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MBI
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at the MassTech
Collaborative

Municipal Digital Equity Plan

Prepared for the City of Watertown, Massachusetts

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1 Executive summary

With funding from the Massachusetts Broadband Institute (MBI), the City of Watertown commissioned CTC Technology & Energy (CTC) to engage in a study to document gaps in digital equity—a condition in which all residents have access to adequate broadband service and devices and possess the skills to use these resources—and develop strategies to bridge these gaps. This report presents findings and recommendations. This project was funded by the Massachusetts Broadband Institute (MBI) at the MassTech Collaborative under its Municipal Digital Equity Planning Program. Funding came from State and Local Fiscal Recovery Funds provided under the American Rescue Plan Act (ARPA). This report will also be considered by MBI as it develops strategies for addressing digital equity gaps under the Massachusetts State Digital Equity Plan.[1]

1.1 Project overview

Over a six-month period, CTC performed the following tasks:

- Analyzed the availability of broadband service, competition, and pricing in Watertown. See Section 4.
- Analyzed adoption of the Affordable Connectivity Program (ACP) which offers a $30 monthly subsidy toward broadband bills and estimated the gap in utilization by eligible households. See Section 4.2. (Although as of late January this program was set to end new enrollments on February 7, 2024, the gap in ACP enrollment illustrates the need for enrollment support in any other current or future subsidy or low-cost program—or to the ACP program itself should Congress provide additional funding for the program.)
- Interviewed 25 stakeholders from 15 entities in several meetings and conducted follow-up interviews to further illuminate gaps, existing programs, and the ability of stakeholders to start or expand programs—and entered this information into MBI's Asset Inventory portal. See Section 5.
- Facilitation of a public stakeholder an information session to invite feedback and to inform Watertown residents about the Municipal Digital Equity Plan and provide a brief background on broadband access and digital equity in the city. See Section 5.10.
- Promoted MBI's residential digital equity survey and produced a report on Watertown-specific findings. See Section 0.

[1] The Digital Equity Act is a $2.75 billion federal program that, in part, funds state planning processes to establish a vision for digital equity that will guide overarching strategies and goals. The first draft of MBI's "Massachusetts State Digital Equity Plan" (SDEP) was released for public comment on November 13, 2023, and can be viewed here: https://broadband.masstech.org/news/mass-broadband-institute-announces-municipal-digital-equity-planning-program-participants. The SDEP report was in the process of being finalized for submission to the NTIA at the time this report was provided to the City.

- Developed recommendations with respect to strategies and activities designed to address gaps using potentially available funding. See Section 3 for recommendations and Section 7 for a summary of the funding landscape.

The City is well-served by wired broadband providers (see Section 4.1). The City might want to consider some targeted infrastructure efforts, such as seeking grant funding for Wi-Fi service in Watertown Housing Authority buildings. But the digital equity gaps in Watertown are generally not caused by a lack of infrastructure but rather are the result of residents' inability to afford service or devices, attain the necessary skills to maintain and effectively use these resources, or protect their online privacy and security. Many entities within the City are already engaged in a variety of efforts to close gaps in digital equity, but significant gaps remain.

1.2 Digital equity funding landscape

To implement strategies recommended in this report, the City and its stakeholders can potentially leverage a variety of funding sources.

Section 7 discusses the grant and funding landscape, including programs stemming from multiple COVID-19 relief efforts, as well as the federal Infrastructure Investment and Jobs Act (IIJA) and the Digital Equity Act. Additional support through the Federal Communications Commission's E-Rate program may also be available as discounts on eligible internet access, telecommunications services and related equipment to eligible schools and libraries, including programs to close the homework gap. These programs will create opportunities for state and local entities to strengthen digital equity and inclusion within their communities. While the exact level of federal funding that will be available for programs in Massachusetts is unknown, it is likely that millions of additional funding dollars will be available in the state over the next five years to advance digital equity and inclusion efforts statewide.

In Massachusetts, these programs include MBI's Broadband Innovation Fund, a $50 million fund that will support grants under the Digital Equity Partnerships Program and the Municipal Digital Equity Planning Program. This American Rescue Plan Act (ARPA) funding will support qualified organizations to work as partners to implement digital equity programs and will support municipalities as they develop local digital equity plans, such as this plan.

The City can also leverage upcoming opportunities for federal funding under the $2.75 billion Digital Equity Act. This funding will support two large grant programs administered by the National Telecommunications and Information Administration (NTIA).[2] These programs will require states to distribute their federal digital equity grant awards over a five fiscal-year period. States will direct this funding to a variety of state and local organizations and will create projects intended to advance digital equity goals throughout the state. However, this level of funding is unlikely to meet all needs.

[2] Digital Equity Act Programs: NTIA, https://broadbandusa.ntia.doc.gov/funding-programs/digital-equity-act-programs.

MBI may consider the findings of this digital equity plan and other studies in devising grant programs, and NTIA will also review digital equity planning documents from each of the states as it launches its own grant programs, likely starting in the second half of 2024. After the NTIA finalizes the program design for a $1.44 billion Digital Equity Capacity Building Grant Program, it will invite states to apply for grants based on a set amount of funding allocated to each state. NTIA is expected to launch this program in the second half of 2024 and allocate funding over five years. In Massachusetts, at least some of its allocation is expected to flow to local entities in the form of subgrants through MBI.

In 2025, NTIA will likely launch a nationwide direct competitive grant program—the Digital Equity Competitive Grant Program—where individual entities will apply for a portion of an additional $1.25 billion. If state and federal funds are not adequate to meet local needs, the City could consider developing its own grant program for targeted digital equity efforts.

2 Key findings

The following are key findings of this report.

2.1 High-speed wireline service is nearly ubiquitous in the City of Watertown, with robust competition

Digital equity gaps in Watertown are not caused by a lack of infrastructure or competition. Comcast is ubiquitous and RCN/Astound is nearly so; 99 percent of households have a choice of provider at speeds of 100 Mbps download/20 Mbps upload (100/20) or greater. Among these are 522 addresses that have the option of fiber from RCN/Astound (or from Verizon in the northern part of the City). Fixed wireless services are also available in some areas through T-Mobile or Verizon. Starry is another provider offering fixed wireless services at symmetrical speeds in small sections of the City. Fixed wireless offers an affordable option to wired service, but its performance is dependent on the distance from the location to the wireless infrastructure.

2.2 Broadband adoption rates are high in Watertown overall, but adoption lags among lower-income households

Internet adoption rates are relatively high in Watertown. The City's 94 percent adoption rate compares favorably to 90 percent in the state and 87 percent nationwide, as documented by the U.S. Census Bureau's American Community Survey (ACS). Even when only comparing households with residential wireline internet service, the City has an 86 percent subscription rate compared to the state's wireline adoption rate of 80 percent. However, this leaves an estimated 2,275 households in the City (or about 14 percent) without a subscription to residential wireline internet service, of which more than 900 rely on mobile phone connectivity only, as noted later. And among low-income households there is a significantly larger gap in wireline subscription. About 29 percent of Watertown households with income of less than $75,000 per year do not have a wireline subscription, nearly double the average across all income levels in the City.

2.3 ACP adoption is low in the City, at 12.5 percent of eligible households, significantly below the state figure of 29 percent, suggesting a need for enrollment support

At the time of this report, the internet service providers (ISP) in Watertown all participated in the Affordable Connectivity Program (ACP), either directly or through an affiliate, which provides a $30 monthly broadband service subsidy for eligible low-income households. However, of the approximately 5,600 households eligible for the subsidy, only 700 households (12.5 percent) were enrolled as of October 1, 2023. This is significantly below the statewide average (29 percent) and national average (38 percent).

The low enrollment rates are likely due to low awareness of the program, a challenging sign-up process, and perhaps reluctance on the part of some Watertown residents to apply for a federal subsidy program; either way, it suggests a need for enrollment support in the ACP as well as any successor programs and

the available low-cost programs from local broadband providers so as to maximize the benefit to households needing this support. Enrolling more households will also tend to take pressure off of hotspot lending programs, such as the one operated by Watertown Public Schools.

At the time this report was finalized, the FCC was planning to cease accepting new applications for the ACP subsidy on February 7, 2024. But ACP enrollment rates are still important to note as an illustration of the gap in adoption due to lack of affordability and the potential for enrollment in a future subsidy program or the existing low-cost programs offered by the ISPs operating in the City. Additional guidance on mitigating the impact of the program's end can be found in the FCC's "Affordable Connectivity Program (ACP) Wind-Down Fact Sheet".[3]

2.4 The cost of wireline internet subscriptions is still a challenge for low-income households

With respect to the MBI residential survey, respondents in Watertown reported that their average monthly cost for service was $116 bundled and $75 unbundled. Of the households earning less than $60,000 annually, 45 percent said it was very or somewhat hard to pay this bill, as compared to 12 percent of households earning $60,000 or more. This again points to the need for enrollment in any available subsidy or provider low-cost programs. Of those subscribing to wireline service, 85 percent said their service is good enough to meet their needs, regardless of ISP used.

Affordability concerns are associated with lower rates of wireline broadband subscriptions. While the ACS reports that Watertown has a higher subscription rate for wireline internet subscriptions than the state and national averages, an estimated 900 households, or about 5.8 percent, report using mobile devices exclusively to connect to the internet—and these are lower-income households. Reliance on cell phones can greatly limit users' ability to take advantage of many online applications. For example, it makes it difficult for families to connect to the Watertown Public Schools registration and online communication platform, as noted later in this report.

