals that will contribute to digital equity in the community. Planned new spaces in the 2025 Sawyer Free Library include a 100-seat community room with a complete audio-visual system that will host presentations, performances and meetings, and a Digital Learning Lab for everyone from digital literacy beginners to seasoned entrepreneurs and hobbyists to discover and explore technology. A group classroom setup, as well as collaborative workstations, digital media creation stations, a digitization station, and two audio recording studios provide the needed equipment and software for staff-supported or independent learning. These spaces will amplify opportunities for all residents of Gloucester to access devices and digital tools that help build their skills.

Additionally, the Sawyer Free Library serves as a hub of [community resources](#) and connects residents to relevant stakeholders. Their resource page, which has an embedded translation feature, connects to the public school, health centers and hospitals, and community organizations through [Gloucester Connection](#), as well as provides resources for parents, teachers, and English language learners.

In addition to on-site, free public computers, the Library's Devices to Go program offers digital access through short-term loans of hotspots and Chromebooks. However, the availability of these devices is insufficient for the demand.

#### Gloucester Public Schools (GPS)

GPS plays a crucial role in advancing digital equity within the community by offering technological support to students and families and by bridging the language barrier for non-English speaking households. The school district addresses a significant segment of the community affected by the digital divide. Its [Information Technology Department](#) oversees and maintains the network infrastructure and devices used by students. This includes managing the district's 1-to-1 Chromebook program for grades 3 through 12

and providing each student with an email account. Additionally, the district employs a bilingual family liaison who assists students, parents, and families in utilizing digital tools and devices in their native languages. To tackle internet connectivity challenges, the district offers hotspots and partners with Comcast to provide affordable internet access. The GPS [ongoing improvement plan](#) is focused on maintaining a comprehensive approach to digital equity, enhancing students' ability to utilize digital resources for educational and career development. This plan includes creating an electronic student portfolio within the existing career and technical education program and aims to enrich learning experiences through videotaped model engagement strategies for staff professional development.

The [Multilingual Learner Instruction](#) at GPS works to engage students and families by offering information, resources, and support to navigate community services. The program leverages students' cultural, linguistic, and educational backgrounds to enhance English language proficiency, a key step for non-English speaking families to access digital resources and improve their internet navigation skills.

### Other key stakeholders

#### Gloucester Housing Authority

The Gloucester Housing Authority (GHA) is dedicated to providing adequate and affordable housing, fostering economic opportunity, and ensuring a discrimination-free living environment for its residents. They support 1,300 households in the Cape Ann area through various programs, including Public Housing, Rental Assistance, Homeownership, and Resident Services. Many of GHA's units are occupied by low-income individuals, seniors, people with disabilities, and working families, including non-English speakers, who are significantly affected by the digital divide due to limited home internet access. According to the U.S. Department of Housing and Urban Development, 46% of families in public housing lack high-speed internet or rely solely on smartphones<sup>14</sup>. The GHA aims to mitigate digital isolation by offering digital literacy and device access programs. Additionally, the Resident Services department provides personalized support, helping residents apply for programs such as the Housing First Program, Family Self-Sufficiency Program, and Senior Resident Services Initiatives.

#### Essex County Community Foundation

[Essex County Community Foundation \(ECCF\)](#) serves 34 towns and cities of Essex County by managing charitable assets, strengthening and supporting nonprofits, and strengthening the leadership initiatives. Their focus on [digital equity efforts](#) includes their commitment to provide all residents with the access, education, and equipment needed to navigate the digital environment. ECCF funds digital equity efforts for the community by partnering with Tech Goes Home to provide digital literacy training in prime locations within Gloucester. Their grant program provides residents with free

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<sup>14</sup> Ibid.,4.

or affordable access to the internet and reliable devices, trains individuals and business owners to use online tools and devices, and, most importantly, provides Gloucester access to a county-wide network of support.

### MassHire Workforce Board

The MassHire Metro North Workforce Board oversees the [Digital JEDI Consortium](#) that provides services across the Metro North and North Shore areas. Gloucester is one of the cities where the JEDI Consortium works to reduce digital inequities in workforce and career development experienced by Black, Indigenous, People of Color (BIPOC), immigrant, and low-income communities to increase upward economic mobility. In Gloucester, they partner with Wellspring House to provide individualized digital services to residents through the Digital Navigator program. Digital navigators provide live support to the community for technology needs and also assist with offering other resources like housing, food security, childcare, and economic development.

### Planning Approach

This Digital Equity Plan serves as a strategic document articulating a vision and recommendations that came from a process of understanding the community's digital equity needs, interests, and assets. This framework will serve as a guide for future municipal decision-making, potential investments, and new programs to support digital equity efforts. Ultimately, the goal of this plan is for its vision and recommendations to enhance internet access and usage, particularly for populations most socially and economically disadvantaged in Gloucester.

MAPC's planning approach for Gloucester's Digital Equity Plan is grounded in the following core principles:



#### **Data Informed and Community Led**

To understand residents' access to opportunities and services that the residents have access to, the planning team takes insights from quantitative data, as well as the community voice through resident surveys and focus group discussions.



#### **Planning for Action**

The focus of digital equity planning services is to set the foundation for future project implementation and program planning. The plan connects Gloucester's digital needs to ongoing MAPC programs like Wi-Fi procurement in public housing and advising on future funding resources for program support.



#### **Public, Multidisciplinary, Collaborative, and Regional**

The planning process and recommendations are designed for Gloucester to collaborate with neighboring municipalities through regional strategies in digital equity service delivery.

This community- and data-driven approach brings awareness to unintentional barriers as well as to resources that have a disproportionate impact on more vulnerable residents in Gloucester. This plan centers the needs of Gloucester residents most affected by the digital divide and is tailored to fit the capacity of municipal staff and other local implementers. MAPC envisions that the plan will help inform the following goals:



**Prioritize residents' digital equity needs** as a prerequisite to further accessing essential services like healthcare, education, job opportunities, transportation, and social services. The assessment identifies existing conditions, including assets, needs, and opportunities. The action plan develops an implementation strategy to address the digital divide with concrete projects, resources, and other interventions.



**Identifying and advocating for policy decisions:** Municipalities have the regulatory capacity in permitting and licensing internet services. This plan guides how regulatory authorities can enhance digital access, empowering municipalities to advocate for state-level policy changes.



**Future funding and capital investment:** The American Rescue Plan and Infrastructure Investment and Jobs Act (IIJA) offer significant funds for broadband infrastructure from the federal government. This plan provides an inventory of existing available funding for near term and long-term actions specifically focused on digital equity. Additionally, it identifies funding that addresses broader community and economic development actions where digital equity fits in.



**Ongoing program needs:** Achieving and maintaining digital equity requires continual effort. Municipalities, central to funding and coordination, can refer to this plan for ongoing guidance in addressing digital access challenges.



## EXISTING CONDITIONS

The first step in the Gloucester Digital Equity Planning process was to identify and analyze existing conditions in the city. This included research into infrastructure and Internet Service Provider availability, analysis of American Community Survey data, and other available data such as the FCC's 477 data and openly available speed test data.



## Digital Equity Data

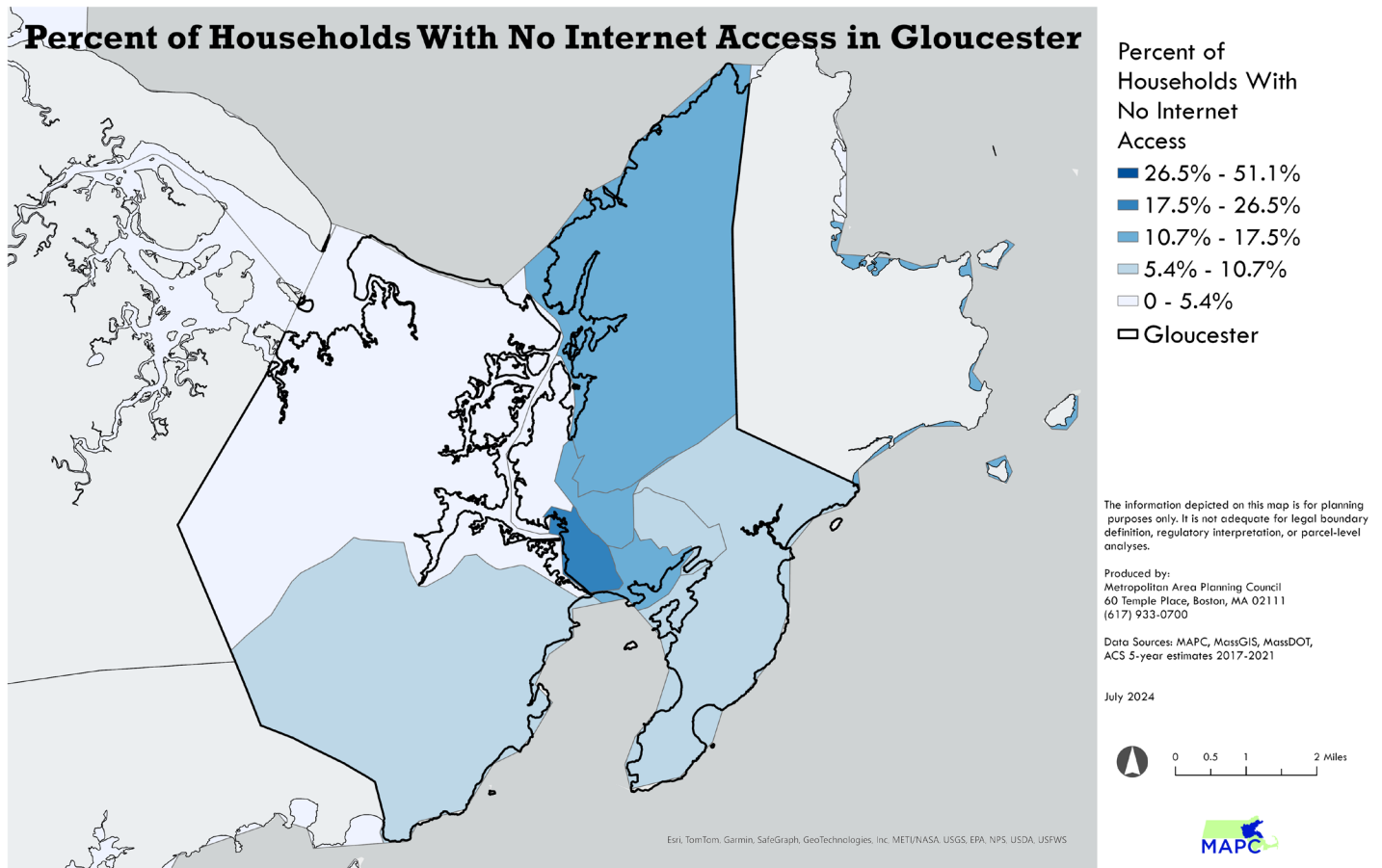
### 1. Internet service

#### 1.1. Internet Service availability in Gloucester: disparity in access to internet service

Access to internet service is not distributed uniformly across Gloucester. Some households don't have access to internet service at all, and the distribution of these households across census tracts highlights the geographical disparities of internet access. Gloucester's downtown shows the highest percentage of households, around 17% to 26%, who have no access to the internet.

**Gloucester's downtown shows the highest % of households, 17% to 26%, who have no access to internet.**

Table 4 under the device access section further compares the percentage of households without internet access in Gloucester with other cities. It highlights that 10.7% of households don't have access to the internet, the highest percentage value in comparison to the neighboring municipalities and Essex County.



Map 1: Geographical distribution of percentage of households with no internet access

All addresses in Gloucester are served by one Internet Service Provider (ISP) - Comcast. In particular, 89.9% of the addresses are served by only one service provider, while 9.32% of addresses are served by more than one. The availability of only one service provider for internet service highlights

one of the primary challenges – a lack of available choices – that Gloucester residents face (Map 2).

Provider	Technology	Percentage of addresses served
Comcast Cable Communication	Cable	99.3%
T-mobile USA, Inc.	Fixed Wireless	0.06%

Table 1: Internet service providers in Gloucester

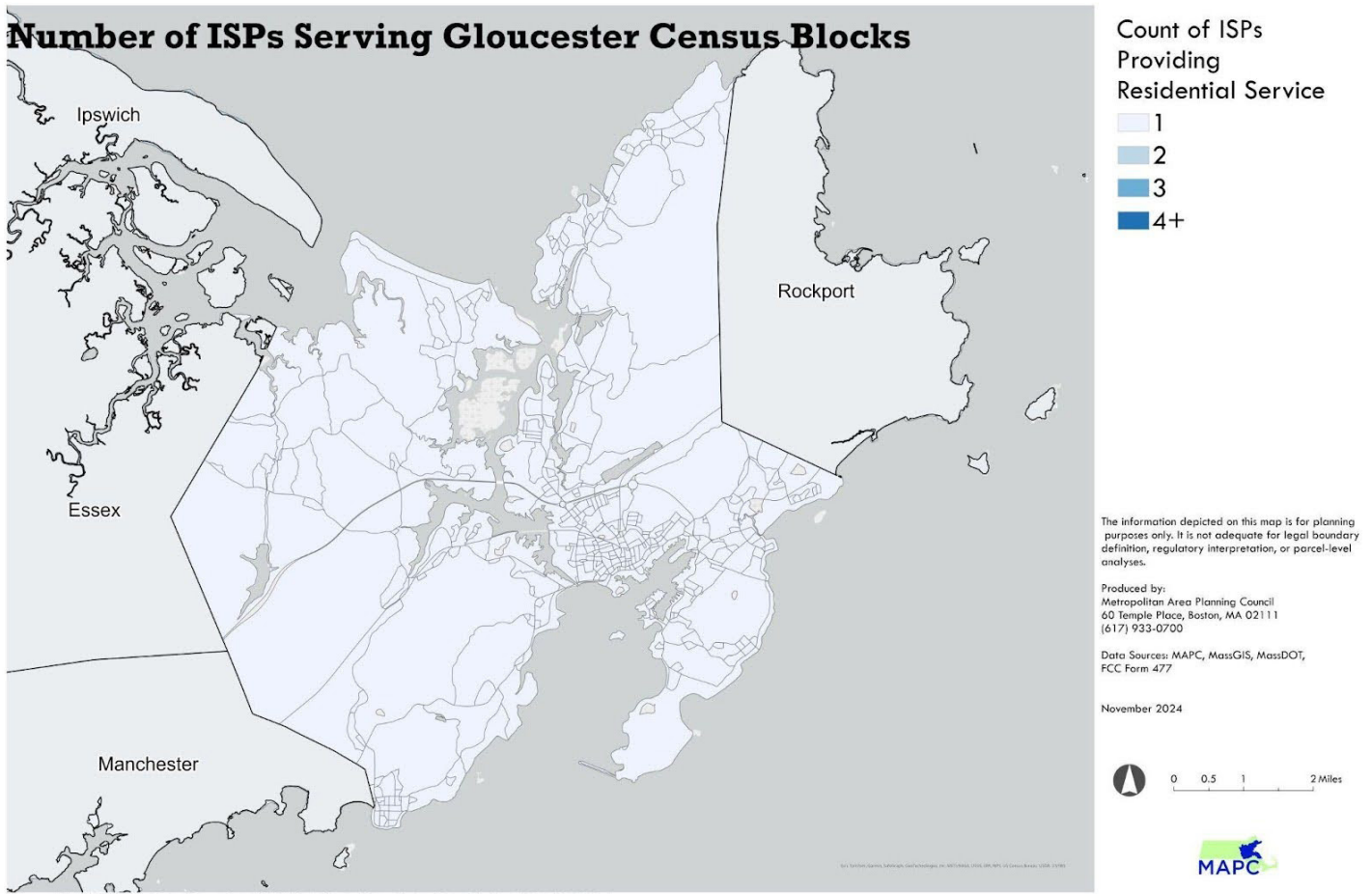
**1.2. Internet infrastructure and market in Gloucester: lack of competition of Internet Service providers**

A key factor in whether it is possible to provide reliable, high-speed broadband access is infrastructure on which that service relies. While this Digital Equity Plan is not a broadband or infrastructure plan, evaluating the existing infrastructure is a key component of understanding root causes and potential solutions to low or unevenly distributed service quality.

The vast majority of individuals who access the internet do so via an Internet Service Provider, or ISP. ISPs provide the link between a personal computing device (computer, tablet, smartphone, or any number of connected devices like televisions, gaming consoles, smart home devices, etc.) and the broader internet. In Gloucester (as in most of the U.S.), these ISPs are all private companies. There are several technologies used to bring internet service into peoples’ homes: fiber; cable; fixed wireless; and satellite. People may also access the internet using a mobile device (a dedicated hotspot or a smart phone with “tethering” capabilities) or may rely exclusively on Wi-Fi signals provided in public spaces by libraries, schools, cafes, or other establishments. Each of these different modes of connection has an impact on speed, cost, and reliability. (For more information about network speed and technology, refer to Appendix 2, Network Technology, and Appendix 3, How is speed measured and reported.)

All internet service providers must self-report information about the service they provide to the Federal Communications Commission (FCC) using Form 477. This form requires an ISP to report the fastest plan they offer within a given census block (for Cable, Fiber, or Fixed Wireless providers), or provide a coverage map (for Satellite and Cellular providers). Form 477 lists the number of “Broadband Serviceable Locations,” or BSLs served by each technology. The FCC defines a BSL as “a business or residential location in the United States at which mass-market fixed broadband Internet access service is, or can be, installed.” In Gloucester, there are 13,383 BSLs. A single BSL can also include multi-family units and apartment buildings, where many of Gloucester’s high-need population groups reside. The form does not account for the quality of internet connection that residents in multi-family units utilize or provide information about cost, how many people subscribe to the plan being listed, or what the other “lower” plans are; it only provides information about the fastest plan available for at least one location within a census block.

In Gloucester, there are 13,383 Broadband Serviceable Locations.



Map 2: This map illustrates the count of ISPs providing non-DSL residential services with at least 100 mbps download and 10 mbps upload speeds by census block. (Source: FCC Form 477)

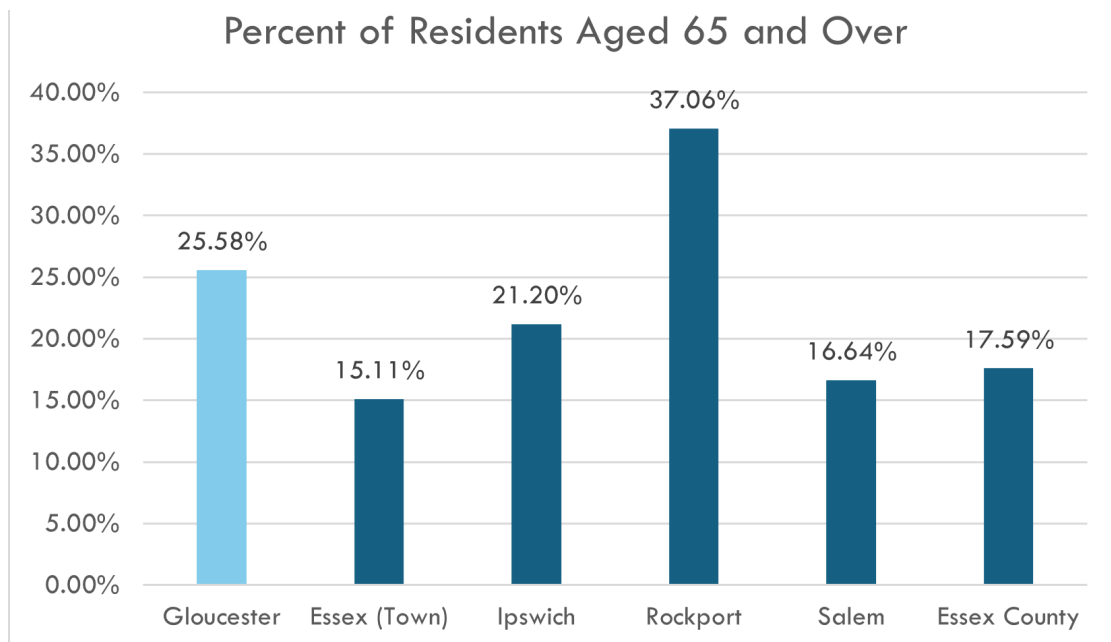


Chart 1: The chart above shows the percentage of Broadband Serviceable Locations (BSLs) that each Internet Service Provider (ISP) serves with at least 25 mbps download and 3 mbps upload speeds, and the technology they use to provide service. Source: FCC Form 477 Data: <https://mapping.massbroadband.org/map>

### 1.3. Form 477 Reported Service Availability in Gloucester

#### Cable internet

In Gloucester, Comcast is the only service provider for cable internet, serving 99.3% (or 12,234) BSLs. Comcast’s maximum advertised speed for this service is 1,200 megabits per second download and 35 megabits per second upload.

Provider	Covered BSLs	% coverage	Max speed
Comcast	12,234	99.3	1200mbps/35mbps

Table 2: Cable internet details; Source: FCC Form 477 Data: <https://mapping.massbroadband.org/map>

#### Fixed Wireless internet

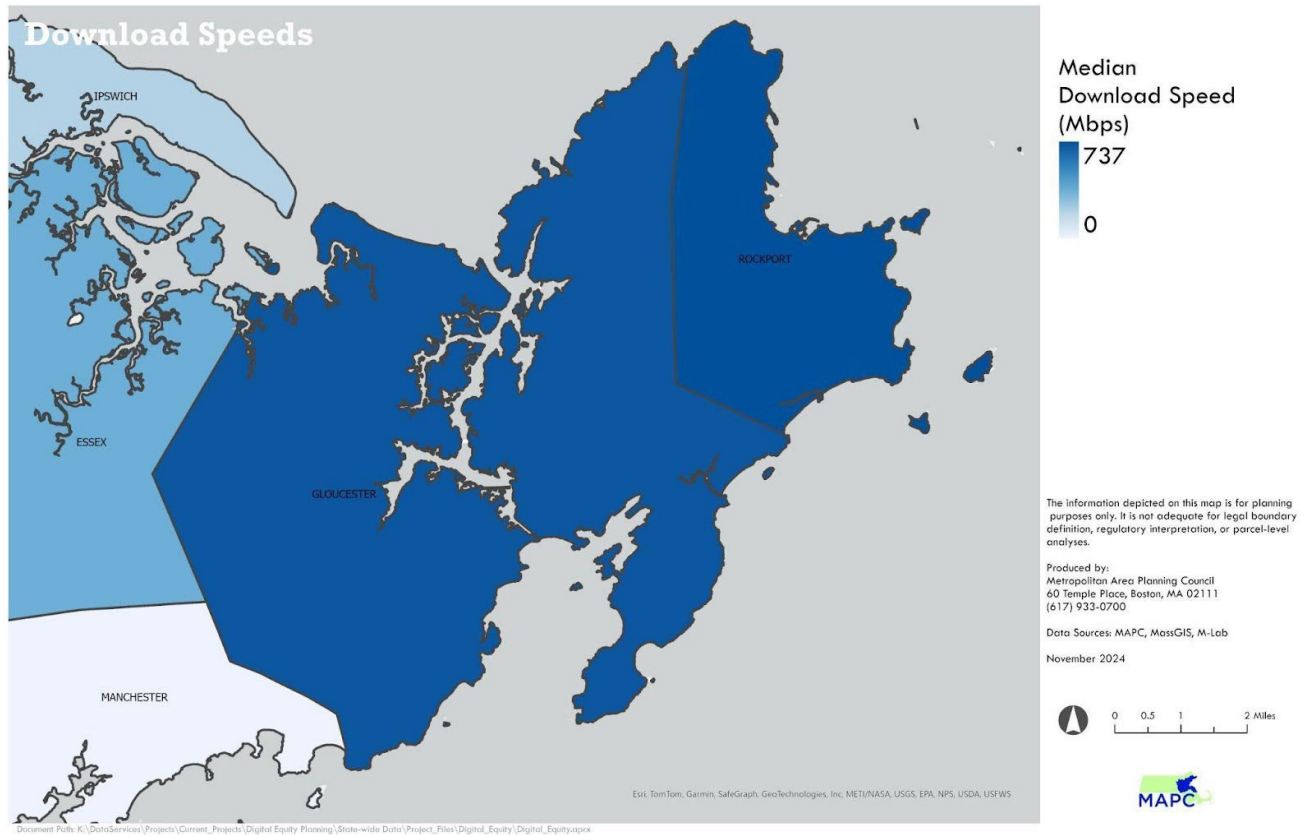
In Gloucester, T-mobile provides service to 8 BSLs that have an advertised maximum of 100 mbps download and 20 mbps upload.

Provider	Covered BSLs	% coverage	Max speed
T-mobile	8	0.06	100mbps/20mbps

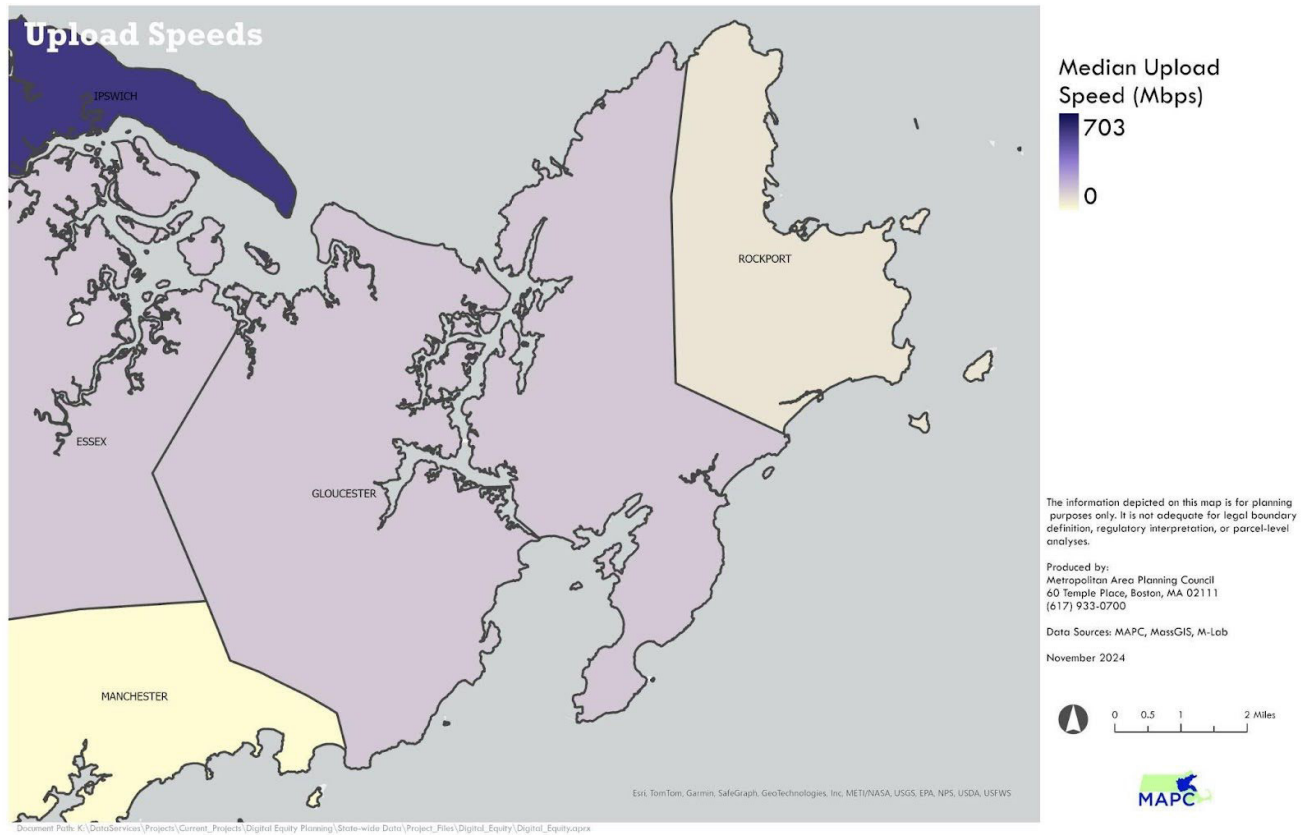
Table 3: Fixed wireless internet details; Source: FCC Form 477 Data: <https://mapping.massbroadband.org/map>

### 1.4. Connection speed

Speed test data allows comparison between the advertised speeds to the lived experience of residents. The maps below show the Measurement Lab data (M-Lab), an open-source project that provides the speed test tool built into Google search. The median download speed experienced in Gloucester between January and September 2023 was 239 mb/s, a speed fast enough for nearly any home use, while the median upload speed was 23 mb/s. In total, 91.23% of speed tests resulted in download speeds above 100 mb/s, while 79.98% were over 25 mb/s. This illustrates that among residents who have access to internet service, a majority of them experience a service that is of good quality and speed.



Map 3: Median download speeds (Source: M-Lab)



Map 4: Median upload speeds (Source: M-Lab)

The above two maps compare the speed tests in Gloucester with its neighboring cities. The neighboring cities exceed the 100 mb/s download speed threshold, and Map 3 shows that for Gloucester, it is comparable to Rockport but higher than Essex and Manchester by the Sea. The upload speed test map shows that the median upload speed for Gloucester is higher than Rockport and Manchester by the Sea and comparable to Essex. However, the median download speed for Gloucester is still lower than the required minimum of 25 mb/s.

## 2. Affordability

### 2.1. Internet connection by income

The American Community Survey (ACS) also provides data about internet connection by income. While the majority of the Gloucester population overall does have an internet connection, the percentage of households with no internet connection are concentrated in the lowest income group whose income is less than \$20,000 (33%). The table below also shows the stark disparity in access to internet connection, with only 3.6% of households earning more than \$75,000 having no internet.

The percentage of households with no internet connection are concentrated in the lowest income group.

Household income	Percentage with no internet connection
Under \$20,000	33%
\$20,000 - \$75,000	15.1%
Over \$75,000	3.6%

Table 4: Lack of internet across income groups; Source: ACS 2018-22

This indicates that affordable internet connection is critical to addressing internet connection needs for Gloucester residents most impacted by the digital divide. The community context section dives deeper into the characteristics of the low-income residents in Gloucester and maps their geographical distribution within Gloucester.

### 2.2. Affordable Connectivity Program

The Affordable Connectivity Program (ACP) was a federal subsidy program available to households living at or below 200% of the Federal Poverty Line (\$60,000 for a family of 4), which provided a \$30 monthly subsidy towards any qualifying internet service plan. This program was enacted in 2021 as part of the Bipartisan Infrastructure Law, and originally funded with \$14.2 billion. However, the FCC announced plans to wind down the ACP program on January 11, 2024, because Congress had not appropriated additional funding to sustain the program. The FCC stopped accepting new sign-ups or renewals for the program on February 7, 2024, and the program is expected to run out of money in or around April 2024.

24.7% of eligible households enrolled for the Affordable Connectivity Program subsidy.

According to the [Benton Institute's "Affordable Connectivity Program Enrollment Performance Tool,"](#) of an estimated 5,008 households in Gloucester meet this income requirement and 1,239 of them were enrolled in the subsidy. This shows that only 24.7% of the eligible households enrolled for the ACP subsidy. The enrolled households are comparable to the ACP

enrollment rate for Greater Boston as a whole (28%). Greater Boston’s ACP enrollment rate is the 4th lowest enrollment rate of any metro area in the country. For comparison, in the highest enrollment metro area, Detroit, 65% of eligible households are enrolled in the subsidy program.