2.5 Watertown exceeds state and national averages for desktop or laptop ownership, but gaps remain that could be addressed by new or expanded local programs

Based on ACS data, 86.7 percent of households in Watertown own a desktop or a laptop computer, which exceeds state and federal averages of 82.5 percent and 78.9 percent, respectively. But there are still approximately 2,137 households (13.3 percent) that do not own a desktop or laptop, which are required for many of today's digital applications. As with subscription gaps, device gaps disproportionately affect low-income households and older residents. And stakeholders interviewed as

[3] Affordable Connectivity Program (ACP) Wind-Down Fact Sheet, FCC.gov, ACP_Wind-down_Fact_Sheet_Final.pdf (fcc.gov) (accessed January 26, 2024).

part of this project also noted that English language learners also disproportionately face gaps in device ownership. The library, schools, and Watertown Housing Authority all expressed a desire to increase device lending programs. As noted later, the City would also benefit from starting and expanding partnerships with nonprofits, such as Tech Goes Home, that provide skills classes and free devices to low-income residents, providing a better and longer-term solution compared to device lending programs.

2.6 Existing skills programs at the Watertown Free Public Library and other entities are heavily used, but more resources are needed

The Watertown Free Public Library offers digital education and literacy classes that are heavily used by older and low-income residents. Topics range from how to operate a computer or phone, to how to pay bills or enroll in state and federal benefits online. Stakeholders from entities including the Council on Aging, Wayside Youth and Family Support Network, and the Watertown Housing Authority indicated that more digital education classes, with greater variety and in multiple languages, are needed to support the wide range of digital skills interests and diverse populations in the City. Such efforts could also be expanded at WCA-TV and the housing authority.

2.7 Across the income spectrum, Watertown residents are very concerned about privacy and security online

Watertown residents who participated in the MBI residential survey expressed deep concerns about online safety privacy, and these sentiments held across the income spectrum. Approximately 84 percent of respondents are either somewhat concerned or very concerned about their online safety. Additionally, 65 percent of respondents stated their main concern online is having personal data stolen or used without their consent. These findings underscore the need for greater general skills training.

More detail on these findings and supporting data can be found in Sections 4, 5, and 0.

3 Recommendations

These recommendations reflect strategies and funding sources the City and its stakeholders might explore to help close digital equity gaps in Watertown. Most recommendations involve work that established, proven, and trusted community partners can perform.

These recommendations are informed by the outreach, analysis, and information gathered during this project, including from local organizations that provided information about their current programs, planning, and operational needs.

Table 1 summarizes the recommendations. The remaining subsections provide detail on these recommendations. Additional supporting material is contained in the later sections of the report.

Section **Error! Reference source not found.** of this report contains additional budgetary amounts and statements of need not included in this table. The first recommendation—for setting up a digital equity coalition—would create an entity within Watertown comprised of local stakeholders, the City, and any other local philanthropies charged with facilitating coordination, setting priorities, and guiding funding decisions to the full range of entities engaged in addressing digital equity gaps in Watertown.

Table 1: Summary of recommendations and potential costs

Recommendation	Access and affordability	Devices	Skills	Privacy/ security	Potential annual cost
Convene a digital equity coalition and facilitate annual or biannual meetings to coordinate efforts	X	X	X	X	N/A
Set up a modest grant fund in the event state and federal funds fall short	X	X	X	X	$25,000
Hire a digital navigator to help with enrollment in broadband subsidy or low-cost ISP plans	X		X	X	$80,000
Hire multilingual digital navigator to serve mainly at schools but also to supplement needs at library, housing authority, and WCA-TV			X	X	$80,000

Recommendation	Access and affordability	Devices	Skills	Privacy/ security	Potential annual cost
Promote wider device ownership in Watertown through partnerships with Tech Goes Home and potentially TEK Collaborative, emphasizing partnerships with the housing authority and Council on Aging		X	X	X	$1,500 per person for technical skills class concluding with provision of new laptop
Fund an expansion of Chromebook availability for lending by the library, housing authority and Boys & Girls club (up to 40 devices total across three entities)	X	X			$12,000
Fund new workstations at Veterans' Services office and at WCA-TV	X	X	X	X	$3,600 for equipment at two sites;
Partner with MAPC on program to provide free Wi-Fi access in public housing	X	X			No cost first year; TBD for subsequent years
Provide technical support to existing programs at Veterans' Services, WCA-TV, and the library	X		X	X	Portion of time from digital navigators mentioned above
Explore cybersecurity programming/partnership opportunities				X	TBD based on MBI programs

3.1 Form a local digital equity coalition to coordinate efforts and make recommendations to the City and stakeholders

City government is well suited to implementing some solutions, especially with respect to infrastructure, staffing, and certain kinds of programs, but it cannot along address all challenges related to digital equity, such as connecting residents with subsidy programs, providing devices, assisting with device maintenance and updates, and helping people develop better computer skills.

An important role the City could play is in forming a digital equity coalition to convene the many organizations already providing or planning to provide services in Watertown to facilitate greater coordination. One approach could be to establish this function as a digital equity panel within the Human

Services Committee. A coalition meeting annually or biannually—with the structure to encourage members to distribute timely and relevant information and opportunities throughout the rest of the year—would help inform a holistic programmatic strategy and make recommendations. Representatives from City Hall, the schools, library, Watertown Community TV and human services organizations would be logical participants; these entities provide services to overlapping populations.

Such coalitions are critical to engage stakeholders and drive change. The Essex County Community Foundation (ECCF) has served in this role on the North Shore and is expected to continue serving this function. Another model in Massachusetts is the Alliance for Digital Equity, established in 2021 by Baystate Health and the Community Foundation of Western Massachusetts to address broadband affordability, access, and digital literacy for all residents of Berkshire, Hampden, Hampshire, and Franklin counties in Western Massachusetts.

Elsewhere in the country, the Digital Inclusion Alliance in San Antonio, Texas, is cultivating and promoting public policies and initiatives that prioritize digital equity and the City of San Jose, California created the Digital Inclusion Partnership with a statewide organization that has deep expertise in digital equity work to coordinate digital inclusion programming for local nonprofits that are trusted in the communities they serve.

Working with MBI and other larger regional entities the City also could expand partnerships across communities with libraries, senior groups, and other social service and public health entities to further improve coordination.

3.2 Consider setting up a modest City grant fund to fill small gaps and reduce reliance on uncertain or finite state or federal funding streams

The structure and landscape of federal and state digital equity funding is evolving. MBI has recently released the State Digital Equity Plan, and federal agencies are crafting rules for federal grant programs that will distribute $2.75 billion nationwide. The City of Watertown is well positioned to serve as a conduit for distributing federal and state digital equity funds to local organizations; however, the exact role of local nonprofits and local government agencies in the administration of this funding is currently unclear. (This is another reason why creating a coalition to track funding sources and coordinate efforts in the next few years is important.)

Given the uncertainty at the state level, the City could consider using its own local resources to create a grant fund to address specific gaps in digital equity and inclusion within the City. The City could consider creating a modest initial grant fund of perhaps $25,000 in the first year, with awards ranging from $5,000 to $10,000 to local nonprofits and community organizations to support existing programs and provide seed funding for new ones. The City can consider reevaluating the total grant fund amount each year.

Another possibility is to use these small grants to fund existing organizations and programs discussed below to encourage them to expand their efforts into education and enrollment efforts for affordability programs and digital navigators to support adoption efforts.

A simple grant application, organized and managed by the City, could allow local organizations serving Watertown to provide specific proposals for training, enrollment support for affordability programs, or device subsidy and assistance programs. The City could develop metrics and reporting on timelines, financial accountability, and program results that will demonstrate the effectiveness of the use of these awarded funds and how they help meet digital equity goals and objectives created by MBI.

3.3 Fund a digital navigator position at the library and housing authority to increase efforts to enroll residents in government subsidy programs or ISPs' low-cost programs

Digital navigators could assist with the needs of both the Watertown Free Public Library and the Watertown Housing Authority, and potentially other sites. Library stakeholders stated that they currently receive more than 1,000 requests per month for one-on-one support for online tasks like filling out housing applications, performing job searches, and many other tasks which could include assistance with enrollment support for government broadband subsidy programs and ISPs' low-cost programs offered by local broadband providers. One core function of this position can be to help residents learn how to access lower-cost solutions from existing providers. A full-time digital navigator position, at an estimated cost of $80,000 annually would help address these requests and could also offer regular skills classes at the library and elsewhere.

Such a position could also be shared with the Watertown Housing Authority. In the summer of 2023, the housing authority introduced an onsite Learning Center offering 11 desktop computers, and the housing authority has expressed interest in expanding access to devices through a lending program. To assist residents with these resources, the housing authority stated that it would like to have a part-time technical support specialist, performing a role that would overlap with that of this recommended digital navigator position.

The local digital equity coalition recommended above could assist in defining the role and the division of labor to best meet local needs. Finally, the digital navigator described here and in the next subsection could play a role in implementing device training and provision programs through Tech Goes Home.

3.4 Fund a second, multilingual digital navigator position with a primary focus of supporting use of the Watertown Public Schools online platform for students and families

A second digital navigator with multiple language skills could serve in at least three roles in Watertown, mainly at Watertown Public Schools. The schools increasingly rely on an online platform for student registration, submittal of online forms (such as immunization records), and ongoing digital communications with families and students throughout the school year. But digital equity gaps in the

City have left some parents, especially from low-income families and/or who come from households where English is a second language, facing challenges in registration and ongoing use of this platform.