The wind-down of the ACP meant that the 1,239 enrolled households in Gloucester lost access to this subsidy in April 2024. This represents a loss of approximately \$37,170 of subsidies every month, or \$446,040 annually, exclusively for low-income households. While internet service providers do offer some low-cost, income qualified plans (Comcast offers “Internet Essentials” at \$10/month or \$30/month for faster service and Astound offers “Internet First” at similar rates), many families who relied on the ACP subsidy did so in conjunction with these plans, making their internet service free.

**The wind-down of ACP meant 1,239 enrolled households in Gloucester lost access to subsidy.**

The wind-down of ACP represents a truly urgent need for Gloucester’s most vulnerable residents, as well as an opportunity for the city to step in to help address the digital divide at a local level, in the wake of federal inaction. The Community Needs section of this report further elevates the resident experiences with internet affordability.

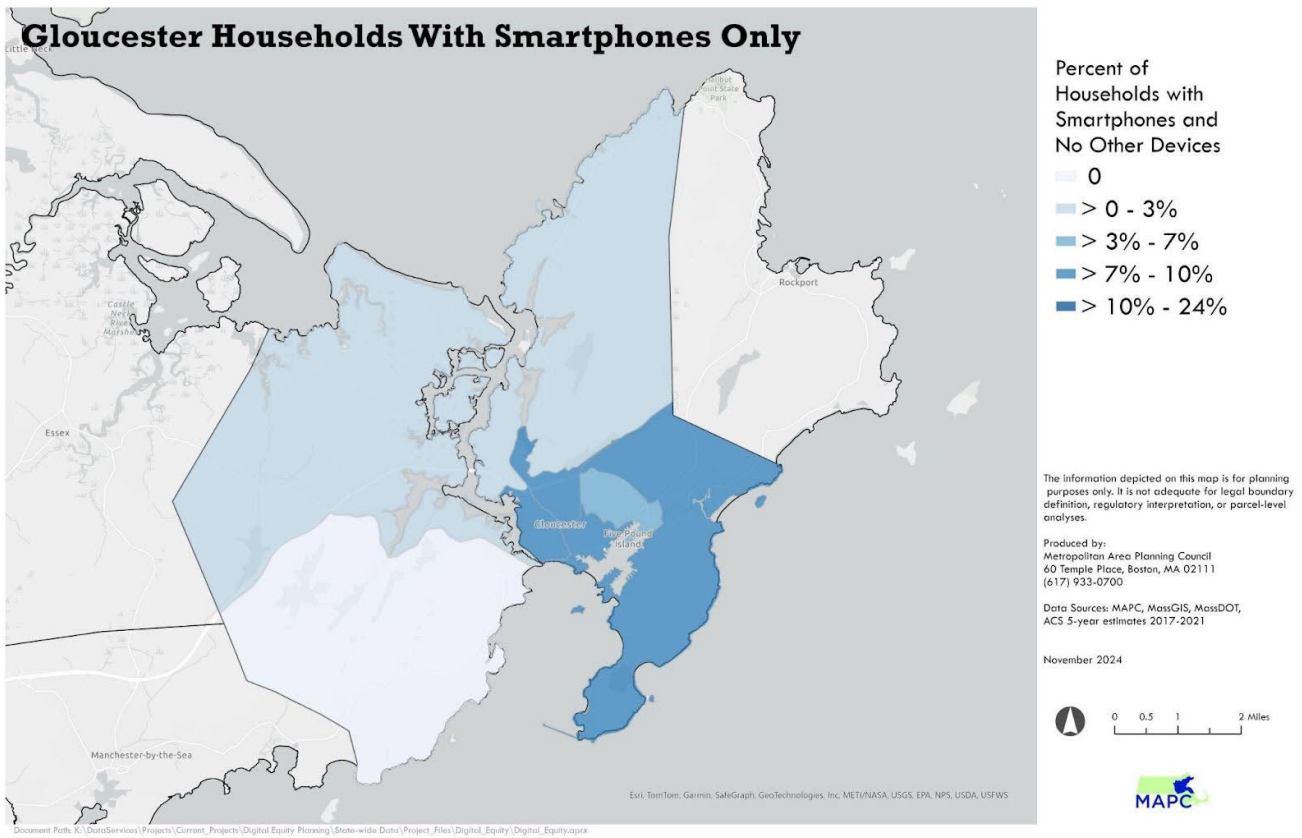
### 3. Device access

The ACS gives insight into useful questions about connection and device access, giving a broad view of how Gloucester residents access the internet. The following table contains data from the 2018-22 ACS 5-year estimates:

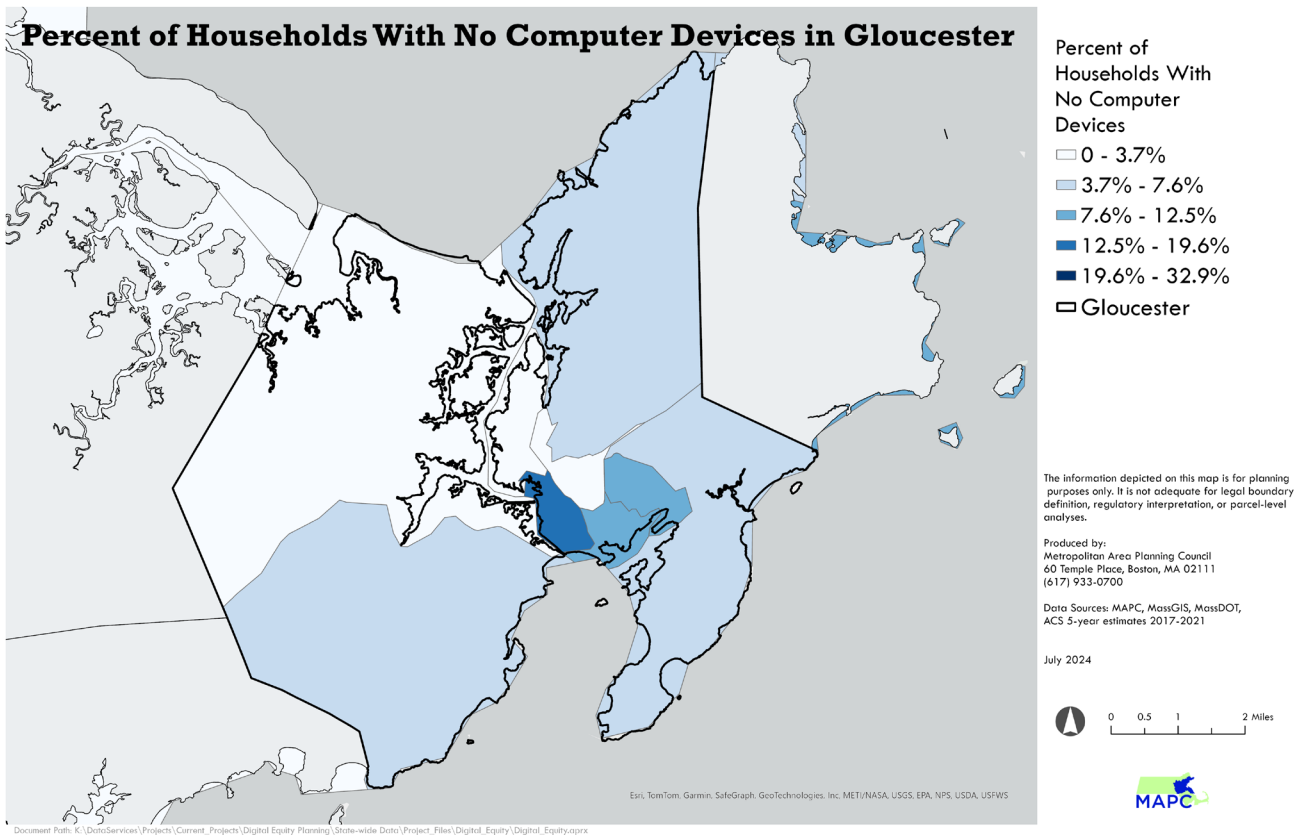
Community	%of HH with no internet connection	%of HH with no computer	% population with only a smartphone	Total households
Gloucester	<b>10.7%</b>	<b>7.1%</b>	<b>7.9%</b>	13,259
Rockport	11%	6.5%	4.4%	3,282
Ipswich	6.2%	4.5%	1.1%	5,610
Salem	9.7%	7.3%	6.3%	19,887
Manchester by the Sea	1%	0.3%	0	2,101
Essex county	9.65%	6.04%	7%	310,059

Table 5: Lack of internet and device access. Source: ACS 2018-22

The percentage of households dependent on smartphones only for their device use is the highest for Gloucester in comparison to the neighboring municipalities and to Essex County. Map 5 below shows that in Gloucester, this percentage is higher in the downtown area and east Gloucester neighborhoods.



Map 5: Distribution of households with smartphones only across Gloucester. Source: ACS 2017-21



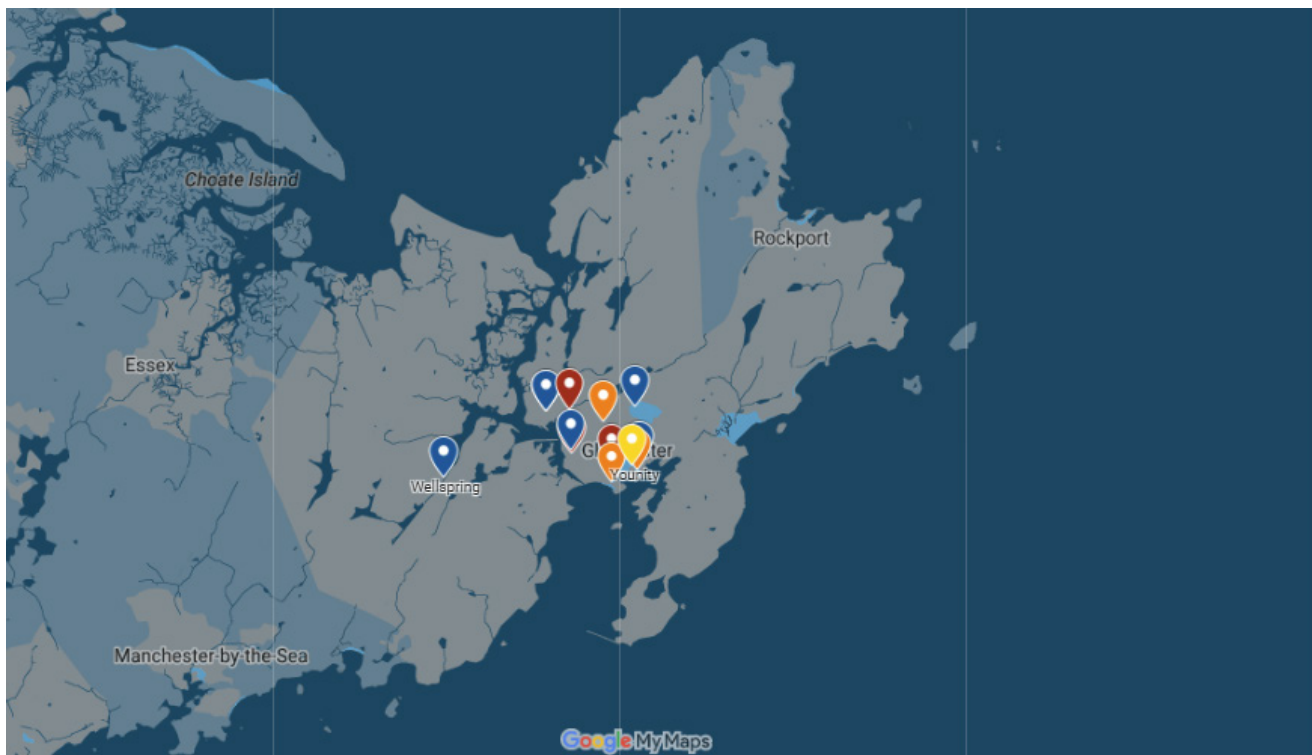
Map 6: Distribution of households with no devices across Gloucester. Source: ACS 2017-21



Map 6 above indicates that in addition to having a higher percentage of households reliant on smartphones, the downtown area also has a high percentage of households without access to any devices. In total, the percentage of households in Gloucester without any computer devices is 7.1%, higher than the percentage measure for Essex County and only marginally lower than Salem (refer to Table 4).

### 4. Digital Equity assets

The digital equity assets map below is the product of an asset mapping exercise, a method that identifies existing community strengths, skills, and connections. It uses this documentation to balance the identified digital equity needs and barriers in Gloucester by providing a solution-oriented lens. The map below codifies the community's digital equity assets, while also highlighting the assets in neighboring municipalities.



Map 7: Digital Equity assets in Gloucester

Appendix 4 lists the existing network of assets, detailing the digital equity needs that they address. In Gloucester, there are entities like the Sawyer Free Library, the City's IT department, and the Essex County Community Foundation (ECCF) that have dedicated areas of work to address the digital equity needs of the residents. Additionally, Gloucester also boasts a rich network of community organizations and partners who serve the residents most impacted by the digital divide and address the digital equity needs through their programs and services.

### 4.1 Community partnerships as an emerging practice in Gloucester

Gloucester has a unique landscape of social, economic, and civic support networks, with strong connections and relationships among them. This presents an opportunity for digital equity efforts to plug into and expand the services that residents can access. Gloucester Connection, a community-grown initiative, is a tool that provides a one-stop shop for residents to have access to available support in housing, food, education, transportation, health and wellness, and recreation.

Stakeholders shared that they use the [Gloucester Connection](#) platform and the network also to translate the materials they produce and distribute them in different languages to reach all the residents who are in need of support. The partnership also serves as a way for stakeholders, working closely with residents, to identify further needs and support for families who need them.

***“If there’s a family struggling or a resident struggling, we might get a referral to assist. It’s usually connecting people to the open door to action, to wellspring, to pathways, to senior care.” - Gloucester Housing Authority***

***“I think we connect well together and I can think of many examples where several organizations together helped a specific individual or family and it typically has worked very well.” - Wellspring***

In addition to providing social support, partners dedicated to serving small businesses are also active in connecting with and reaching immigrant-owned small businesses. This demonstrates that the network is a platform for community service providers to comprehensively serve the residents to advance both social and economic upliftment.

***“...from an employment standpoint and an economic standpoint the more digitally literate everyone is , the better is going to help the labor force.” -Gloucester Housing Authority***

The network of partner organizations is not just an opportunity for residents most in need to have access to the available public services, but it also creates a space for new immigrant families to connect with each other and build relationships at the community-level. It works towards breaking down the feelings of isolation and exclusion individuals and families may face when they newly come to Gloucester.

***“One of the things I love about living in Gloucester is that the community is so warm and welcoming. I think it can be warm and welcoming in very specific ways, very specific pockets. And so when there’s the opportunity to help people connect with other groups of people and other communities, I think that that’s really special and powerful. And you can tell that people respond to it very positively” - Backyard Growers***

## Gloucester's Community Context and Vulnerable Population Groups

The digital equity data above demonstrates the overall digital infrastructure and access needs for Gloucester. However some population groups experience a higher level of impact. This plan elevates their voices and experiences with issues of digital divide. This section on Gloucester's community context data gives a data snapshot of population groups that were prioritized as a result of facing some of the greatest negative consequences of the digital divide.

These population groups, outlined below, include the following: low-income residents; residents of color; non-English speakers; immigrants; older residents; and residents with disabilities. The desire to center the experiences and needs of these populations in particular informed our discussions with city staff and community organizations. The Community Needs section further highlights the specific needs of these priority population groups identified through the community engagement strategies.

### Community Context: Geography and Economy

#### Geographical context

The City of Gloucester is a coastal community covering 25 square miles and has more than 65 linear miles along the coastline of Massachusetts. Around 80 percent of the city's residents reside on an island that makes up 50 percent of the city's total land area. The island is linked to the mainland through three bridges<sup>16</sup>.

**Around 80% of the town's residents reside on an island that makes up 50% of the city's total land area.**

Gloucester's geography plays a crucial role in shaping the community's infrastructure. In discussions with municipal stakeholders and leaders of community organizations, it was highlighted that the city's geographic isolation creates challenges in providing internet connectivity. The map below shows Gloucester's physical layout, surrounded by water, with roads and MBTA lines serving as the primary connections between different areas. Additionally, stakeholders noted that many residents experience dropped cell signals in certain parts of the city.

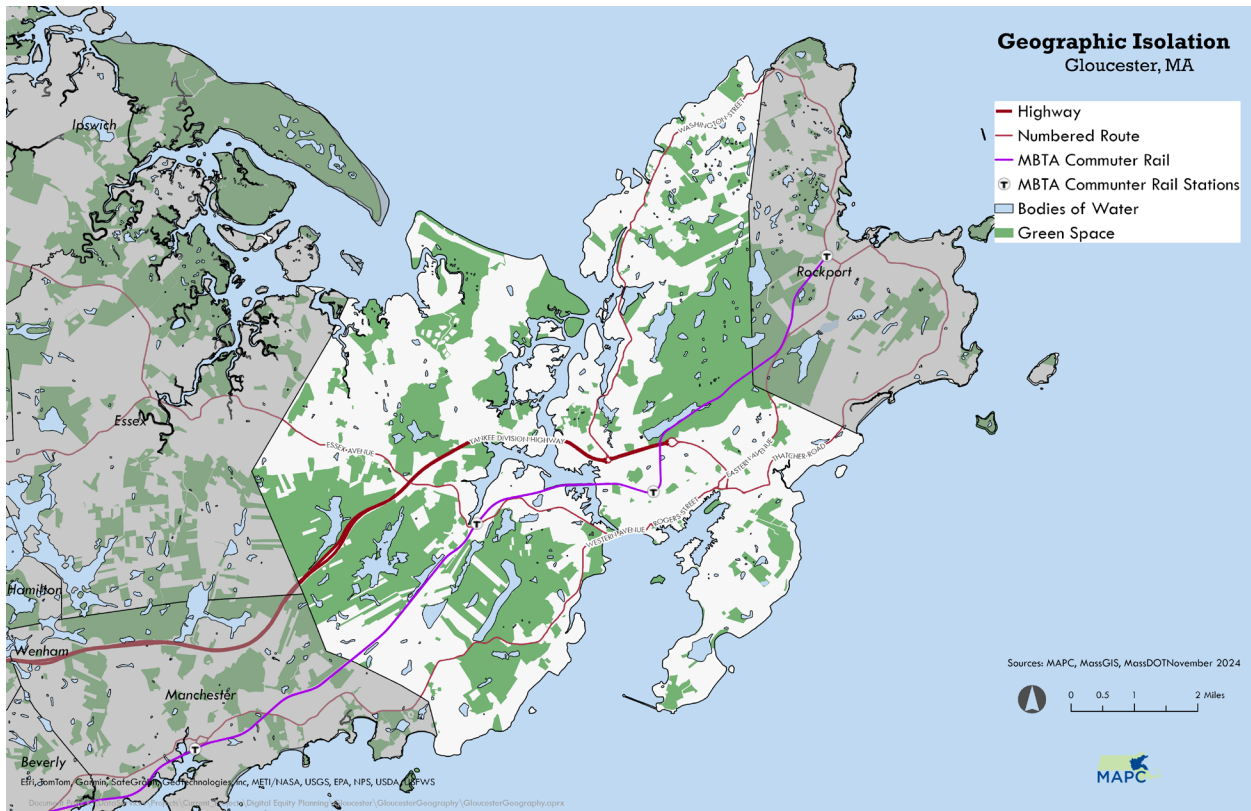
***"...we don't even have the infrastructure in the city to do that [use federal resources] yet... it is going to have to deal with being on the ocean and the physical makeup of the land in question." - Wellspring***

#### Economic context

Gloucester's economy has a rich maritime history with the fishing industry playing an integral role. It serves as an economic anchor for the Greater Cape Ann region. According to 2022 Employment and Wages (ES-202) data, the manufacturing sector has the most jobs in Gloucester with approximately 19% of the jobs. It is followed by healthcare, social assistance, and retail trade. The city has a strong manufacturing and industrial base, with an average monthly employment of 2,131 (Data source: ES 202 Employment

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<sup>16</sup> EPA case study. [https://www.epa.gov/sites/default/files/2016-01/documents/casestudy\\_si\\_gloucester-massachusetts.pdf](https://www.epa.gov/sites/default/files/2016-01/documents/casestudy_si_gloucester-massachusetts.pdf)



Map 8: Physical context of Gloucester as an island

& Average Weekly Wages). The city is also a popular tourist destination with an active waterfront and vibrant downtown. The most recent comprehensive plan for the City of Gloucester shows that the city has a higher unemployment rate and a slower employment growth than Essex County and the state<sup>17</sup>. As Gloucester’s economy continues to evolve with its strong manufacturing base and rich maritime heritage, technology skills and infrastructure have become crucial to ensuring the city’s workforce can meet the demands of modern industries and remain competitive in the growing blue economy.

The city has a strong manufacturing and industrial base, with an avg montly employment of 2,131.

## Priority Populations Most Impacted by the Digital Divide

### 3. Low-income residents

Affordability is the number one barrier to closing the digital divide in Massachusetts, and in the City of Gloucester. Most homes have the underlying broadband infrastructure to connect, so those without a broadband subscription often go without high-speed internet simply because they can’t afford it. Factors like income, poverty, and cost-burden are some of the most important population characteristics to consider in understanding and planning for digital equity in Gloucester.

Table 6 below highlights the distribution of households across different income brackets. While 23.2% of households have incomes exceeding \$150,000, reflecting a significant portion of Gloucester households in this

<sup>17</sup> Gloucester Comprehensive Plan Existing Conditions Profile <https://drive.google.com/file/d/1QJlxOhizyZwRGxHbzxHSUvHwS9D-7Qc-p/view>

highest income bracket, approximately 11.8% of households earn under \$20,000 per year and 21.3% of households earn between \$20,000 to \$50,000 each year. These lower income brackets represent the households most likely to be experiencing barriers to digital access and the impacts of the digital divide.

Approximately 11.8% of households earn under \$20,000 per year.

Income level	# HH	% HH
Households with Income under \$20,000	1,567	11.8%
Households with Income \$20,000 to \$49,999	2,822	21.3%
Households with Income \$50,000 to \$74,999	1,443	10.9%
Households with Income \$75,000 to \$99,999	1,715	12.9%
Households with Income \$100,000 to \$150,000	2,624	19.8%
Households with Income over \$150,000	3,088	23.2%

Table 6: Proportion of households per income bracket. Source: ACS 2018-22.

Cost burden	# HH	% HH
Cost burdened households	5,410	42.17%
Cost Burdened Households paying 30-50% of Income	2,857	22.27%
Cost Burdened Households paying 50% or more of Income	2,553	19.9%

Table 7: Cost-burdened households in Quincy. Source: ACS 2018-22

In Gloucester, 5,410 households are cost-burdened (Table 7 above), with over 22% spending 30-50% of their income on housing. Additionally, more than 19% of the households are severely cost burdened and spend over 50% of their income on housing. This demonstrates that a significant portion of households face severe housing affordability issues in Gloucester. This financial pressure means that basic necessities like groceries, health care, rent, or transportation can compete with lower income Gloucester residents' ability to afford internet service subscriptions, or up-to-date computing devices (ACS).

In Gloucester, 5,410 households are cost-burdened.

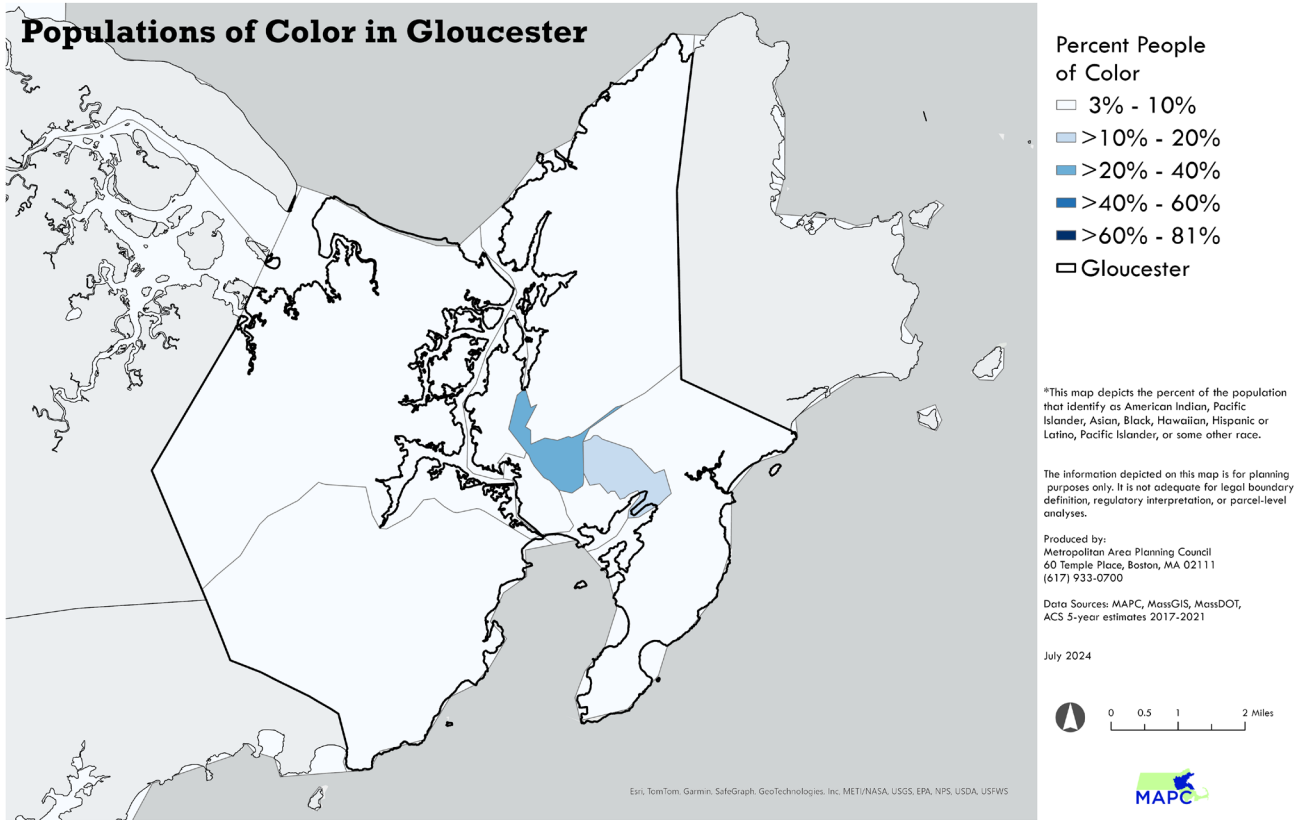
#### 4. Residents of Color, Non-English Speakers, and Immigrants

The digital divide disproportionately impacts residents of color, non-English speaking residents, and immigrants. Even when accounting for income, families of color are less likely to have a broadband subscription and are more likely to depend on mobile wireless internet. Those with limited English language proficiency may face barriers to accessing the internet and needed information. Newly arrived individuals may need additional support in accessing technology and online services.

Those with limited English language proficiency may face barriers to accessing the internet and needed information.

Approximately 89.7% of Gloucester residents identify as non-Hispanic white, 2.5% of residents identify as Asian, 1.2% of residents identify as Black or African American, and 0.1% identify as American Indian or Alaska Native. Roughly three percent of Gloucester residents identify as two or more races, and 4.1% of the population identifies as Hispanic or Latino. The map

reflects a high percentage of residents of color across Gloucester and near downtown Gloucester.



Map 9: Geographical distribution of Populations of Color in Gloucester. Source: ACS (2018-2022)

In Gloucester, 2.03% of the residents who speak languages other than English do not speak English well (ACS). Out of 1,682 residents in Gloucester who speak European languages (5.98%), 24.9% do not speak English well. There are 892 Spanish speakers in Gloucester (3.17%) and 13.7% of them do not speak English well.

Recent immigrant communities to Gloucester come from Morocco, Syria, Guatemala, Egypt, Honduras, Brazil, China, Afghanistan, South Korea, Iraq, Uganda, Mexico, and Senegal<sup>18</sup>. In conversations with City staff, we heard about the existing barriers to language access that non-English speaking residents of Gloucester experience. Language access barriers exist for immigrant small business owners to build their business, newly arriving families trying to access government resources, and parents and caregivers engaging with schoolwork or helping their children with prevention services.

**Out of 1,682 residents in Gloucester who speak European languages (5.98%), 24.9% do not speak English well**

***“Tech barrier is more apparent with parents and caregivers. This is largely because there could be a language barrier with parents and they are just less tech savvy” - Prevention Services***

<sup>18</sup> Immigration and its impact on Gloucester. [Immigration and its Impact on Gloucester – Gloucester Lyceum & Sawyer Free Library](#)

*“There is a language barrier. Some of these families don’t have language and literacy in their language.” - Gloucester public schools*

*“[There are] limitations for employees because of language barriers. Language is a way for professional growth and retention.” - Cape Ann Chamber of Commerce*

## 5. Older residents and residents with disabilities

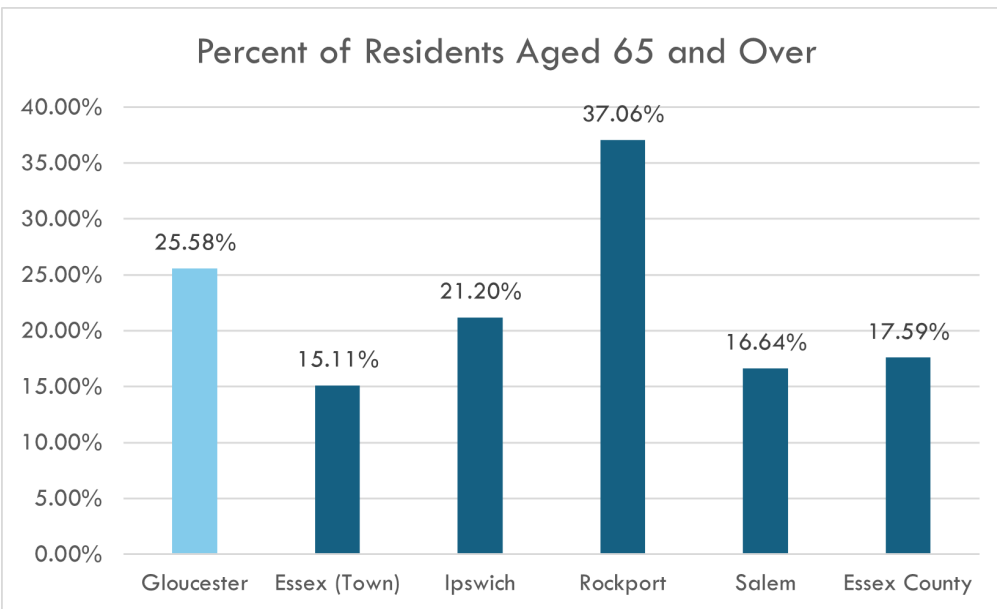
Older residents and those with disabilities also face significant barriers to digital equity, including physical limitations and inadequate access to supportive technologies and devices. Engagement with City staff also highlighted the existing barriers to digital literacy and digital use for older residents. This includes their preferences and abilities to use digital tools and services.