Lack of access to the platform hinders the ability of schools to support all families equally and can impede students' full academic participation. Many students and families also have a need for ongoing technical support and skills development. As such, half of this digital navigator's time could be spent serving in this role. The role could be funded in part with the schools' existing annual budget of $25,000 for translation and assistance with digital tasks; a modest budget increase from this level could support a full-time position.

The remainder of this person's time could be spent providing multilingual digital skills classes at the Watertown Public Library for English Language Learners (ELL) and at Watertown TV (WCA-TV), and support potential device provision programs, as mentioned in the next subsection. Again, a potential role of the digital equity coalition could be to recommend which budget lines are best suited to supporting the position, the precise duties at each entity, and how the person's time is divided.

3.5 Expand device access through new partnerships with Tech Goes Home and other training and device provision nonprofits

Tech Goes Home (TGH) is a nonprofit organization that partners with community organizations to provide curated technology-based support through device distribution, internet access, digital literacy, and education. Upon successful completion of a TGH course through the community partner, students are provided with a device for personal use. The Housing Authority stated that it would like to partner with TGH, and the Council on Aging would be another logical partner for a TGH partnership. This requires funding of about $1,500 per learner. Watertown currently promotes the device donation and distribution program of TEK Collaborative[4] an Amesbury-based nonprofit that refurbishes and supplies computers to those in need. However, at the time this report was delivered to the City, TEK Collaborative indicated on its website that requests exceeded supply and that it could only place people on a waiting list for new devices.[5] Developments at TEK Collaborative bear watching.

3.6 Fund a moderate expansion of device lending programs by the schools, library and others

Ultimately it is in the best interest of Watertown residents to own their own computers, not rely on lending programs. However, several stakeholders mentioned a need for moderate support to enhance some existing device lending programs. The budgetary amounts listed in the table above would support local entities in the following ways.

[4] In response to the digital equity needs illuminated by the Covid 19 pandemic, TEK Collaborative was established to help close the digital divide by providing adequate internet enabled devices at no cost to those in need. TEK Collaborative forms strategic partnerships with businesses, organizations, schools, and government to create an ecosystem of device access, internet access, and education.

[5] "About TEK Collaborative", accessed November 25, 2023 About (tekcollaborative.org).

Library device lending program: The library offers both onsite desktop computers as well as devices for loan. There are currently 16 desktop computers and 13 laptops available to residents in two-hour increments on site. The device loan program allows residents to check out hotspots, laptops, or e-readers. Currently, the inventory of Chromebooks for loan is not sufficient to meet public demand, and the two-week time frame for lending is insufficient for ongoing use. The library would like to add 10 Chromebooks to its inventory.

Devices for Boys & Girls Club: The Boys & Girls Club has eight MacBooks for use by the youth enrolled in its after-school programs. These devices are aging and need to be replaced. The Club would like to replace them with Chromebooks and increase the number available to 14 devices.

Watertown Housing Authority program: The Watertown Housing Authority would also like to purchase 15 Chromebooks and create a lending program for its residents.

A separate issue involves hotspot lending. The Watertown Public Schools currently have between 40 and 50 AT&T hotspot devices for loan to enable students to connect their Chromebooks to the internet. The schools have expressed a need for an additional 50 hotspots to meet the needs of the students who need connectivity in their homes. However, a better solution to home connectivity is through enrollment support in the ACP (or any successor subsidy programs) and to existing low-cost programs offered by the ISPs serving Watertown. Additionally, provision of Wi-Fi at the Watertown Housing Authority will provide a second approach to home connectivity. If low-income student families get home broadband subscriptions or access to free Wi-Fi, they will no longer need to borrow hotspots—and will have stronger and more reliable internet connections than is possible from hotspots connected to mobile networks.

3.7 Partner with MAPC on program to provide free Wi-Fi access in public housing

MBI has partnered with the Metropolitan Area Planning Council (MAPC) to provide procurement support, capital expense funding, and funding for the first year of operating expenses to provide free Wi-Fi internet access to residents of public and affordable housing in Massachusetts. The effort targets residents most likely to face barriers to connectivity—those experiencing housing insecurity who have access to broadband but cannot afford it.[6] Details by municipality are yet to be determined. (CTC previously provided the City with information about the program and sent the City the application link wherein the City or Housing Authority can express interest.)

The anticipated size of the grant program is $5.6 million, with plans to address roughly 2,400 housing units. The MAPC will initially lead project management and procurement for apartment Wi-Fi projects. Operational expenses for year two and beyond are expected to be assumed by local partners, including municipalities, public housing authorities, and community development corporations. Efforts to provide

[6] "Smart Growth and Regional Collaboration: Apartment Wi-Fi," MAPC, https://www.mapc.org/our-work/expertise/digital-equity/apartment-wi-fi/ (accessed November 17, 2023).

reliable connectivity at home would ensure academic continuity for students and help bridge the digital divide for all residents.

Additionally, or as an alternative, the City or Housing Authority could consider exploring single-payer arrangements with ISPs to deliver high-speed, reliable internet service to residents in public housing and other muti-family/unit dwellings. The City may consider engaging with local broadband providers to seek quotes for providing reduced-cost service for low-income housing.

3.8 Provide technical support to existing programs at Veterans' Services, WCA-TV, and the library

A number of entities in Watertown are already providing various forms of skills programs and technical support and requested additional sensible levels of support, as mentioned below. One role of the digital equity coalition would be to coordinate these requests and make recommendations.

Digital literacy classes in Spanish, Portuguese, and Armenian at the library: The Adult Reference Department at the Watertown Free Public Library offers six to ten digital literacy classes per month in English. This does not address the needs of a large non-English speaking population. The library would like to add instructors to lead these classes in other languages including Spanish, Portuguese, and Armenian. Fulfilling this request could be a role for the multilingual digital navigator recommended above.

Tech support workstation at the veterans' center: The City's Veterans' Services office has the capacity to provide in-office technical support to meet current demand; however, it would benefit from adding an additional workstation to assist local veterans. This budgetary request is contained in the table above; providing such training could be a role of one or both digital navigators recommended above.

Staff support at Watertown Cable Access Corporation (WCA-TV): While it already provides closed captioning across platforms, WCA-TV would like to offer additional support and outreach to the City's aging population and non-English speaking residents. WCA-TV would like to conduct training to seniors and English language learners for basic technological skills. This request could be met with the budgetary amount mentioned in the table above, with technical support from the digital navigators.

Enrollment assistance for government broadband subsidy programs and ISPs' low-cost programs: While nearly all public housing residents qualify for various government programs and ISP low-cost programs, many struggle with the application requirements due to status, age, comprehension of program and other barriers. The Housing Authority Resident Services department currently assists residents with applying for ACP and works with Astound (formerly RCN) which provides qualified applicants with a free month of service to assist in getting them connected. The digital navigators could assist with enrollment of public housing residents.

3.9 Explore cybersecurity programming/partnership opportunities

Concerns about online safety and privacy in Watertown are significant, with 84 percent of Watertown respondents to the MBI survey stating they are either somewhat concerned or very concerned about their online safety, and 65 percent of Watertown respondents saying their main concern online is having personal data stolen or used without their consent. MBI's draft state digital equity plan (SDEP) states that a future action to address online safety will include the development of a statewide cyber security curriculum. Additional actions will include training existing digital navigators, so they support, protect, and inform clients about their online safety, and embedding cyber security awareness into youth digital literacy programming.

In the near term, Watertown stakeholders can leverage the resources of MassTech Collaborative's MassCyberSecurity online safety initiatives. As part of this, there is also a timely opportunity to apply for a state grant to enhance cybersecurity awareness grant for anyone using City or other government networks.[7]

[7] "About the Municipal Cybersecurity Awareness Grant Program," Mass.gov, https://www.mass.gov/info-details/about-the-municipal-cybersecurity-awareness-grant-program#how-to-apply-.

4 Current broadband assessment and ACP gap analysis

The current state assessment and ACP gap reports provide an analysis of current broadband conditions in Watertown related to infrastructure availability, level of competition, uptake of services (and of available subsidies) by residents, and device ownership. Data is based on publicly available information including from the U.S. Census Bureau, the American Community Survey (ACS), and the Federal Communications Commission (FCC).

The following sections outline the availability of broadband service in the City and the ACP adoption rates.

4.1 High-speed wired service is nearly ubiquitous in Watertown, and there is competition nearly everywhere.

Wired service is ubiquitous from Comcast, and RCN/Astound provides a second cable option in most of the City. 46 locations or 0.6 percent do not have a choice of internet service provider. The lack of competition for these households means they are unable to switch providers to take advantage of lower promotional pricing from a competitor.

There are 522 addresses in various parts of the City that have the option of fiber optic connections, either from RCN/Astound or, in some cases, from Verizon at the northern edge of the City, as an alternative to Comcast.

Fixed wireless services are also available in the City. Both T-Mobile and Verizon offer fixed wireless home services (leveraging the networks previously used only for mobile service) to some areas of Watertown. These services provide a relatively affordable option, but with the significant caveat that performance of these networks is dependent on individual subscribers' distance from wireless facilities, and the data speeds may be cut (or "throttled") by these providers during times of congestion. In addition, the fixed wireless service Starry offers symmetrical speeds to certain apartment buildings in the southeastern part of Watertown. This is likely because these apartment buildings have agreed to install Starry receivers on their roofs.

CTC reviewed FCC data, researched websites of broadband providers operating in Watertown, and engaged in phone conversations with representatives of ISPs to collect market data on residential broadband pricing, availability, and level of competition.

To reiterate, it is important to note the distinction between "addresses" or "locations" and "households" or "units". While FCC data utilized in the following analysis provided address level information, physical addresses and locations may have more than one household or unit, as is the case with duplexes and multi-tenant or apartment buildings. Where an address or location is serviced by a single provider or technology, an assumption can be made that the same is true for all households or units contained therein.