*“Dealing with individuals who have increased difficulties with cognitive retention is also a difficulty that can be specific to seniors. There are also seniors who need minimal help.” - Elder Services*

*“Need parallel systems for those who aren’t agile to transitioning to the digital world” -Elder Services*

*“The elderly struggle with online services. They can come in-person and someone will help them.” - Health Department*

The chart below shows that Gloucester has a little more than 25 percent of its residents who are 65 years old and above. In comparison to its neighboring municipalities, this measure is on the higher end, only following Rockport.



In Gloucester, a little more than 25% of its residents are 65 years old and above.

Over nine percent of Gloucester population reports living with disability.

Over nine percent of the Gloucester population reports living with a disability, including 4.6% with ambulatory disability, 4.4% with independent living difficulty, 3% with cognitive difficulty, 3.4% with hearing disability, 1.5% with visual disability, and another 1.8% with self-care difficulty. (ACS).



## COMMUNITY NEEDS ASSESSMENT

A robust community engagement and outreach processes was central to this plan. Discussions with residents most impacted by the digital divide and other key stakeholders informed the planning team's understanding of community needs, challenges and opportunities, and, ultimately, target recommendations.



### Community Outreach

The digital equity planning process aimed to engage residents and community organizations representing the covered population groups outlined in the previous section- and particularly communities most impacted by the digital divide. In addition to targeting priority population groups, each phase of conversation in turn informed additional subsequent. The outreach strategy included three phases, and various outreach methods (see further details in the “Outreach Phases” table included in Appendix 5):

- Key informant interviews
- Community stakeholder interviews
- Public meetings
- Resident focus groups
- Resident surveys

The first phase of engagement involved one-on-one interviews with City staff from various departments, who shared insights into Gloucester's existing digital equity challenges and helped inform the community organizations



involved in phase two. The second phase focused on community organizations, whose input shaped key findings of the needs assessment and laid the groundwork for direct resident engagement through focus group discussions. In the final phase, MAPC engaged with older and non-English-speaking residents, gathering their experiences with internet access, devices, and digital literacy support, which are detailed in the key findings. These findings also reflect broader community needs as highlighted in the survey responses.

After completing the community outreach and engagement that contributed to the needs assessment findings, MAPC consulted with community partners to prioritize recommendations for Gloucester. A share-out meeting was held with community organization leaders to review the findings and discuss potential recommendations. Participants helped identify the highest-priority recommendations that would most benefit the residents they serve, while also highlighting strategies they could most feasibly support. Survey respondent demographics

In addition to the above in-person outreach, MAPC also administered a digital equity survey, designed by the Mass Broadband Institute. In total, MAPC received 37 survey responses. The following details the breakdown of population groups reached.

### Age

40.5% of survey respondents were between the age 60-74 years and 18.9% of the respondents were between 45-59 years respectively.

- 40.5% between 60 to 74 years
- 18.9% between 45 to 59 years
- 10.8% 75 years and older
- 2.7% between 18 to 24 years old

### Race and Ethnicity

- 64.9% of the respondents identified as White or Caucasian
- 5.4% as Black or African American
- 2.7% identified as Asian or Asian-American

### Household size

- 29.7% of the respondents are from 1 person households
- 29.7% are from 2-person households
- 16.2% are from 4-person households

### Annual household income

- 27% of the respondents have an annual household income of \$60,000 or more
- 18.9% with less than \$22,000
- 13.5% with \$45,000 - \$52,999

### Person with disability

- 13.5% identify with disability in walking or climbing steps
- 5.4% identify with disability in hearing even if using a hearing aid
- 5.4% identify with disability in remembering or concentrating
- 5.4% identify with disability in seeing even if wearing glasses
- 21.6% of the respondents are in affordable housing

## Focus group demographics

In the month of May 2024, the MAPC team engaged in focus group outreach, conducting three focus group discussions collectively involving 22 Gloucester residents. The discussions, spanning 60 to 90 minutes each, were conducted in-person. It was held in partnership with Open Door, Gloucester Housing Authority, and Wellspring to meet the residents where they are. Participants for the focus group included older residents, residents with disabilities, and those with limited English proficiency.

### Key findings

Community outreach activities and the associated qualitative and quantitative data produced resulted in the finding that digital needs in Gloucester are diverse and widespread. The need for internet access, devices, and digital support is seen at an individual level, as well as a community level. Each person experiencing the digital divide experiences a different extent of barriers to accessing the internet, devices, or digital literacy.

***“I think that there’s a difference between individual need and community need... knowing the barriers that are specific here, each one person is going to have a very different barrier. Language can be a barrier. Food can be a barrier, shelter can be a barrier.” - Wellspring***



Disparity in the barriers that Gloucester residents face also demonstrated that some population groups are at a higher risk of experiencing barriers that intersect across housing, transportation, employment, and language access. They are the most vulnerable population groups, whose needs are elevated in this report.

***“Barriers in Gloucester: transportation, language, cost of living. These filter down into having access to the internet, etc. These all intersect.” - Action Inc***

Through a series of interviews with City staff and community organizations, as well as other stakeholders, survey data analysis, and focus group discussions, the most impacted populations by the digital divide in Gloucester are older residents, non-English speaking residents and new immigrants, residents with disabilities, and low-income residents. Additionally, immigrant-owned small business owners are also disparately impacted by lack of access to adequate digital skills and tools. Where terms like “residents” are used in the findings presented below, this often refers more specifically to these priority populations who were targeted for inclusion in focus groups and/or were the subject of discussions with community based service organizations and other stakeholders..

## 1. Internet connection

Resident and stakeholder engagement highlighted that in Gloucester, many residents—particularly older adults, low-income residents, immigrants, and non-English speakers—need better access to broadband internet. Even residents with existing access to internet service at home experience issues with affordability as well as with quality and reliability.

### 1.1 High need populations face persistent challenges to at-home internet access

Survey responses illustrated that 81% of participants have Xfinity or Comcast Cable Corporation as their Internet Service Provider (ISP), with the remaining participants using Verizon, T-Mobile, or Cape Ann Communications. Community engagement data showed that Gloucester residents, particularly priority population groups, experience issues with accessing internet service at home. In our focus group with Spanish-speaking residents, we heard that many residents don't have access to the internet at home and primarily rely on their phones to access the internet. One resident also shared that they chose to not subscribe to broadband at home to limit their children's use of the internet, reflecting differing cultural norms that may result in some households thinking of the internet as a luxury, rather than a necessity.

***"I don't pay for home internet at home because my children will be on it the whole time. If I can limit the use, it will work." - Spanish-speaking resident via an interpreter***

Outreach with community service providers further highlighted that access to the internet is dependent on residents' ability to use the devices that they own and how to navigate the internet. For this reason, at-home internet access should not be considered the only measure of digital equity, as it is heavily influenced by residents' access to devices and their digital skills.

### 1.2 Residents and community service providers in Gloucester believe the internet is so vital to everyday life that it should be treated as an essential utility

The need to recognize internet service as an essential utility, like water, electricity, gas, etc. was a theme heard from both residents and community nonprofit service providers in the community. Residents shared how essential access to the internet is for a wide variety of purposes including education, job searching, communicating with family and friends, finding housing, and much more. Conversely stakeholders shared that lack of access to the internet puts them at the risk of being unable to undertake any of these activities easily and efficiently. Residents with unreliable access shared that if they could access more affordable, reliable, and higher quality internet they would use it in more ways and have a higher quality of life. Other residents shared examples of how use of the internet has already impacted quality of life, including examples of residents using technology to build a career, learn English, correspond better with school for their kids, find housing, in addition to being able to use the internet for recreational purposes like watching movies, listening to music, and reading news.

In our focus group with Spanish-speaking residents, we heard that many residents don't have access to the internet at home and primarily rely on their phones.

Residents with unreliable access to internet shared that if they could access more affordable, reliable, and higher quality internet they would use it in more ways and have a higher quality of life.

However, because broadband internet has not been recognized as an essential utility to which universal, affordable access is required, internet service is not currently reliable and good quality for everyone uniformly in Gloucester. Community service providers emphasized the urgent need to recognize the internet as an essential utility to address not just digital equity challenges, but challenges in access to education, housing, and job training and other opportunities to move up the socio-economic ladder—all of which are now shaped by residents' access to the internet.

***“There are many divides that exist in Gloucester, but the digital divide is really great.” - GHA***

Beyond basic quality of life needs and access to economic opportunity, access to the internet is increasingly a prerequisite for residents to access public benefits, including federal programs like the Supplemental Nutrition Assistance Program (SNAP), and state programs like Emergency Aid to the Elderly Disabled and Children (EAEDC), as well as other other public benefits. Community organizations supporting residents in applying for and accessing such benefits shared the challenges that lack of digital access can pose.

***“We help people apply for and manage various programs like SNAP, EAEDC... to manage benefits, you need access to the internet. You need to be able to upload documents, access applications, etc.” - Open Door***

Lastly, recognizing the internet as an essential utility was discussed as critical to addressing affordability challenges that residents experience. The existing conditions section highlighted that over 5,000 households in Gloucester are cost burdened. Outreach further illuminated how residents are experiencing layers of affordability barriers cutting across housing, food, and healthcare, to education. Overpriced internet service becomes an additional challenge that many cost-burdened Gloucester residents must face.

***“Because when you’re trying to juggle paying your rent, paying utilities, putting food on the table and medicine and anything related to children, that’s all your money and there is nothing left extra at the end of the month. Currently, the good options for high quality access...none of them are really that affordable” - GHA***

Additionally, community service providers shared that even when residents pay high costs for internet service, they are not guaranteed a good quality of service. For instance, some expressed frustrations that past credit history with an internet service provider might impact the quality of internet that residents receive or impact their ability to get a new internet subscription or switch to a different service plan. Such consumer protection concerns bolstered many participating stakeholders in urging changes in norms and in policy to treat internet service more like an essential utility to ensure fair access to all.

**Community service providers shared that even when residents pay high costs for internet service, they are not guaranteed a good quality of service**

### 1.3 Challenges in broadband affordability result in fewer residents connected to the internet at speeds appropriate for their needs

The cost that Gloucester residents pay for their internet service and the quality of the service they receive is interconnected. While 81% of the survey respondents shared that their home internet service is good enough to meet their household needs, 13.5% responded that it is not good enough to meet their household needs. Moreover, 29.7% of the survey respondents also shared that it is somewhat hard for them to pay their internet bill.



Focus group discussions emphasized that home internet service can be expensive and unaffordable. Particularly, residents from larger households shared that they have to get a higher-cost internet service to meet the needs of everyone at home.

*“[My] son keeps telling me to increase the speed of the internet, but I just don’t have the resources to do so” - a Spanish-speaking resident via an interpreter*

*“We live with a lot of people in the house, and my brother passed the internet to me. I received a bill of \$400 and a box.” - Spanish-speaking resident via an interpreter*

To get a better quality of internet service and higher speed for their daily needs, residents are forced to pay higher bills than they can afford. A resident in a Spanish-speaking focus group discussion shared that her internet service costs \$85 a month to get good quality and high-speed internet. With access to the internet becoming a prerequisite to how residents further access other daily services, the ability to pay a higher amount is impacting the vulnerable residents already experiencing other social and economic barriers.

However, even residents who have been able to pay for access to a home internet connection shared that they often experience issues with the quality and reliability of their connection. Participants in the older residents' focus group shared that those who use the Cape Ann internet service often experience internet cut-off. However, they note that most residents don't

**A resident in a Spanish-speaking focus group discussion shared that her internet service costs \$85 a month to get good quality and high-speed internet.**

want to switch to Xfinity service, which is the only other available service provider in Gloucester. Residents in another Spanish-speaking focus group discussion shared that their internet connection is unstable. Additionally, the housing authority highlighted the need to improve the infrastructure and wiring in their public housing buildings to get high-quality internet.

Many residents shared that they use low-cost internet service programs and that allow them to have access to the internet. Participants in the focus group discussion with older residents shared that they use the \$10 “Internet Essentials” program by Comcast for at-home internet. Additionally, residents in the Spanish-speaking focus group also shared that they rely on a discounted rate internet service that they have access to because they have a school-going child at home.

*“I can pay that but won’t be able to afford it once children are out of school and the subsidy is terminated.” - Spanish-speaking resident via an interpreter*

However, the focus group discussions highlighted that there is a lack of awareness among residents about these low-cost programs like the Affordable Connectivity Program (ACP). Many residents were interested in enrolling in the low-cost programs but did not know who to reach out to and shared that they didn’t have the knowledge or capacity to apply for it themselves, an experience reported both first hand in focus groups and shared as common among peers in the community. One participant from the older residents’ focus group at GHA noted that they found out about low-cost programs informally through a social worker. This suggests that high-need residents need more support to learn about the low-cost programs provided by internet service providers, enroll in these programs, and to receive continued support after that.

Many residents were interested in enrolling in the low-cost programs but did not know who to reach out to and shared that they didn’t have the knowledge or capacity to apply for it themselves.

## 2. Device access

In the focus group discussion, residents shared that they use phones, tablets, Chromebooks, printers, and other technology specific to their needs. For instance, older residents shared that they use lifeline technology, a medical alert system, for their daily assistive health needs, while students may use Chromebooks for school. The findings below show that there is a need across a variety of priority populations for access to adequate devices that meet specific and everyday needs. Discussions also revealed how some residents without an adequate computer at home rely on accessing devices through community institutions or using smartphones. Lastly, residents highlighted the need for skills training to be provided along with devices to ensure efficient use of the available devices..

### 2.1. High-need families lack adequate devices, or lack a sufficient number of devices to meet household needs- with some families not owning a computer at all

Many residents shared that they don’t have access to devices, like computers and laptops, at their homes. Affordability of accessing adequate devices is an impediment for residents to access devices that meet their needs. The

lack of adequate devices poses a barrier for them to do schoolwork, jobs, healthcare, and much more. In fact, they shared that their families haven't owned computers and would like to learn how to use them.

***“My family has never owned a computer, but it will be very useful to learn that.” - Spanish-speaking resident via an interpreter***

***“Son is 12 years old; we don't have a computer. When he needs help, we can't help him.” - Spanish-speaking resident via an interpreter***

Residents share that they need access to computing devices for many purposes, including: editing videos; printing documents that are mostly on their phones; learning the English language; viewing medical records; taking online classes efficiently, which are difficult through phones; attending meetings and giving presentations for their jobs; advancing their technology skills by using software or tools that are only available on the computer; filling out forms; as well as for fundamental needs like learning how to use a computer. The community service providers we talked to agreed that having access to devices at home was crucial for high-need population groups. For example, when a family has access to devices through a loan program or a device access program, they are immediately enabled to access information for their children's schoolwork, get in touch with their family outside the country, and much more. Additionally, community organizations highlighted that they have seen the highest impact on families when they can hand off devices. It encourages residents they engage with to be actively involved in their programs.

**Community organizations highlighted that they have seen the highest impact on families when they can hand off devices.**

***“You absolutely have to have a device in order to even be in class.” - Wellspring***

However, even when they have access to devices, there are further barriers for residents. Residents may not have the ability to replace a device or take care of continued maintenance due to barriers like cost or lack of technical skills.

***“They may have a laptop for a period of time but when something happens to that laptop, they're not able to replace it.” - Library***

With device access programs, many may have only one device at home to meet the diverse needs of the entire family, whether it is for schoolwork for kids, checking transportation, reading news, and much more. This highlights that while the first step to resolving the lack of devices for many residents is to provide them with devices, there is a further step to ensure residents' device needs are met through maintenance and the number of devices they have access to.

**Residents who have school-going kids at home also highlighted that they use the Chromebook that is available through the school district's Chromebook lending program not only for school but for needs outside of education as well.**

### **2.2 High-need residents rely on schools and community resources to access devices outside the home**

Residents shared that they often used public computers in the library or those in community organization offices to meet their device needs. In the focus group discussion with older residents in Gloucester Housing Authority, we heard that they use the computers available in their building, use the



computers in the library, or use the computers available via the MassHealth Program for All-inclusive Care for the Elderly (PACE). Particularly in PACE, they shared that they get support from someone who helps set up devices and helps them use devices to schedule doctor’s appointments when needed. Additionally, residents who have school-going kids at home also highlighted that they use the Chromebook that is available through the school district’s Chromebook lending program not only for school but for needs outside of education as well. Service providing organizations shared that residents use the devices available in their buildings to apply for jobs or use public benefits like Residential Assistance for Families in Transition (RAFT), SNAP, and other services that are challenging to fully navigate and access on only a smartphone.

While the majority of residents engaged were comfortable accessing shared or public devices, some residents also expressed hesitancy in using them, stemming from their limited digital literacy skills and/or due to language access barriers. Specifically, recently immigrated families and families who don’t speak English at home often don’t use community resources to access devices, despite device access needs.

While ,ajority of residents were comfortable accessing shared or public devices, some residents also expressed hesitancy in using them, stemming from limited digital literacy skills and/ or due to language access barriers.

*“I would like to go. I am shy and my English is limited so I don’t go.” – Spanish-speaking resident via an interpreter*

### 2.3 High-need residents disproportionately dependent on mobile phones for device needs, limiting full access to digital resources and opportunity

Many residents only have access to mobile phone devices, and they rely on them to meet their internet and device access needs. Often these residents have the skills to navigate online tools but don’t have the sufficient devices to fully participate online. This impacts their ability to register their children for kindergarten, search for housing, or find medical care. Newly immigrated families and non-English speaking residents are population groups that are reliant on phones for their daily device needs, putting them at the highest risk of losing access to the critical school, work, and other needs of daily life highlighted above.

*“Even folks who have just arrived are using smartphones and using them to communicate and to access resources, but that’s not enough.” - Wellspring*

A service providing community organization shared that even after they have assisted residents in applying for public benefits like SNAP and Department of Transitional Assistance (DTA) benefits, they can fall behind or even off the application process when their phones aren’t charged to respond to a telephone interview. Even something as basic as access to chargers at home and in public space poses additional barriers that those who are dependent on mobile phones experience.

Even something as basic as access to charger at home and in public space poses additional barriers that those who are dependant on mobile phones experience.

### 2.4. High-need residents like older adults and non-English speaking populations often need support with digital skills for access to devices to be impactful

There is a need to complement device access efforts for residents with skills training on how to use the available devices. This ensures that device lending and other similar programs are impactful, and that devices are used effectively to meet intended needs. The combined need for device access and digital skills for Gloucester residents was readily apparent, for instance, in the context of accessing transportation services. This issue was most highlighted for older residents and non-English speaking residents.

*“You need an app to use the CATA [Cape Ann Transit Authority] on-demand service. That has been tricky for some of our elderly residents especially” -Community stakeholders committee meeting*

*“You have to have a phone and download the app to get on to demand transportation. So that can be a problem for people. So it does affect them getting around the city, especially somebody new who doesn’t speak English” -GHA*

Many residents, particularly non-English speaking residents, shared that they are unable to get the right location for pick up and drop off when using the app on their phones. Many residents agreed that they found the experience complicated to navigate daily.

*“I am not familiar with the streets and do not know where to pick them up. I would like to call for someone to pick me up. At home it is complicated because my son has trouble walking.” -Spanish-speaking resident via an interpreter*

## 3. Digital literacy

Digital literacy is crucial for many individuals to advance into better-paying jobs and access services that can improve their quality of life.

*“People need a road map to understand how to get from where they are to where they want to be, and what the learning is that they need to do to be able to advance” - Library*

In the focus group discussions, residents shared that they are interested in digital skills training on how to use computers, how to navigate and use the internet safely, learn about available digital tools for accessing transportation services or schoolwork for their kids, upskill, search for jobs, and learn the English language. In particular, residents showed interest in training programs that provide them access to devices and internet service for a year after the program.

### 3.1. Safety and privacy concerns are widespread and pose a barrier to digital adoption, especially among older residents, new immigrant families, and non-English speakers

Many residents shared pressing concerns regarding internet safety and privacy. Nearly 41% of the survey respondents shared that they are very concerned about internet safety and 37.8% of the survey respondents are

Nearly 41% of survey respondents shared that they are very concerned about internet safety.

somewhat concerned. The focus group engagement data illustrated that for many residents, fear stems from past experiences where participants faced threats to their financial safety and identity theft concerns. These safety concerns were most prevalent among non-English speaking residents and older residents.

*“I don’t feel safe inputting personal information, there are a lot of scams, when they call me sometimes, I don’t know who I am giving information to” - Spanish-speaking resident via an interpreter*

*“I have made costly mistakes before. People have hacked into my account and Facebook page. It has cost me quite a bit of money.” - GHA older resident*

Survey data also illustrated that 67.6% of the survey respondents are concerned that their data could get stolen or used without their consent, 51.4% of respondents are concerned that they or their loved one could get scammed or tricked, 32.4% are concerned about being harassed or abused online, and 32.4% are concerned that they could be tracked or surveilled.

67.6% of survey respondents are concerned that their data could get stolen or used without consent.

### 3.2. Residents experiencing the digital divide need tech support systems that meet them where they are, and in their native languages

There is a need for a support system that provides personalized help for residents to get tech help when needed. All participants across the focus group discussions shared that they experience barriers in comfortably navigating the internet to access transportation, healthcare, housing, food, and much more. Some residents shared that they rely on assistance from friends and family to meet their support needs.

*“In my case, early on in life, I was diagnosed with cerebral palsy. I’m able to learn something but in other areas- I struggle. It is not easy for me to deal with technology. My sister tells me to call her if I need anything (from Amazon, other).” - GHA older resident*

Community service providers highlighted that many residents are hesitant to reach out to customer support for help because it is difficult to get responses from them. Additionally, many non-English speaking residents experience language barriers when looking for digital help, which is particularly emphasized for immigrant-owned small businesses. They need technological support and training to better market their business, increase visibility, and establish their presence. This includes learning tools like Excel, PowerPoint, and other applications for developing their skills, as well as learning about new platforms that small businesses can use for marketing.

Many non-English speaking residents experience language barriers when looking for digital help, which is particularly emphasized for immigrant-owned small businesses.

When providing support, whether through training programs for skill development or tech help, many residents experience issues that pose a challenge for them to leave their homes and go to the training locations. Residents shared barriers regarding transportation, mobility, and childcare needs.

*“There are many people here (GHA) who are not able to leave. It is not easy to get people out (because of transportation, and mobility issues). It would be helpful if classes were held here” - Older resident GHA*

This illustrates that more technology training or help-desk-type support is needed to meet people where they are. This ensures that the support is accessible to residents facing transportation, mobility, or childcare barriers. Gloucester, however, is on track to address these barriers. For instance, Essex County Community Foundation, which provides digital literacy programs in partnership with Tech Goes Home, wants to diversify the locations for these classes. This is to ensure that digital literacy programs are geographically distributed to reach more residents.

### 3.3. Residents in need of digital skills seek a variety of training types

While residents shared interest in enrolling in training to improve digital skills, they added that they want continued learning. A one-time, short training doesn't enable residents to transfer their learned skills to daily digital needs, highlighting a need for a training type that is continuous and builds on skills incrementally.

Additionally, community organizations shared that a variety of training modalities is best suited to meet the diverse digital needs of residents. Giving a choice of training types within the community ensures that there is room for different learning styles, as well as residents' logistical needs like timing, travel, etc. The choice of training types also ensures sensitivity towards different cultural contexts and experiences.

**Giving a choice of training types within the community ensures that there is room for different learning styles, as well as residents' logistical needs like timing, travel, etc.**

*“Everyone has a different learning style too so smaller numbers are better. People need different types of opportunities to learn. There are people who prefer larger groups. Some people like to practice while doing it instead of being lectured. Etc.” - Action Inc*

*“You need some more patience for other types of assistance. When we had students who you had to explain several times...how to use the equipment because they came from an area of the world where when they were growing up, that was not even part of their world” - Wellspring*

### 3.4. Language barriers compound digital access barriers

Gloucester has a growing population of immigrants and non-English speakers who face increased barriers in accessing digital services and support. Participants in the Spanish-speaking focus group discussion shared that they rely on tools like Google Translate or auto-translate to use the internet and the devices in their language. They emphasized the need for translation services when asking for support and help. This highlights that for non-English speaking residents of Gloucester, there is a parallel need for English language and technology support.

*“It is a challenge to come into an environment that is unfamiliar and [that] is a deterrent from seeking services. Language barriers are a priority.” - Action Inc*

Many community service providers shared that the language barrier is a pivotal barrier for them to reach the residents who may most need their support. Some service providers shared that they engage with residents through language lines to better connect with residents who don't speak English. The need for language access and support to be integrated with the digital equity efforts in Gloucester is pressing. The need is visible across age groups, whether for schoolwork, job search, or applying for public benefits. Language-accessible digital support is also crucial for professional growth and retention for new immigrant communities in Gloucester.

### **3.5. Many high-need residents are unaware of digital equity services and resources available**

Gloucester has a robust network of community organizations and resident groups that provide digital support within their services (refer to Table 1 in the Appendix). However, many residents primarily learn about available programs and training only through word-of-mouth and community interactions. Many are unaware of available services, training, or programs available in their community.

When residents are unaware of the existing resources, training, and programs, they are losing the opportunity to access support. However, the focus group discussions highlighted how the available programs' disconnect in reaching residents can be overcome by providing resources in multiple translated languages in formats like paper flyers or brochures. Many residents also shared that they would like to learn about any digital support or training through any programs or events that they attend through community organizations.

Many residents primarily learn about available programs and training only through word-of-mouth and community interactions.

***"I would like more info in-person, flier/brochure of services available" -Spanish-speaking residents***



## RECOMMENDATIONS

The recommendations in this plan are based on findings from the existing conditions analysis, community engagement, and interviews with community service providers and other stakeholders. They are also informed by national best practices and a review of Digital Equity plans adopted by other communities in Massachusetts and across the country. They consider both Digital Equity's place within city government and community-based organizations, and highlight specific programs, resources, and interventions that the City and community-based organizations could implement to better serve Gloucester residents.

The recommendations are divided into three categories that include expanding internet access, expanding digital literacy and device access, and building Gloucester's capacity to continue advancing the digital needs of its residents most impacted by the digital divide.

In the short term, expanding internet access can be achieved by improving affordability and availability. It is possible to increase availability by providing internet in the downtown area at high need locations, like the MBTA station and Main Street, as well as increasing awareness of existing free Wi-Fi locations within Gloucester. Access can also be improved by providing at-home internet service for residents in affordable housing sites and promoting low-cost internet plans for income-qualified residents. In the long-term, the recommended strategies focus on further expanding publicly accessible Wi-Fi networks in recreational areas like parks and beaches and advocating for increased competition among internet service providers by exploring options like an Open Access network.

In the short term, expanding digital literacy and device access involves integrating digital literacy assessments into one-on-one client services, offering computer basics literacy programs with free devices and internet access, and expanding workforce preparation digital skills programs. Additionally, recommended efforts focus on addressing online safety concerns through educational initiatives and creating "how-to" video tutorials in multiple languages for essential digital skills. Long-term recommendations emphasize scaling these programs to meet the growing needs of the community, increasing opportunities for technology internships for students, and expanding device access and distribution through partnerships. These efforts aim to build a digitally literate community with the necessary skills and resources to thrive in a tech-driven world.

In the short term, building digital equity capacity in Gloucester includes forming a Digital Equity Steering Committee to foster collaboration among community stakeholders, guide decisions on digital literacy programs, and track progress. Efforts should also focus on launching the Digital Learning Lab at the Sawyer Free Library to offer essential digital skills programs and device access. Additionally, updating the Digital Equity Asset Map will ensure residents and organizations have access to current resources. Long-term goals include expanding computer labs in neighborhoods with limited access, supporting small businesses with digital capacity building, and increasing partnerships for resource distribution. These initiatives aim to create a more digitally inclusive community, ensuring access to technology and digital education for all.

## Short-term recommendations (1-2 Years)

### Category 1: Expanding internet access

The recommendations in this section address challenges related to the lack of affordable and quality internet service through commercial providers.

#### 1.1 Pilot a publicly accessible outdoor Wi-Fi network downtown

Plan and implement an outdoor publicly accessible Wi-Fi network in downtown Gloucester. Priority locations that can have a high impact in improving access for residents who lack reliable internet connections at home or those with data caps on mobile devices are the MBTA station, Main Street, Stacy Boulevard, Burnham’s Field, Green Street Park, Friend Street Playground, Ledgemont Park and the Oval Playground. Appendix 6 lists other possible spots in the city-owned open space locations from the [Gloucester Open Space and Recreation Plan](#).

Potential funding sources are the Municipal Digital Equity Implementation program, MBI Digital Equity Partnerships program, and the Efficiency and Regionalization (E&R) Grant program. The Community Compact IT grant program or Community Compact Municipal Fiber program can be used for future expansion of public Wi-Fi networks.

#### 1.2 Implement free public Wi-Fi access in subsidized and affordable housing sites

The Gloucester Housing Authority and deed-restricted affordable housing apartment complexes are sites where free public Wi-Fi can be implemented through MA grant funded programs. A high priority site for the Gloucester Housing Authority is the McPherson Park, a housing site for older residents and people living with disabilities, since the on-site Resident Service Coordinator can provide support to residents in connecting and navigating the internet. Two apartment complexes, the LePage apartments and the Pond View Village apartments, are in the process of applying through the Residential Retrofit Program.

The City’s Affordable Housing Trust and the Community Development Department are well positioned to inform developers of deed-restricted affordable housing of these programs and encourage participation.

#### 1.3 Raise awareness of free public Wi-Fi locations

Free public Wi-Fi is currently available in some public buildings in Gloucester, but the locations are not readily apparent to residents. Promoting public Wi-Fi locations on maps and in print materials that can be translated to high-need languages other than English can help residents who have no at-home internet service to find these locations. This information can be compiled into a directory and hosted on an online website including the library website, Gloucester Connection, and the City of Gloucester website.

The Sawyer Free Library offers free public Wi-Fi access and has socially comfortable public seating areas. Other organizations that can promote free Wi-Fi access at their locations to the populations they serve are the Rose Baker Senior Center, the Legion, and Gloucester Public Schools.

IMPACT



RESOURCE



IMPLEMENTER

City IT

CATEGORY

Broadband access

IMPACT



RESOURCE



IMPLEMENTER

Gloucester Housing Authority and other affordable housing providers

CATEGORY

Broadband access

IMPACT



RESOURCE



IMPLEMENTER

City-IT, DPW, School

CATEGORY

Broadband access



Buildings with free, publicly-accessible Wi-Fi can include signages inside and outside the building to raise awareness.

**1.4 Promote lower-cost plans for income-qualified residents**

Increase awareness of lower-cost internet service for income-qualified residents through direct frontline service and client intake appointments. Print collateral materials about less expensive internet plans can be sourced from internet service providers and distributed through community organizations that serve vulnerable populations. Residents who lost their Affordable Connectivity Program (ACP) subsidy can be prioritized to enroll into low-cost plans.