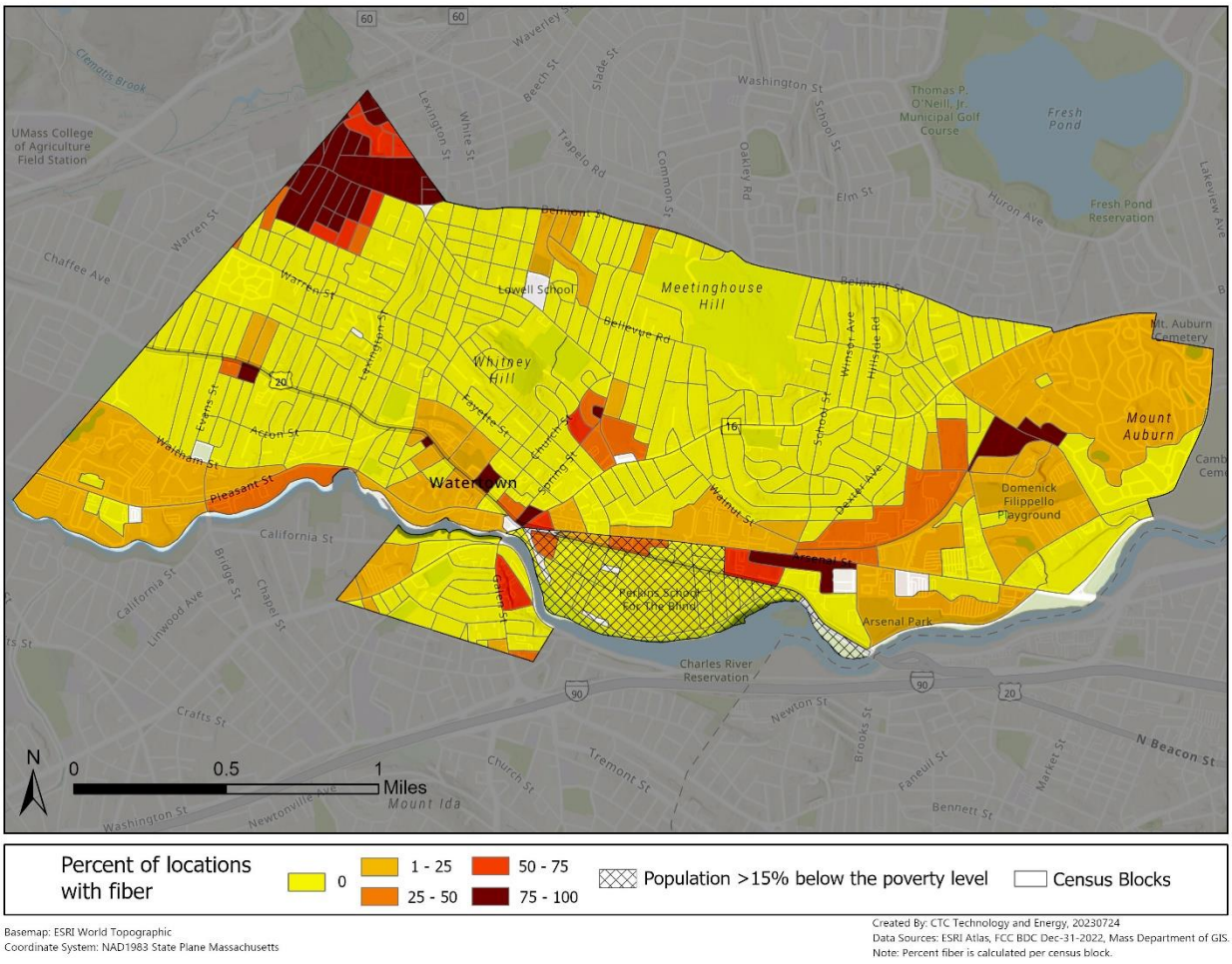
Table 2 shows the breakdown of addresses by number of providers. Although there are a handful of addresses (four) where FCC data show that service is available only from a fixed-wireless provider or are underserved or unserved, these are likely not residential addresses or may reflect errors in the data.

Table 2: State of high-speed broadband competition in Watertown per FCC data

Availability of wireline broadband service		**Addresses**
Served addresses where 100 Mbps download, 20 Mbps upload (100/20) or greater is available	Competition from two or more providers – usually Comcast plus RCN/Astound cable	7,511
	Fiber option available in competition areas	522
	Only one wireline provider (usually Comcast)	42
Addresses served only by licensed fixed wireless		1
Underserved addresses—meaning they cannot receive 100/20 service but can get at least 25/3 (wireline or licensed fixed wireless)		1
Unserved addresses—meaning that cannot get 25/3 (wireline or licensed fixed wireless)		2
Total locations		**7,557**

Figure 1: shows at a high level the limited areas where RCN/Astound (and in some cases Verizon Fios in the northern part of Watertown) are providing fiber. Because CTC does not have access to address-level data from the FCC's National Broadband Map, the figure below only shows this as a percentage of premises within census blocks.

Figure 1: Fiber availability in Watertown as a percentage of total locations within census blocks



Some residents have the option to add residential fixed wireless service from Verizon or T-Mobile. Some have the option of fixed wireless service from Starry. These are known as "licensed fixed wireless" or LFW because they use licensed spectrum under the exclusive control of the respective companies and cannot be used by others.

While the FCC has repeatedly noted that mobile service is an inadequate substitute for fixed broadband services,[8] an estimated 15 percent of U.S. adults continue to rely on their smartphones as the only source of home broadband connectivity[9] – a trend that is more common among young adults and low-income households.[10] Most smartphones can be used as wireless hotspots to connect other computing devices to the internet.

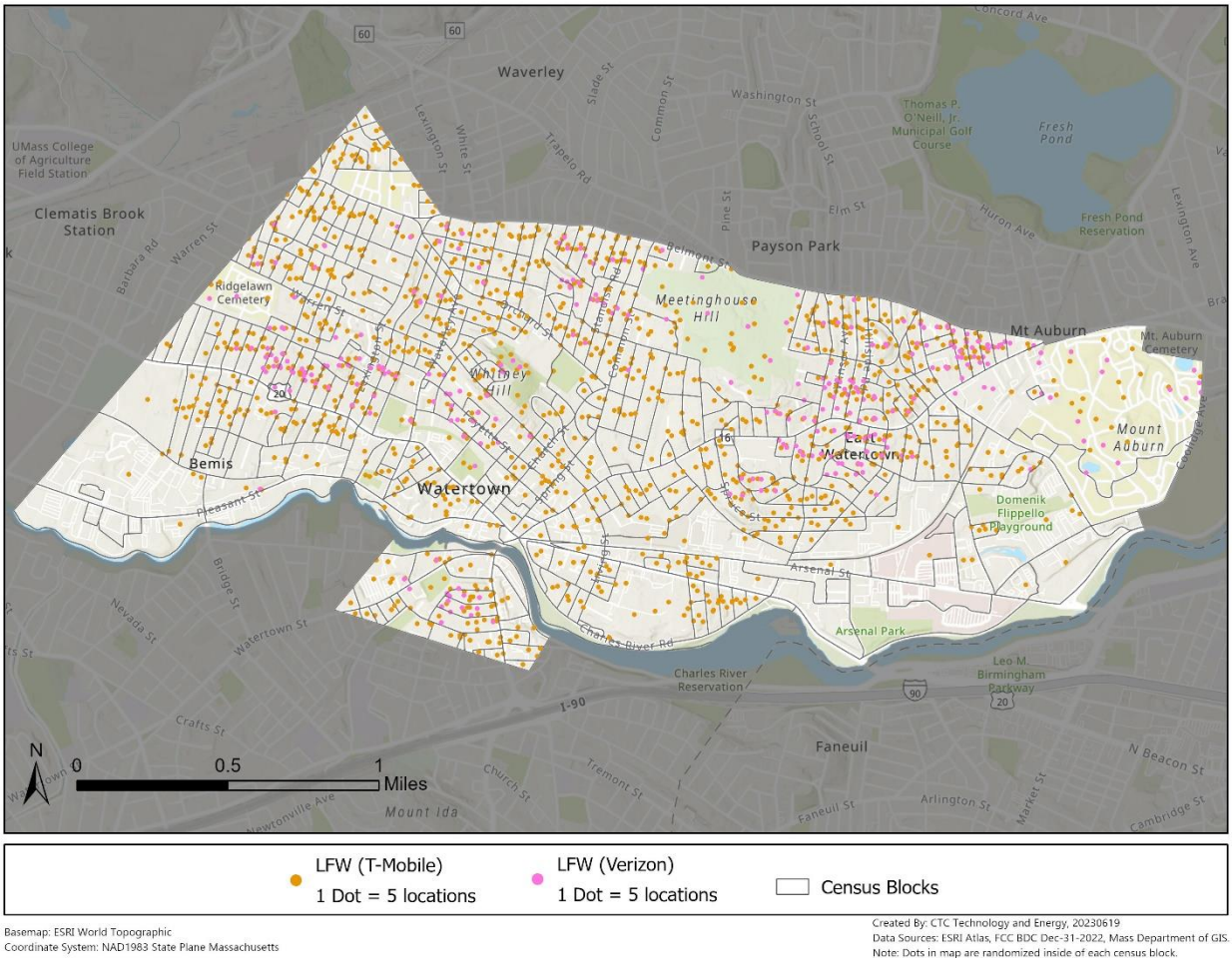
[8] E.g., 2020 Broadband Deployment Report, paragraph 11.
[9] Andrew Perrin, "Mobile Technology and Home Broadband 2021," Pew Research Center, June 3, 2021, https://www.pewresearch.org/internet/2021/06/03/mobile-technology-and-home-broadband-2021/.
[10] Andrew Perrin, "Mobile Technology and Home Broadband 2021."