**Category 2: Expand Digital Literacy Programs and Access to Devices**

The recommendations in this section address challenges related to the availability of digital literacy programs and devices commonly used in educational and workforce settings. The short-term focus is on providing support to residents who face economic, language, and transportation barriers.

**2.1 Integrate assessment of digital literacy and device access needs into one-on-one client services in agencies across Gloucester**

Existing one-on-one interactions with residents provide an ideal opportunity to also explore needs related to digital inclusion. Similar to managing other needs, staff can provide a full cycle of support that includes assessing goals and needs, evaluating and discussing solutions, referring to relevant resources (digital skills training, appropriate devices, affordable connectivity), and following up to check in and evaluate progress.

A template of key questions is available from the library, and each organization is best suited to hold training for frontline staff that integrates the process into existing practices. Options for people who require adaptive devices are available through the Sawyer Free Library and Gloucester Public Schools.

Implementers can partner with organizations providing accessible and adaptive devices. The [Massachusetts Association for the Blind and Visually Impaired](#) (MABVI)'s Access Technology Training helps blind or visually impaired people learn to use technology that helps them do what they want. [The Arc of Massachusetts Tech Center](#) also provides tools and resources on technology for work, health, learning, communication and much more.

**2.2 Provide computer basics literacy programs**

The most successful computer basics programs offer 12-15 hours of instruction with quality tech support, coupled with an incentive program of a free device and a year's worth of Internet access to qualified individuals. The curriculum for computer basics courses typically has four sections covering computer hardware, the Google platform (docs, spreadsheets and presentations), safety, and online communication. High priority locations for piloting new computer basics programs are:

IMPACT



RESOURCE



IMPLEMENTER

City, school, CBOs, Library

CATEGORY

Broadband access

IMPACT



RESOURCE



IMPLEMENTER

Gloucester Public School, Social Service Providers, Sawyer Free Library, City Health Department, Council on Aging

CATEGORY

Digital Literacy

Device access

- Within an agency already providing services to vulnerable and underserved populations (e.g. Action, Wellspring)
- In a public space open to all residents (the new Digital Learning Lab at Sawyer Free Library)
- In a public space frequented by a high concentration of residents with digital equity needs (e.g. the Rose Baker Senior Center)

Potential partnerships and funding sources are UMass Lowell’s Digital Equity Partnership, the Essex County Community Foundation, the TEK Collaborative, and Gloucester Public Schools internship program. For older residents, the [Older Adults Technology Services \(OATS\)](#) program from AARP is an option. Additionally, SeniorCare, the Aging Services Access Point serving Gloucester, provides “technology navigation” as part of the AgeSpan Digital Equity Partnerships grant. Other funding sources include AARP Community Challenge grants, the MCOA Service Incentive Grants, and funding from Point32Health Foundation.

**2.3 Expand Workforce Preparation digital skills programs**

Workforce preparation programs provide intermediate and advanced training in digital skills for a variety of jobs including tech support, web development, and user experience. The employment opportunities for candidates with these types of skills are typically higher paying and have future career potential. High priority locations for piloting intermediate and advanced workforce preparation programs are:

- Within an agency already providing services to immigrant and low-income communities who have already completed computer-basics programs (Wellspring)
- In a public space open to all residents (the new Digital Learning Lab at Sawyer Free Library)

Potential partnerships and funding sources are UMass Lowell’s Digital Equity Partnership and the Digital JEDI Consortium through the MassHire Metro North Workforce Board. Additionally, the Workforce Training Fund Program that focuses on small to medium-sized businesses is a funding opportunity to support digital skills for businesses.

**2.4 Support people to build confidence in safe online participation**

To address the many people who feel fearful and vulnerable about participating online, accurate information is needed from trustworthy sources in high need languages. Topics of particular importance are: cybersecurity and internet privacy; consumer advocacy and protection resources; fake news, conspiracy theories and disinformation; consumer fraud and scams; and parental content controls.

Effective ways to inform people include:

- Standalone public programs
- Integrating the topics into digital literacy programs and one-on-one client appointments

**IMPACT**



**RESOURCE**



**IMPLEMENTER**

Wellspring, Action, Sawyer Free Library, Council on Aging

**CATEGORY**

Digital Literacy

**IMPACT**



**RESOURCE**



**IMPLEMENTER**

Wellspring, Sawyer Free Library

**CATEGORY**

Digital Literacy

**IMPACT**



**RESOURCE**



**IMPLEMENTER**

Community Organizations, Sawyer Free Library, Council on Aging, Senior Center

**CATEGORY**

Digital Literacy

- Disseminating multi-lingual print information on consumer protection policies, parental content controls, cybersecurity, etc. in multiple locations throughout the community frequented by high-need populations

### 2.5. Offer “how-to” online video tutorials on basic and workforce preparation digital skills in high-need languages

Video tutorials in Spanish and Portuguese are the primary way that non- and low-English-speaking residents navigate services on their smartphones. Topics of high interest are where to find public digital literacy programs and access to devices in Gloucester, as well as ones on how to use online tools or apps for transportation, housing, and other essential services. Local information such as this is available on the Gloucester Connection website, where video content can be added. In addition, the library can provide access to video-recorded educational programs on computer basics and workforce preparation in high-need languages.

If videos are developed locally, potential sources of funding include the Massachusetts Board of Library Commissioners LSTA grants and the English language acquisition state grant program that is aimed to enhance instruction for English learners with digital resources.

IMPACT



RESOURCE



IMPLEMENTER

Sawyer Free Library

CATEGORY

Digital Literacy

## Category 3: Building capacity

### 3.1. Form a Gloucester Digital Equity Steering Committee

The Gloucester Digital Equity Steering Committee will nurture the cross-sector working relationships established by the Gloucester Digital Equity Planning process and co-led by the City’s IT Director and the Sawyer Free Library Director. The purposes of the Gloucester Digital Equity Steering Committee are to:

- Convene community stakeholders on a regular basis
- Provide opportunities for community stakeholders to share digital equity initiatives and best practices occurring within their organizations
- Gather feedback from community stakeholders on digital literacy program and device access needs
- Guide city-wide decisions on digital equity priorities and policies
- Report on the progress of the Digital Equity Plan recommendations and advance future recommendations
- Participate in the regional Digital Equity coalition led by the Essex County Community Foundation

IMPACT



RESOURCE



IMPLEMENTER

Sawyer Free Library

CATEGORY

Capacity

The National Digital Inclusion Alliance provides a [guide](#) to building a digital inclusion coalition, with case studies and start-up manuals.

### 3.2 Launch the Digital Learning Lab at the Sawyer Free Library

The Digital Learning Lab, which is part of the major 2025 Sawyer Free Library capital project currently under construction, is the first public-purpose-built

learning space for quality digital literacy educational programs in Gloucester. Anticipated to open in the fall of 2025, the Digital Learning Lab will serve basic computer learners, in workforce preparation, and advanced learners, supporting experimentation and mastery of a wide range of technologies. In addition to digital skills programs, broadband, and device access, expert staff will support both group and independent learning. The Digital Learning Lab will unlock the potential of community members who can contribute to innovation, entrepreneurship, and economic growth. By being embedded within the Library, it also serves as a center of information for Gloucester’s digital literacy assets and an anchor institution for a referral network to other community service providers.

Potential sources for funding the Digital Learning Lab physical infrastructure, as well as its furnishings and equipment, are the Municipal Digital Equity Implementation program, T-Mobile Hometown Grant, UMAss Lowell and the Essex County Community Foundation.

**3.3 Update the Digital Equity Asset map and the directory of Gloucester’s Digital Equity resources on a regular basis**

The City of Gloucester’s Digital Equity webpages and the Library’s [Gloucester Connection](#) website are tools for providing current information on Digital Equity resources to the public, policy makers, funding agencies, City administration and senior managers, and community organizations delivering programming and services. While transparency of this information has many outcomes, the highest impacts result in residents who can locate services that benefit them, planning staff who can identify opportunities to scale existing programs and see gaps, and administrators who can demonstrate results and report progress over time to funders.

Funding through MAPC’s Technical Assistance Program (TAP) is a potential option for continuing the planning process of developing a comprehensive inventory and map of publicly available digital equity resources.

**Long term (3-5 years)**

**Category 1: Expand internet access**

**1.1 Implement publicly accessible Wi-Fi networks in open space locations**

Plan and implement outdoor, publicly-accessible Wi-Fi networks in locations where residents and tourists congregate. This will also support the goals in the Gloucester Open Space and Recreation Plan, particularly to enhance Gloucester’s Recreation Land, as well as to improve their management and stewardship through partnership with local organizations. Priority locations include the West Gloucester WTBA station, Stage Fort Park and Good Harbor Beach.

Potential funding sources include the Municipal Digital Equity Implementation program, MBI Digital Equity Partnerships program, and the Efficiency and Regionalization (E&R) Grant program.

IMPACT



RESOURCE



IMPLEMENTER

Sawyer Free Library

CATEGORY

Capacity

IMPACT



RESOURCE



IMPLEMENTER

City/ Community Development Department

CATEGORY

Capacity

IMPACT



RESOURCE



IMPLEMENTER

City IT

CATEGORY

Broadband access

### 1.2 Bring Internet Service Provider (ISP) market competition to Gloucester

Primary ways for the City of Gloucester to facilitate more affordable internet service in Gloucester are to advocate for an expansion of the number of commercial internet service providers and to explore options for leveraging public infrastructure. Establishing and continuing direct working relationships with major internet service providers supports a mutual understanding of community needs and plans for infrastructure and service delivery. Also, the City can evaluate the feasibility of laying conduit as part of an Open Access network model.

An Open Access network is an opportunity to build the physical infrastructure that independent ISPs use to operate in a competitive market. Gloucester’s geographical constraints present a high barrier for commercial ISPs to build and expand their infrastructure. An Open Access network overcomes that barrier and provides a network for last mile connections that make at-home internet possible for all.

To complement an Open Access network, municipal investment can be coupled with Dig Once-conduit policies that mandate additional conduit be installed during construction or repair. Installing conduit throughout public rights-of-way can lower costs for providing broadband service in the future.

IMPACT



RESOURCE



IMPLEMENTER

City Administration,  
City IT Director, City  
Council

CATEGORY

Broadband access

## Category 2: Expand device access and digital literacy

### 2.1 Increase opportunities for Gloucester Public Schools students to pursue technology internships and careers

The implementation of new digital literacy programs and public digital learning labs create new opportunities for part-time, paid student interns to deliver digital tutoring assistance and one-on-one tech support. These opportunities provide meaningful work experience for students and open the door to advanced certification programs and well-paying careers. They also support healthy lifestyle choices during high school.

The Strengthening Instructions Program (SIP) from the Office of Elementary Education is a potential funding source for Gloucester Public Schools to develop a technology internship program. The next competition round is in 2025, and the funding prioritizes projects that offer English language instruction support. Additionally, it also prioritizes projects that offer work-based learning opportunities, like internships, apprenticeships, and fellowships, in industries or job fields that are in high demand.

IMPACT



RESOURCE



IMPLEMENTER

Gloucester Public  
Schools, Sawyer Free  
Library, Chamber  
of Commerce,  
community  
organizations

CATEGORY

Broadband access

### 2.2 Scale basic computer and workforce preparation digital literacy programs in proportion to community needs

Results achieved in the short term will guide what programs and where to expand them in the long term. In order to scale up to meet community needs and sustain efforts, the following are needed:

- Coordinators to manage program personnel, participant recruitment, promotion, schedules, budgets and grant funding
- A reliable pipeline of free devices for qualified individuals

- Formalized partnerships with school and college institutions for student intern tutors and teachers
- Widely available public Wi-Fi and funding for individuals with education and workforce development goals for hotspots and 1-year Internet plans

Currently, a device refurbishment and distribution program exists regionally through the Essex County Community Foundation in collaboration with TEK collaborative. At a local level, a device donation drive encourages residents and businesses to participate in this program by donating gently used devices. Also, the business model can be evaluated to see if sufficient volume would warrant hosting such a program for the Cape Ann region in Gloucester.

## Category 3: Build capacity & expanding partnerships

### 3.1 Expand computer labs in public spaces to other Gloucester neighborhoods

While the area of highest need for residents without internet service at home and device access is downtown, residents of many other neighborhoods are also in need of public access to the combination of broadband, computer devices, digital literacy programs and staff support. Expanding computer labs in public spaces throughout the community helps to meet people where they are in the community and reduce barriers to participation related to transportation and time constraints.

### 3.2 Support small businesses with digital capacity building

Further community engagement research and planning is needed to make recommendations on the needs of small businesses relative to scaling their operations and maximizing their online presences. An asset already in place is the Greater Cape Ann Chamber of Commerce, which is well positioned to assist business owners through disseminating information and providing educational opportunities on business profiles and online marketing, as well as technology equipment and digital learning programs that are available for free in the community.

Potential funding opportunities to support this further planning effort includes grants from the Workforce Innovation and Opportunity Act. Technical assistance services from organizations that support underserved small businesses in Massachusetts are also available to provide multilingual, on-the-ground support. For example, [MassDevelopment offers technical assistance](#) that can be tailored to the digital needs of small businesses, including services in community visioning, marketing, and branding. Similarly, the Massachusetts Growth Capital Corporation (MGCC) provides grants through its [Small Business Technical Assistance \(SBTA\) program](#), as well as other mini-grants, to support small business owners with professional, technical, and operational services. The [Local Enterprise Assistance Fund](#) provides solutions-oriented advisory services to underserved business owners in Massachusetts.

IMPACT



RESOURCE



IMPLEMENTER

Wellspring, Action, Sawyer Free Library, Council on Aging

CATEGORY

Digital Literacy

IMPACT



RESOURCE



IMPLEMENTER

Magnolia and Lanesville Community centers, Gloucester Public Schools, public spaces

CATEGORY

Device access

IMPACT



RESOURCE



IMPLEMENTER

City Comm. Development, Chamber of Commerce

CATEGORY

Digital Literacy



BUILD NOT FOR TODAY ALONE BUT FOR TOMORROW AS WELL

## APPENDIX

Appendix 1: Digital Equity framework

DIGITAL EQUITY FRAMEWORK: THREE PILLARS			
Pillar	Broadband Connection	Device Access	Digital Literacy
<b>Overview/ Definition</b>	<p>Having a reliable, and affordable internet connection, ideally to the home, fast enough to support the needs of all members of a family or household, simultaneously.</p> <p>Broadband subscription services are most commonly obtained via private internet service providers (ISPs), but in some cases may be offered by a public service provider or as a shared service or building amenity.</p> <p>Broadband is currently defined as 100mbps / 20mbps by the FCC, but advocates also emphasize the importance of symmetrical upload speeds.</p>	<p>Owning or otherwise having access to computing devices with sufficient hardware, software, and features/capabilities to support online needs.</p> <p>Different devices may be needed to support different use cases and individual users.</p> <p>Devices include home desktop or laptop computers, and can also include Chromebooks, tablets, mobile phones, etc., as well as auxiliary devices such as webcams, which may be needed for specific use cases, such as remote learning or telehealth.</p>	<p>Knowing how to confidently navigate and utilize technology and digital environments to fully participate in online life. This means having the individual skills needed to use hardware, software, and an internet connection across a variety of use cases, as well as having access to educational resources or even technical support to troubleshoot when there are issues.</p>
<b>Common barriers</b>	<p>Insufficient infrastructure;</p> <p>Lack of market competition and consumer choice;</p> <p>High cost of high-speed plans; inadequate or outdated in-building wiring or hardware;</p>	<p>Older/outdated devices;</p> <p>Inadequate devices;</p> <p>lack of device ownership; limited access to shared devices;</p> <p>device affordability</p> <p>Lack of access to specialty devices with features to accommodate those living with disabilities.</p>	<p>Lack of familiarity with devices; misinformation and scams; lack of educational materials translated into relevant languages; lack of educational/training opportunities in relevant languages; inadequate tech support from ISPs or device manufacturers; social isolation - lack of social connections that can provide informal tech support</p>
<b>Gloucester in context</b>	<p>10.7% of households are without internet access in Gloucester.</p> <p>According to M-Lab data, 91.23% of tests in Gloucester were over 100 mbps download speed.</p>	<p>7.9% of Gloucester households rely solely on cellular phone connection to access the internet.</p> <p>7.1% of Gloucester households don't have cases to computers</p> <p>11.8% of households in Gloucester earn less than \$20,000 a year.</p>	<p>5.4% of survey shared they would like digital skill support for general internet searching</p>
<b>Support opportunities</b>	<p>Public broadband infrastructure or services; increased private ISP competition</p> <p>Affordable service or subsidy programs like ACP or Internet Essentials</p> <p>Hotspot lending programs; public Wi-Fi</p>	<p>Device refurbishment and distribution programs; device lending programs;</p> <p>Setting up computer labs in public spaces</p>	<p>Digital literacy training programs, self-service educational materials, accessible IT support, digital navigators</p>



### Appendix 2: Network Technology

The technology used to transmit data to and from the internet impacts how fast that data moves. Companies which provide internet service using either Cable or Fiber Optic infrastructure must hold a Cable Franchise Agreement with the municipal government in which they operate, because this kind of infrastructure must use the public right of way. These agreements originally governed the operation of Cable Television providers; they still do, but because the transmission technology used for television and internet is largely the same, the same agreements apply. Because Fixed Wireless and Satellite providers do not rely on physical infrastructure to connect a home to the internet, they don't require these same municipal agreements.