These new fixed wireless services from Verizon and T-Mobile in Watertown, on the other hand, serve dedicated fixed hotspots in the home. Fixed wireless is distinct from mobile wireless, since it is stationary in the home as opposed to portable on a phone and generally has lower latency and higher bandwidth. The speeds will vary by location, and these plans come with the risk that the carriers will throttle or limit available speeds during times of congestion.

The FCC notes that mobile wireless providers have been making these offerings an increasingly attractive alternative to fixed services with more competitive pricing,[11] yet mobile wireless technologies remain a complement of, and not a full replacement to, widespread fixed broadband availability.

Figure 2 shows reported coverage levels by fixed wireless providers. This coverage may be overstated in terms of how many premises can actually receive this service or do so at adequate speeds.

Figure 2: Reported fixed wireless coverage in Watertown



Starry is a fixed wireless service available at certain apartment buildings in Watertown, including 125 Coolidge Ave., 151 Coolidge Ave., 199 Coolidge Ave., and 225 Coolidge Ave. The service is likely available

[11] 2020 Broadband Deployment Report, paragraph 11.

at these sites because building management allowed Starry receivers to be placed on the rooftops. Unlike similar services from mobile providers, Starry provides symmetrical speeds of 200 Mbps and sometimes more in some circumstances. Figure 3 shows the locations where Starry is available in the four large apartment complexes on the south side of Coolidge Avenue, at the addresses mentioned above.

Figure 3: Starry availability in apartment buildings on the south side of Coolidge Avenue

4.2 Adoption of the ACP is extremely low in Watertown

The Affordable Connectivity Program (ACP) has provided a monthly subsidy toward home internet subscriptions for eligible low-income households. As of October 1, 2023, estimates based on FCC data by zip code reported enrollment suggest that only 700 City households were receiving the ACP subsidy—about 12.5 percent of the estimated 5,600 eligible.[12] This enrollment rate is significantly lower than the statewide average of 29 percent and the national figure of 38 percent. The relatively low enrollment rates are likely due to low awareness, a challenging sign-up process, and perhaps reluctance on the part of some Watertown residents.

[12] Estimates are based on 2021 American Community Survey reported data on household income, food stamp recipiency, Medicaid recipiency, supplemental security income, and public assistance income.

- **The cost of broadband subscriptions is a major challenge for lower-income Watertown residents.** Affordability of service is an issue for many residents of Watertown. While 14.2 percent of households lack a wireline internet subscription, the great majority of those are low-income families. 77.4 percent of the Watertown households that do not have a broadband subscription earn below $75,000 per year, suggesting a significant gap in affordability or interest.
- **Device gaps also represent a challenge for low-income residents.** According to ACS data, 13.3 percent of households in Watertown do not own a desktop or laptop computer device—which presents an obvious barrier to internet adoption.

Although at the time this report was finalized the ACP program was set to end new enrollments as of February 7 (barring new funding from Congress), residents may still need help enrolling in other low-cost or subsidy programs offered by the City's broadband providers. Those programs are described in the next subsection.

While outreach may increase enrollment in some areas, some eligible residents will be uninterested or unwilling to participate. This may be the case if a household cannot afford internet even if it receives the ACP, feels no need to use the internet, receives satisfactory service from a cellular provider, receives free internet access through a communal source, or does not want to apply for a federal subsidy program.

Table 3: ACP enrollment in Watertown

	Eligible households enrolled	Enrolled households	Eligible households	Unenrolled eligible households
Watertown	12.5%	~700	5,600	4,900
Massachusetts	29%	339,115	1,156,300	817,185
United States	38%	21,166,936	55,179,000	34,012,064

4.3 Eligible Watertown residents have been able to obtain free high-speed service offerings with the ACP benefit, but for others, initial prices rise after promotional periods end

All the broadband providers in Watertown participate in the ACP, which is available to eligible low-income residents, and both Comcast and RCN/Astound offer low-cost programs; together, the programs enable low-income residents to receive service at no cost. Mobile plans are also ACP-eligible, but each household can only use the ACP once—so if a household is using the benefit for a mobile plan, they cannot get the benefit again for a home plan. Starry also offers a low-cost program that is free with the ACP.

Other Watertown residents not able to qualify for or navigate the low-income application process with ISPs may choose Comcast and obtain initial pricing of $25 per month, but these prices rise sharply

following the promotional period. Those who do not have the option of switching to another provider such as Verizon are left paying at least $77 for basic service, not including router rental—highlighting the affordability challenge for Watertown residents over the long term and the importance of the available low-cost programs if residents can navigate them.

The tables below list the service options; options that are free with the ACP and/or are designed for eligible low-income residents are shaded green. Table 4 shows Comcast's service plans and costs; Table 5 shows RCN/Astound's service plans and costs.

Table 4: Comcast (Xfinity) advertised service plans in Watertown (low-income programs in green)

Package	Internet speed	Monthly Cost	Notes
Internet Essentials	50/10 Mbps	$9.95 (free with ACP subsidy)	Available to eligible low-income customers following an application process and subject to certain conditions. Internet Essentials also includes added benefits; customers can purchase a refurbished computer for $149.99.[13]
Internet Essentials Plus	100/20 Mbps	$29.95 (free with ACP subsidy)	Available to eligible low-income customers following an application process and subject to certain conditions. Internet Essentials also includes added benefits; customers can purchase a refurbished computer for $149.99.
Connect More	200/10 Mbps	$25 for the first 24 months, then $77 plus $15/mo. router rental fee	Pricing guaranteed for 24 months. No term contract. Includes $10/mo. automatic payments and paperless billing discount with a stored bank account. Discount is $5/mo. when using a stored credit card.
Fast	400/10 Mbps	$35 for the first 24 months, then $92 plus $15/mo. router rental fee	Pricing guaranteed for 24 months. No term contract. Includes $10/mo. automatic payments and paperless billing discount with a stored bank account. Discount is $5/mo. when using a stored credit card.
Superfast	800/10 Mbps	$60 for the first 24 months, then $97 plus $15/mo. router rental fee	Pricing guaranteed for 24 months. No term contract. Includes $10/mo. automatic payments and paperless billing discount with a stored bank account. Discount is $5/mo. when using a stored credit card.

[13] Comcast, "Comcast Broadband Opportunity Program" (accessed July 2023).
Apply for Internet Essentials or Internet Essentials Plus From Comcast - Xfinity Support

Package	Internet speed	Monthly Cost	Notes
Gigabit	1000/20 Mbps	$70 for the first 24 months, then $102 plus $15/mo. router rental fee	Pricing guaranteed for 24 months. No term contract. Includes $10/mo. automatic payments and paperless billing discount with a stored bank account. Discount is $5/mo. when using a stored credit card.
Gigabit Extra	1200/35 Mbps	$80 for the first 12 months, then $107 plus $15/mo. router rental fee	Pricing guaranteed for 24 months. No term contract. Includes $10/mo. automatic payments and paperless billing discount with a stored bank account. Discount is $5/mo. when using a stored credit card.
Gigabit X2	2,000/2,000 Mbps	$120 plus $15/mo. router rental fee	This is a non-promotional rate. No term contract. Includes $10/mo. automatic payments and paperless billing discount with a stored bank account. Discount is $5/mo. when using a stored credit card.

Table 5: RCN/Astound advertised service plans in Watertown (low-income program in green)

Package	Internet speed	Monthly Cost	Notes
Internet First	50/10 Mbps	$9.95	Available only to eligible low-income customers following an application process and subject to certain conditions. [14]
300	300/20 Mbps	$20/mo. plus one-time activation fee of $9.99	Promotional rate reflects a $5 discount for autopay and paperless billing. Includes necessary equipment, two months of free service, and free installation, otherwise $79.95. Pricing good for 24 months. No contract required.
600	600/20 Mbps	$35/mo. plus one-time activation fee of $9.99	Promotional rate reflects a $5 discount for autopay and paperless billing. Includes necessary equipment, two months of free service, and free installation, otherwise $79.95. Pricing good for 24 months. No contract required.
940	940/20 Mbps	$50/mo. plus one-time activation fee of $9.99	Promotional rate reflects a $5 discount for autopay and paperless billing. Includes necessary equipment, two months of free service, and free installation, otherwise $79.95. Pricing good for 24 months. No contract required.

[14] "Internet First: Easy, affordable high speed internet," Internet First, https://www.internetfirst.com/ (accessed July 2023).

Package	Internet speed	Monthly Cost	Notes
1200	1200/20 Mbps	$60/mo. plus one-time activation fee of $9.99	Promotional rate reflects a $5 discount for autopay and paperless billing. Includes necessary equipment, two months of free service, and free installation, otherwise $79.95. Pricing good for 24 months. No contract required.

The fixed wireless options in Watertown are more affordable but—in the case of Verizon and T-Mobile—come with the significant caveats that they are not universally available, that speeds at individual locations can vary widely, and that these services are subject to throttling in times of network congestion. Starry is another fixed wireless option available at some locations in Watertown that offers symmetrical speeds.

Table 6: T-Mobile advertised home internet service plan in shows pricing for T-Mobile's 5G Home Internet plan at $50/month for 5G Home Internet-only service. T-Mobile will provide 5G Home Internet at $30/month if it is bundled with a cellular plan that costs between $60 and $100 per month for a single line.[15] T-Mobile prices its 5G Home Internet plans regardless of provided speeds.

T-Mobile does not participate in ACP directly for either its 5G Home Internet or mobile data plans.[16] Only T-Mobile affiliates – Metro by T-Mobile and Assurance Wireless – participate in ACP and offer discounts on mobile data plans. Watertown residents who qualify for ACP must sign up with prepaid provider Metro by T-Mobile for 5G Home Internet and can apply the ACP discount to the bundled 5G prepaid mobile plan. Metro by T-Mobile offers a 5G Home Internet plan and a mobile prepaid voice and data plan for $50 a month without the ACP discount and $20 with the ACP discount.[17] Assurance Wireless does not offer 5G Home Internet.

Table 6: T-Mobile advertised home internet service plan in Watertown

Package	Internet speed	Monthly Cost	

[15] See T-Mobile Home Internet webpage, https://www.t-mobile.com/home-internet/plans?INTNAV=tNav%3APlans%3AHomeInternetPlan (accessed November 19, 2023).

[16] See T-Mobile Newsroom, February 8, 2023 Press Release, "Taking part in ACP- through both Assurance Wireless and Metro by T-Mobile – is just one way that T-Mobile demonstrates its commitment to bringing wireless access to everyone." https://www.t-mobile.com/news/community/t-mobile-expands-acp; See also, T-Mobile website, "T-Mobile is proud to participate in the new federal Affordable Connectivity Program, which offers internet service payment assistance to eligible households. We're making the program available through Metro by T-Mobile and Assurance Wireless." https://www.t-mobile.com/brand/affordable-connectivity-program?INTNAV=fNav%3AAdditionalSupport%3AAffordableConnectivityProgram.

[17] Metro by T-Mobile 5G Home Internet, https://www.metrobyt-mobile.com/plans/home-internet (accessed November 19, 2023). Customers that are not participating in autopay will pay $25/month. Customers must also purchase a modem for a one-time fee of $49.99.

5G Home Internet	75/20 Mbps*	$30 mo. for T-Mobile 5G Wireless customers; $50 mo. for home internet service only	Pricing includes a $5/mo. autopay discount. $30 service is only available to customers with a T-Mobile 5G phone and plan offered between $60-100/mo., plus the cost of a handset. Gateway router provided at no charge but one-time $35 device connection charge at sign up.

* Speeds are estimated and rounded. Quoted download speeds were 76-245 Mbps with claims that 50% of customers experience speeds in this range and the remaining customers could receive service faster or slower than this range. Upload speeds were quoted as 21-40 Mbps.

Table 7 shows Verizon Wireless' home internet service plans. Unlike T-Mobile, Verizon does not require users to subscribe to Verizon Wireless mobile plans to get these home internet options. These plans include a Verizon Forward program which can provide 300/20 Mbps service that is free to eligible low-income households with the ACP and Verizon discounts.

Table 7: Verizon Wireless fixed broadband service plans (low-income program in green)

Wireless Home Service Plans	Advertised Maximum Download/Upload Speeds	Monthly Price (non-promotional)	Monthly Bundled Price with 5G Phone
LTE Home	25/4 to 50/4 Mbps	$60	$25
5G Home Internet	85/10 to 300/20 Mbps	$60	$25
5G Home Internet (Verizon Forward Program)	85/10 to 300/20 Mbps	Free with ACP and Verizon discounts	
5G Home Plus	5G Ultra Wideband	$80	$35

Table 8 shows Starry's service plan options. Notably, Starry offers a $15 low-cost program for eligible low-income residents, which includes all residents of public housing (if the service is available), even if they are not enrolled in the ACP. Additionally, the faster $30 service also would be free with the ACP subsidy. However, Starry's availability in Watertown is limited.

Table 8: Starry services and pricing (low-income programs in green)

Service offering	Monthly Cost
Starry Gigabit 1,000/500 Mbps	$80
Starry Pro 500/250 Mbps	$65
Starry Plus 200/100 Mbps	$50
Starry Select 100/50 Mbps	$30 (free with ACP)
Low-cost Plan (Starry Connect) 30/30 Mbps	$15 (free with ACP)

4.4 ACS data reveal that low-income residents face gaps in subscriptions and device ownership, but that citywide figures outperform the state and the U.S.

Data on internet adoption and device ownership is important to fully understand the nature of the digital divide in Watertown. The ACS survey data show that Watertown is ahead of state and national averages in internet adoption and device ownership. But while high-speed wireline broadband services are available throughout Watertown, many households do not subscribe or own devices necessary to fully use these services—and those lacking subscriptions or devices are largely lower-income households.

The ACS is conducted yearly and nationwide by the U.S. Census Bureau. However, it is important to note a five-year sampling period (2016 – 2021)[18] that may not accurately illustrate most recent trends.

A preliminary analysis of the ACS data found that in Watertown:

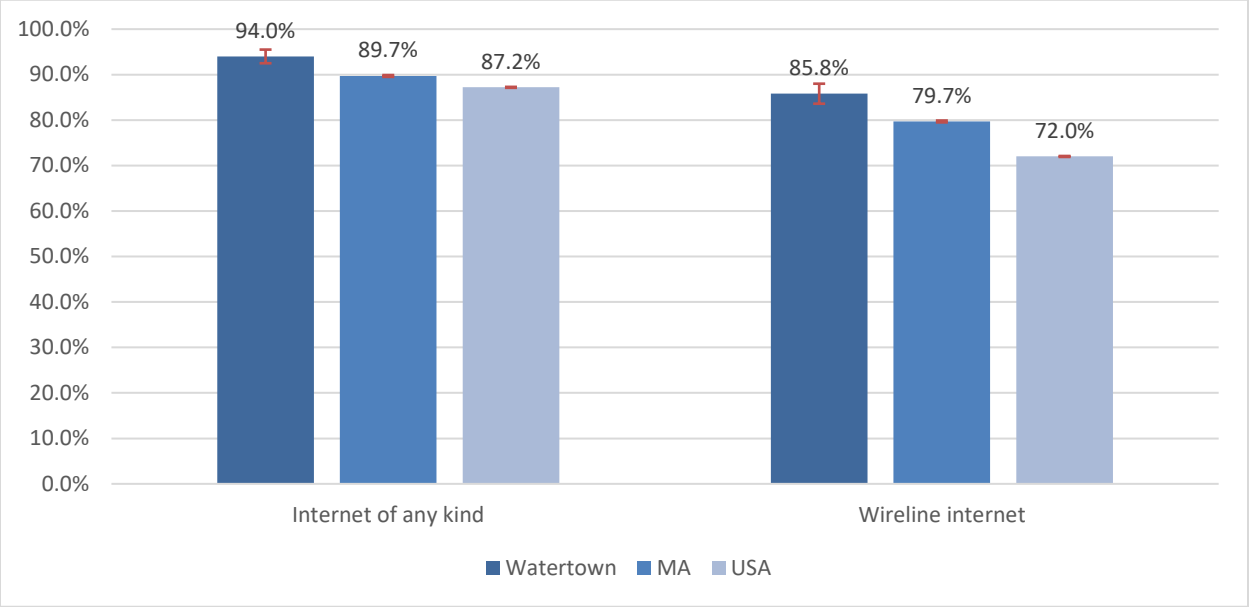
- 14.2 percent of households lack a home wireline internet subscription.
- 77.4 percent of households that lack such a subscription earn less than $75,000 annually.
- 13.3 percent of households do not own a desktop or laptop computer device.

4.5 Watertown exceeds state and national adoption rates for residential internet subscriptions, but low-income residents face gaps

According to ACS data, 94 percent of Watertown households subscribe to residential internet services. Further, most of these subscriptions are via reliable wireline technology; 85.8 percent of Watertown households receive wireline internet service. The City is ahead of both the state and nation in these respects, as shown in Figure 4.

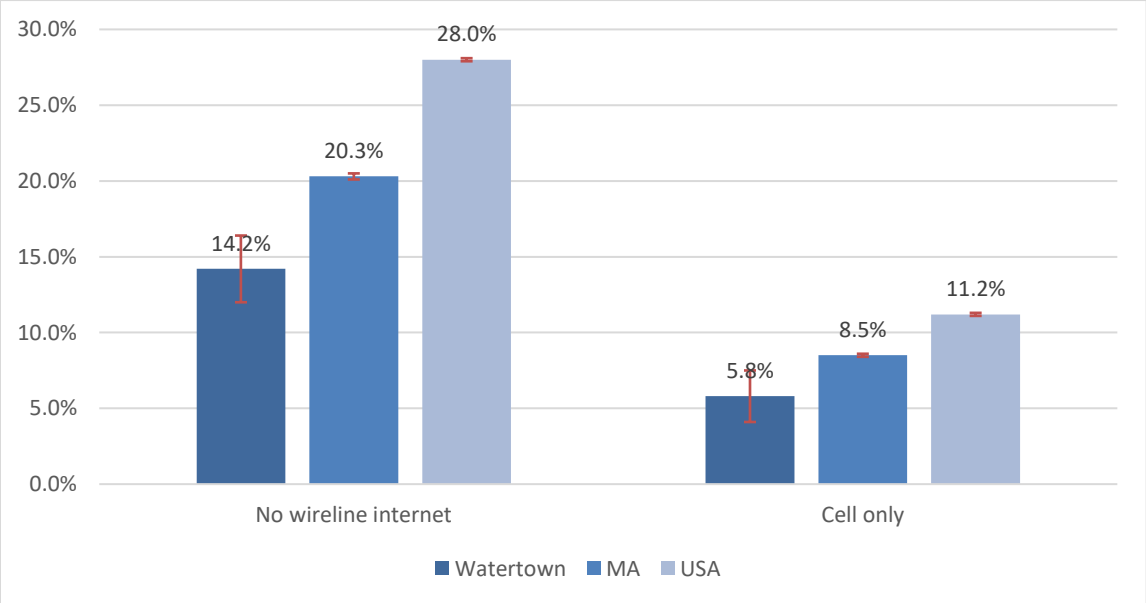
[18] The U.S. Census Bureau does not release data at the level of a city of Watertown's size for sampling periods less than five years in order to ensure useable margins of error.