#### **Fiber internet**

Fiber optic cables are currently considered the “gold standard” of internet infrastructure. While any internet technology has a maximum transmission speed, the theoretical maximum transmission speed of fiber is so high that it is at present functionally unlimited (some experts theorize that a single strand of fiber optic cable could transmit as much as 44 terabits per second, or 44 million megabits).

#### **Cable internet**

The most widespread ISP technology used in the United States is cable—the same coaxial copper cable infrastructure that brings cable television into homes. Because these cables have been in use for so long, they're extremely widespread. However, they do have a much lower transmission capacity than fiber, topping out at about 10 gigabits per second under laboratory conditions. In practice, it is uncommon to see cable internet speeds above 1 gigabit per second.

#### **Fixed wireless internet**

Unlike cable or fiber, fixed wireless internet uses point-to-point terrestrial microwave (radio) signals to move data around. An apartment building might have a fixed wireless antenna on the roof, which sends and receives data from a central hub which is connected to the internet at an existing fiber optic node. The data is then transmitted through the building using ethernet cables connected to wireless routers or other devices. This technology has the benefit of not requiring the ISP to invest in costly buried infrastructure but can be more expensive to operate and less reliable.

#### **Satellite and mobile (cellular) internet**

While all internet connection technologies must at some point be physically connected to the broader internet, satellite and mobile internet transmit wirelessly over a much longer distance, and as such are not regulated at the municipal level. Data about coverage using these technologies is not available at a municipal level.

Satellite connections have the advantage of being usable in more remote locations, out of range of cable/fiber infrastructure and far from cellular towers. However, most satellite ISP service is both expensive and quite slow, while newer “low earth orbit” technologies which do provide faster speeds are extremely dependent on horizon sightlines, meaning that they are impacted by topography, tree cover, and the built environment. In an urban environment like Somerville, with widespread availability of cable internet service, satellite internet is not an attractive option.

Cellular internet, while nearly ubiquitous in smartphones, has disadvantages for home internet connections. Because of the high demands on the cellular network, most plans have data caps (limits on the amount of data that can be transmitted each month) and higher subscription costs. A dedicated hotspot can provide flexible internet access if traditional connections are not available, and individuals may forego home internet for financial reasons in favor of relying on the mobile hotspot already built into their smartphone. The same is often true for people without a stable home address, which would

preclude them from subscribing to a traditional home internet service provider.

### **Digital Subscriber Link (DSL) internet**

DSL internet is an outdated technology that relies on copper telephone wire infrastructure, in much the same way that cable internet relies on cable television infrastructure. It differs from “dial-up” internet in that it offers faster speeds and can be used simultaneously with a telephone call, but it does use the same physical infrastructure. While DSL was once considered “high speed” internet, the maximum transmission speeds possible using this infrastructure are well below the capacity of even cable internet. There are no DSL providers currently serving Somerville.

## **Appendix 3: How is speed measured and reported?**

### **Bits vs. Bytes**

Internet speed is generally measured using multiples of bits: kilobits per second, megabits per second, and gigabits per second. A bit is a single character of binary code: a 0 or a 1. This differs from how file size is measured, which is generally in multiples of bytes. A byte is 8 bits, which is the maximum amount of data needed to transmit a single character of text. A text document containing 1,000 characters of text would have a file size of about 1 kilobyte and would take 8 seconds to transmit over a 1 kilobit per second connection.

Broadband speed is measured using two numbers: an upload speed and a download speed. A connection listed as 100/30 means that the download speed (the speed of receiving data from the internet) is 100 megabits per second, and the upload speed (the speed of sending data to the internet) is 30 megabits per second. Upload speeds are generally lower, because most home uses for the internet involve receiving more data than sending. However, the increased usage of video conferencing means that upload speed requirements for the average user are higher now than they have been historically. There’s no technical reason uploads need to be slower than downloads, this is just one way that ISPs manage data transfers to preserve higher download speeds.

### **Regulation, reporting, and speed tests**

The FCC updated their definitions of what speed constitutes “Broadband” internet in 2023. Speeds at or above 100/20 are considered “served” with broadband, while anything between 25/3 and 100/20 is considered “underserved.” Speeds below 25/3 are considered “unserved.”

While FCC Form 477 (the source of the maximum advertised speeds listed per ISP) lists the maximum advertised speed available at a given address, these numbers do not tell the full story. First and foremost, a speed listed in a Form 477 filing indicates only that the ISP is willing to sell a subscription at that speed; it does not indicate how many people (if any) purchase that service, nor does it indicate the price at which it is provided. For most home use, a 100/30 connection is sufficient, while 300mbps download speeds may be desired for heavier uses such as remote work/school when multiple connections are active simultaneously.

Internet speed tests are one source of data available to determine the real-world experience of home internet users in Somerville. However, speed test data is not without its limitations. A person is most likely to take a speed test when something is not working the way they expect it to, which may bias the data towards slower speeds. These speeds are also impacted by a large number of factors beyond the ISP service, including device condition, age, and quality, wireless router placement, condition and quality of in-building wiring, etc. For people who do take a speed test, the test results are a fairly accurate representation of their experience using their internet connection; they do not tell us why their experience is what it is, or how much of that experience is caused by their internet service provider.

# Gloucester Digital Equity Plan |

## Appendix 4: Digital equity asset ecosystem

	Digital Equity work	Category
Sawyer Free Library	<p><b>Broadband Access</b> Free Wi-Fi access available to residents at the Sawyer Free Library</p> <p>27 hotspots available through device lending program. They are in high demand and always in use.</p> <p><b>Device Access</b> Device lending program for e-readers, laptops, hotspots, and tablets.</p> <p>Public internet computers are available to use at the library</p> <p>Printing services</p> <p><b>Digital Literacy</b> Tech advice and troubleshooting through one-on-one device advice appointments with the public technology assistant.</p> <p>Digital Services Librarian and IT staff.</p> <p>Access to print, digital, audio, and video collections in addition to other research databases.</p> <p><b>Outreach</b> Existing relationship with community partners and vulnerable residents</p> <p>Website language translation</p> <p>Social media, e-newsletter</p> <p>Language access tools</p> <p>Gloucester Connection website</p> <p><b>Upcoming Digital Resources</b> Digital learning lab- a large digital display teaching tool, computers, two audio recording booths for podcasts, production station for editing, digitization station.</p> <p>Additional digital support tools will be available to Gloucester residents at the new 2025 Sawyer Free Library location.</p>	<p>Broadband</p> <p>Device access</p> <p>Digital literacy</p> <p>Outreach</p> <p>Upcoming Resources</p>
City	<p><b>Broadband</b> Fiber infrastructure for municipal buildings</p>	Broadband

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Mayor's office	<p><b>Outreach and Communication</b> Hybrid city council meetings, Phone calls, E-mails, Social media posts, Local media outlets, Surveys, Paid advertisements</p>	Outreach
ECCF	<p><b>Funders</b> ECCF has made a multi-year, \$3 million commitment to empower all residents with the access, education and equipment necessary to successfully navigate our increasingly digital world.  In Gloucester, they are funding digital literacy training in Wellspring, Open Door and anticipate expanding to the Sawyer Free Library.</p>	Funding
Public school district	<p><b>Device access</b> Chromebook program (G3-12), Printing services, Computers, Hotspots</p> <p><b>Digital literacy</b> Help desk support. Application software support, Language access tools, Translator for language support for non-English speaking families, Bilingual family liaison, Use language line and other language access platforms like kinvo, seesaw, clever</p> <p><b>Internet and infrastructure</b> LANs, Wide Area Network, Outreach and Communication WhatsApp to communicate with non-English speaking families</p>	<p>Device access</p> <p>Digital literacy</p> <p>Internet and</p>
Housing Authority	<p><b>Digital Literacy</b> Available to applicable GHA residents, FSS program, A Better Life Program, Senior Resident Services Initiatives</p> <p><b>Device Access</b> Device loaning  Limited number of computer stations available</p> <p><b>Outreach and Communication</b> Language access tools like language line platform.  Staff support for application processes and non-digital option  Texting service, direct line with GHA residents</p>	<p>Digital literacy</p> <p>Device access</p> <p>Outreach</p>

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Action Inc	<p><b>Device Access</b> Previously worked with ECCF to provide chromebooks, Computer lab</p> <p><b>Broadband</b> Hotspots through donations</p> <p><b>Digital Literacy</b> Computer lab where staff can provide 1:1 support, Digital navigator program, Job Training, Community Services Department</p> <p><b>Outreach and Communication</b> Outreach through community groups, organizations, and whatsapp to reach covered populations, Language access tools like language line platform.</p>	<p>Device access</p> <p>Broadband</p> <p>Digital literacy</p> <p>Outreach</p>
The Open Door	<p><b>Outreach and Communication</b> Community based meals</p> <p>Language access tools- Language line, ESL advocate, Multilingual staff, Website translations available</p> <p><b>Digital Literacy</b> Staff provide support to connect people to resources</p>	<p>Digital literacy</p> <p>Outreach</p>
Pathways for Children	<p><b>Outreach and Communication</b> Language access tools- Whatsapp, Spanish speaking staff, Translation services</p> <p>Social worker assigned per household</p> <p>Monthly parent meetings, includes training and workshops</p>	<p>Outreach</p>
Backyard Growers	<p><b>Outreach and Communication</b> Language access tools- Spanish speaking staff, previously translated materials</p> <p>Texting group for GHA and Caleb Group community gardeners</p> <p>Phone calls, E-mail, Physical mail</p>	<p>Outreach</p>
Wellspring	<p><b>Device Access</b> Device loaning program for chromebooks and laptops, A laptop is provided to each household in their family shelters</p> <p><b>Broadband</b> Hotspot loans, Internet service provided in shelter buildings,</p> <p><b>Digital Literacy</b> Workforce training, Intro to computer skills, ESL programs, 1:1 support</p> <p><b>Outreach</b> Existing relationship with vulnerable populations for outreach</p>	<p>Device Access</p> <p>Broadband</p> <p>Digital Literacy</p> <p>Outreach</p>

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HAWC	<b>Device Access</b> Provides support group members with devices	Device Access
	<b>Broadband</b> Provides support group members with internet access	Broadband
One Stop	<b>Outreach and Communication</b> Harm reduction center with active lines of communication with vulnerable residents	Outreach
Younity	<b>Digital Literacy</b> Young adult access center providing support for youth (ages 16-25)	Digital Literacy
	<b>Broadband</b> Wi-Fi access	Broadband
Grace Center	<b>Space</b> Community day center	Space
	<b>Digital Literacy</b> Provides life skills and job readiness support	Digital Literacy
Cape Ann Chamber of Commerce: Business Education Collaborative	<b>Outreach</b> Business education collaborative	Outreach
	<b>Data</b> Business demographics	Data
Metro North Workforce	<b>Digital Literacy</b> Digital navigators  Intermediate digital literacy courses	Digital Literacy
	<b>Device Access</b> Laptops with microsoft office	Device Access
	<b>Outreach</b> Existing relationships with businesses and identified digital skills needs  Excel  Powerpoint  Marketing	Outreach
<b>Other community assets</b>		
Gloucester Racial Justice Team	<b>Outreach and Communication</b> Advocacy and inclusion efforts to bring in minority groups into decision-making	
Community stakeholders committee	<b>Partnerships</b> Existing relationship between community stakeholders	

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### Appendix 5: Community engagement detailed table

Interview	Date	Attendees
<b>Phase 1: Key Informant Interviews</b>		
Gloucester Public schools	12/8/2023	Christine Castle, Title I, ELL, Family Community Engagement, and Homeless McKinney-Vento Liaison
Police Department	12/12/2023	Ed Conley, Police Chief
Office of the Mayor	12/13/2023	Pamela Tobey, Director of Communications and Constituent Services
Health Department	12/14/2023	Dominique Hurley, Director of Public Health
Community Development Department	12/14/2023	Erik Hinderlie, Community Development Staff Planner
Elder Services	12/19/2023	Elise Sinagra, Director of Elder Services  Patty DeVries, Tech instruction volunteer
Prevention Services	1/2/2024	Chelsea Goldstein-Walsh, Regional Prevention Director
Cape Ann Chamber of Commerce	1/16/2024	Steve Buckley  Colleen Murdock
MassHire Metro North Workforce Board	1/18/2024	Penny Hasseli, Chief Operating Office
<b>Phase 2: Community stakeholder interviews</b>		
Action Inc	2/5/2024	Jennifer
Pathways for Children	2/7/2024	Tanya Cornetta, Family Resource Center Program Manager
	2/16/2024	Monica Pires, Interim Social Service Manager
Backyard growers	3/1/2024	Courtney Allen, Director of Communication & Outreach
Sawyer Free Library	3/5/2024	Jenny Benedict, Director
Open Door	3/5/2024	Leah Briere
Gloucester Housing Authority	3/12/2024	David Houlden, Executive Director
		Jen Hapgood, Assistant Executive Director
		Liz Auwerda, Assistant Director of Resident Services

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Wellspring	4/12/2024	Andrew Allen, Director of Education and Career Pathways  Melissa Diamond, President and Executive Director  Melba Juez-Perrone, Chief Operating Officer  Mary Beth Tobin, Director of Job Training Initiatives  Liz Wuenschel, Director of Shelter Services & Housing Opportunities
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### Phase 2: Open meetings/ presentation

Community stakeholder committee meeting	2/27/2024	
Gloucester Racial Justice committee	2/16/2024	

### Phase 3: Focus group discussion - resident engagement

Spanish-speaking resident focus group at Open Door	5/16/2024	6 participants and 1 interpreter
Older resident focus group at GHA site	5/29/2024	3 participants
Spanish-speaking resident focus group at Wellspring	5/30/2024	13 participants and 1 interpreter

## Appendix 6: Recommendation 1.1 (Short term)

### Beach

Pavilion Beach/Fort Point Park  
Stacy Boulevard/Crab Beach  
Good Harbor Beach

### Playgrounds and athletic fields

Oval playground  
Burnham's Field  
Friend Street Playground

### Parks

Stage Fort Park  
Green Street Park  
Ledgemont Park

### MBTA stations

Gloucester  
West Gloucester