Figure 4: Internet subscription rates in Watertown compared to the state and the U.S.



While internet adoption rates are relatively high in Watertown, an estimated 2,275 (or 14.2 percent of) households do not subscribe to residential wireline internet service (Figure 5). Of those households without wireline service, roughly 923 (or 5.8 percent of total households in the City) are solely using a cellular internet service from their homes. Lower income households sometimes choose to use their cellular connection and smartphone in lieu of a more robust connection. However, this may not fully enable all members of a household to participate in the digital economy, because of data caps and the potential for the service to be throttled in times of mobile network congestion.

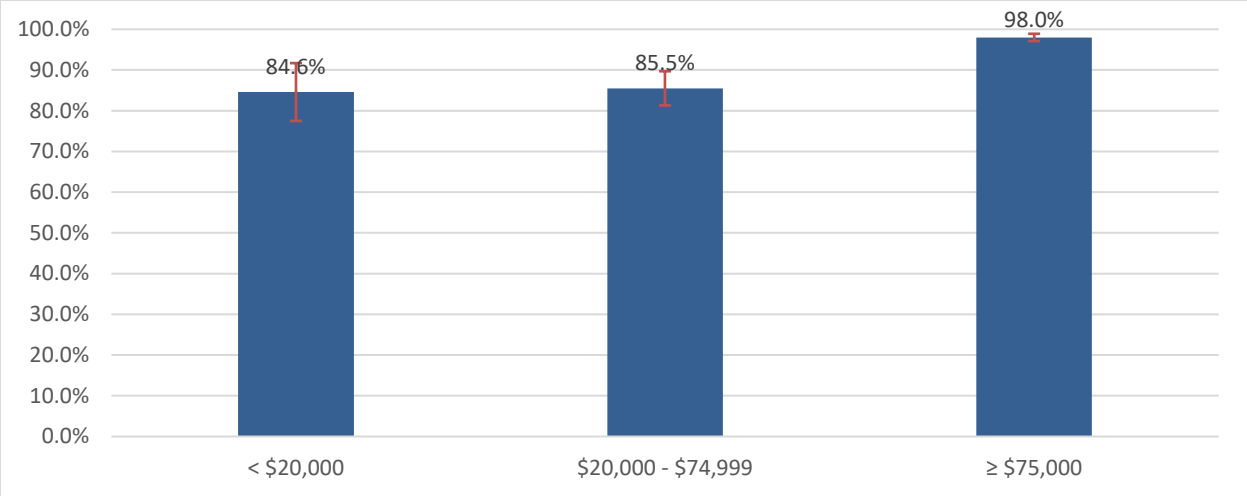
Figure 5: Watertown households with no wireline internet or only mobile subscriptions compared to the state and the U.S.



4.6 Most Watertown households that lack wireline internet access earn less than $75,000 per year

In Watertown, most of the households lacking an internet subscription are lower-income households. Whereas 98 percent of households making more than $75,000 subscribe to wireline internet services, only 85.5 percent of households making between $20,000 and $75,000, and 84.6 percent of households making less than $20,000 do so.[19] Figure 6 shows subscription rates by income bracket.

Figure 6: Wireline internet subscription rates by income level

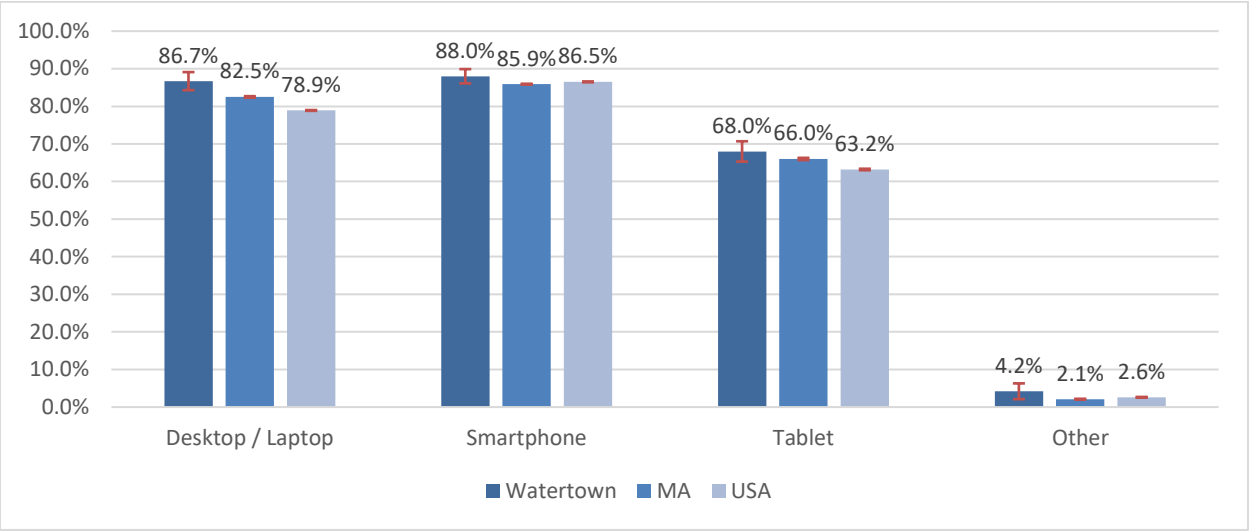


4.7 Watertown exceeds state and national device ownership rates, but 13 percent of households lack device access

ACS data show that 95 percent of households in Watertown own one or more computer device, a figure that outpaces both the state and national figures. City of Watertown residents have higher rates of ownership across all computer devices, including desktops, laptops, smartphones, and tablets, as shown in Figure 7.

[19] For both of these income brackets, some households are likely able to afford service yet choose not to purchase it because they simply are not interested. For this reason, a 100 percent subscription rate does not represent the ideal or goal rates for any given population.

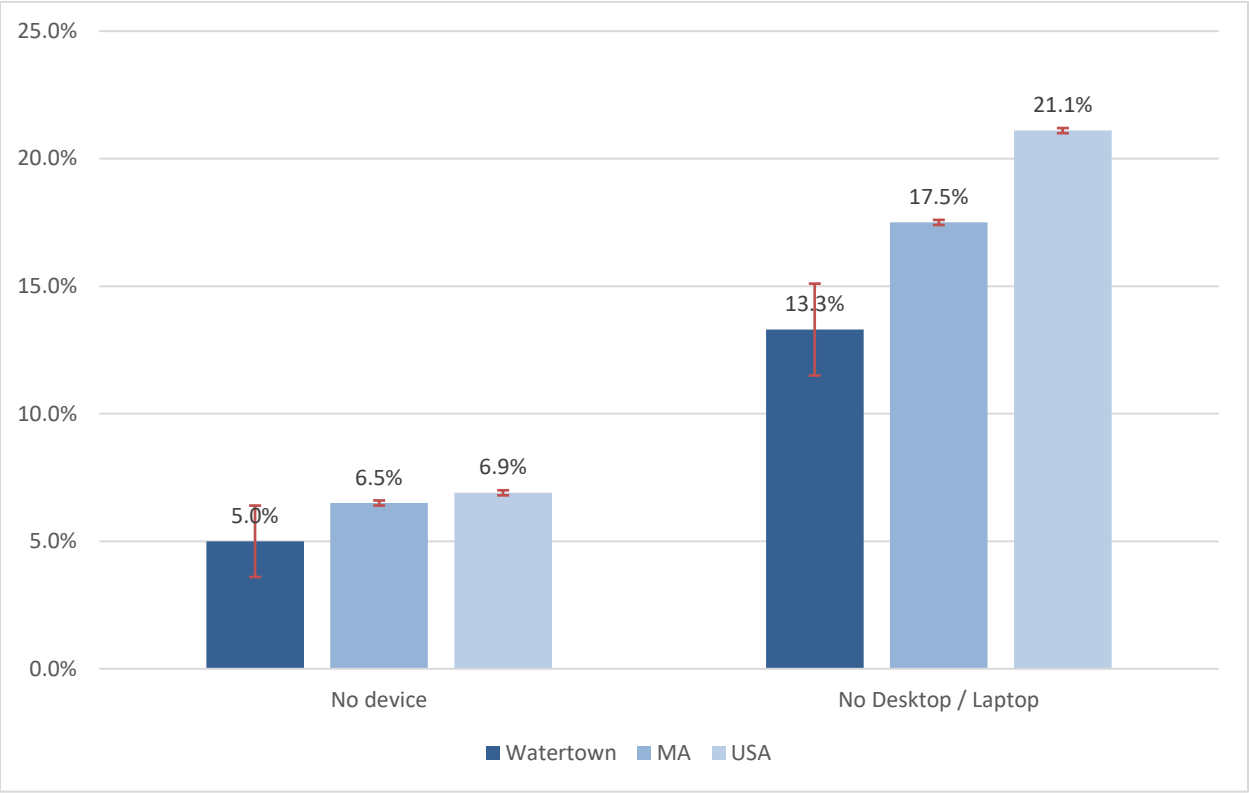
Figure 7: Device ownership rates in Watertown compared to the state and the U.S.



While only 5 percent of Watertown households lack a computer device, some households rely only on smartphones; 13.3 percent lack a desktop or laptop, the only computer devices sufficient to completely enable a household to engage in the digital economy.[20] Still, this figure compares favorably to state and national averages, as shown in Figure 8.

[20] Tablet computers are increasingly capable and frequently represent a less costly option for private purchase and for government-assisted device lending programs. However, they are still not ideal.

Figure 8: Lack of devices in Watertown compared to state and national averages



Additional device barriers may exist even after device ownership numbers are improved. For example, for households with many individuals, a single desktop or laptop will likely not deliver sufficient capacity for all members of the household to meaningfully use the internet. Additionally, many households that buy computers for the first time are likely to experience trouble in operating them and may need tech support, education, and access to repair programs.

5 Stakeholder-reported gaps and identification of successful programs

The City of Watertown and CTC convened and facilitated several stakeholder meetings to gather feedback about the digital needs and challenges in Watertown. CTC also prepared and disseminated an online questionnaire to participants in these meetings. The questionnaire was designed in part to facilitate data collection about existing digital equity programs underway, services offered, populations served, current capacity, remaining gaps, and the potential for expanding these programs. The following section represents the conclusions from formal engagements, the questionnaire, and subsequent conversations to pinpoint community digital equity needs and solutions.

The stakeholder meetings were organized around the following theme areas:

- Schools and youth
- Library
- Senior and veteran services
- Vulnerable populations
- Supporting organizations

The following sections—organized by theme and entity—identify the participants and organizations in these meetings and summarize the insights provided by each stakeholder.

The stakeholder questionnaire is shown in Appendix A. The complete package of online responses was provided to the City under separate cover. Recommendations flowing from a synthesis of stakeholder data, survey data, and other research performed for this study are provided in Section 3.

5.1 Watertown Public Schools

The City of Watertown and CTC met with and sent questionnaires to the following stakeholders in the Watertown Public Schools (WPS):

- Kate Phillipson, English Language Education (ELE)/ML Director
- George Skuse, Information Technology Manager
- Stephanie Toyias, Community Outreach Counselor
- Jason DelPorto, Assistant Principal, Watertown Middle School
- Jaime Swift, Community Outreach Counselor

In the 2022-23 academic year, Watertown Public Schools (WPS) enrolled 2,571 students in grades Pre-K through 12. Across the student body, 40.8 percent lived in households where English is not the first language spoken, 50.9 percent were considered high-need, and 36.1 percent lived with families designated as low-income.[21] These populations have difficulty affording service, acquiring and maintaining devices, and utilizing school resources due to language barriers.

[21] Massachusetts Department of Education 2022-23 Selected Populations report, https://profiles.doe.mass.edu/statereport/selectedpopulations.aspx (last visited 7/14/2023.)

Language barriers: The ability to access online communication and resources is critical to students and their parents. The need for technical support in various languages begins before the first day of school. Families require support to register students and arrange for necessary medical requirements, such as physical exams and vaccinations. Cell phones are the primary device used by many parents for whom English is a second language. Language barriers—combined with the limitations of mobile devices—complicate basic tasks, which can result in children missing the critical first months of school. School staff report a dramatic rise in the need for interpretation for back-to-school nights, parent-teacher conferences, and for family liaison interactions. For the past five years, schools have exceeded their annual budget for translation services ($26,000 annually for the past two years.) While providing translation services is a federal requirement of public schools, current grant sources may not be used for this purpose.

Students enrolled in the English Language Learner (ELL) program speak 28 languages, the most common being Spanish, Portuguese, and Armenian. To meet the increased demand for language translation, school staff have expressed the need for more effective translation solutions. A program adopted by the neighboring City of Newton awarded a contract to Lingolet to provide onsite, phone, and video translation services to all public schools. Staff estimate that an increase of $50,000 to the existing budget of $26,000 would adequately fund a similar program across Watertown Public Schools.

Devices and technical support: Watertown Schools provides sixth through twelfth graders with Chromebooks for in-school and at-home use. However, students do not necessarily have access to affordable and reliable internet service outside of school. Schools currently have an inventory of 40 to 50 AT&T hotspot devices available for loan to enable students to connect their Chromebooks to the internet at home. To conserve devices for those most in need, hotspots are usually loaned out only after poor academic performance reveals a lack of connectivity outside of school. To proactively support students from the outset, the school would like to increase the number of available hotspots by 50 (100 total) and advertise the availability of devices before problems arise. The estimated cost to double the number of hotspots available to students is $5,450.

To support its most vulnerable families, WPS proposes establishing a Welcome Center that would provide translated technical assistance to families experiencing language barriers. A bilingual registrar would include help with registering students, scheduling required immunizations and vaccinations, signing students up for physicals and health insurance, ongoing family outreach around digital literacy, and native language literacy (i.e., supporting native language at home to build biliteracy). Families in the greatest need are those from Portuguese and Spanish speaking households.

Accessibility and affordability: To combat the issue of unreliable service at home, such as hotspot connectivity not permeating brick walls or public housing units located in cellular “dead zones”, funding for free or subsidized home internet service would help alleviate connection problems experienced by

students. Partnering with ISPs or creating a publicly subsidized internet initiative could provide reliable wireline internet for all Watertown families to access technology regardless of their housing situation.

With the goal of addressing the affordability gap, MBI has partnered with the MAPC to provide procurement support, capital expense funding, and funding for the first year of operating expenses to provide free Wi-Fi internet access to residents of public and affordable housing in Massachusetts.[22] Part of the Digital Equity Partnerships program, the effort targets residents most likely to face barriers to connectivity—those experiencing housing insecurity who have access to broadband but cannot afford it.

The anticipated cost of the grant program is estimated to be $5.6 million, with plans to address roughly 2,400 housing units at program inception. The MAPC will initially lead project management and procurement for apartment Wi-Fi projects, with grant funding covering all capital expenses and the first year of operational expenses. Operational expenses for year two and beyond are expected to be assumed by local partners, including municipalities, PHAs, and/or CDCs.

5.2 Watertown Free Public Library

Library stakeholder meetings and questionnaires included:

- Jaccavrie McNeely, Digital Services Librarian
- Caitlin Browne, former Library Director

The Watertown Free Public Library (WFPL) identified seniors, English language learners, and newly arrived refugee populations as the most impacted by the lack of digital literacy skills and limited access to devices and affordable service.

Device access: The library offers both onsite desktop computers as well as devices for loan. There are currently 16 desktop computers and 13 laptops available to residents in two-hour increments on site. The device loan program allows residents to check out hotspots, laptops, or e-readers. Currently, the inventory of 20 Chromebooks is not sufficient to meet public demand, and the two-week time frame for lending is insufficient for ongoing use. The library would like to expand the device lending program at an estimated cost of $3,000 to add 10 Chromebooks with Enterprise licenses.

The library also offers a Homebound program for residents who are unable to leave their homes may have printed library materials or devices delivered. Participants are often referred by family or social services.

Digital literacy for non-English speakers: The library's Adult Reference department offers six to ten digital literacy computer classes each month focusing on job skills, basic computing, and MSOffice. In fiscal year 2023, roughly 415 persons attended classes with enrollment steadily increasing to near pre-pandemic levels. Visitors rely heavily on library staff for this training however Adult Reference desk staff

[22] Metropolitan Area Planning Council: Smart Growth and Regional Collaboration. https://www.mapc.org/our-work/expertise/digital-equity/apartment-wi-fi/ (accessed October 27, 2023).

have limited time to address patrons' needs. The most immediate barrier facing access to digital literacy classes is that many residents are English language learners and are unable to participate. The library estimates the cost for providing instructors for two classes in the target languages of Spanish and Portuguese would cost $2,000. Instructors cable of interpreting in Armenian, the third most spoken non-English language, are expected to cost slightly higher due to the level of difficulty.

Digital literacy assistance: The library's Adult Reference department fields roughly 1,000 requests per month for task-oriented online support, such as help with job or housing applications and paying bills. One-on-one instruction is particularly effective and weekly tech support sessions at the library have proved popular among vulnerable residents. However, the current level of available resources limits the individualized support and instruction staff can provide. When staffing resources permit, the library also conducts outreach programs. One such program is a partnership with the Housing Authority intended to bring digital literacy classes to residents where they live.

To fully meet the community's digital literacy needs, the library would hire a digital navigator[23] to perform the role of a technology social worker. The library estimates the cost to hire a digital navigator – including the technical needs and potential National Digital Inclusion Alliance (NDIA) consulting fees – to be $15,000 for English speakers and $20,000 to offer the program in a second language.

5.3 Senior and Veteran services

During stakeholder outreach, CTC met with:

- Lydia McCoy, Director of Senior Services at the Watertown Council on Aging
- Patrick George, Veterans Services Officer, Watertown Vet Center

Device access and tech support: Watertown's Council on Aging (COA) offers an array of services that enable seniors to get internet access for critical functions. Wi-Fi is available onsite at the COA office and individualized online support is provided for housing assistance, transportation, food stamps (SNAP program), tax preparation, telehealth, and applying for other government benefits. The COA currently has a single desktop computer available to seniors. A volunteer provides one-on-one technical assistance when available, largely on personal devices. Last year a program provided four laptops to seniors in need.

Watertown's Veterans' Services (VSO) provides similar support such as assistance with applying for specially adapted housing, accessing compensation benefits, locating medical professionals and making healthcare appointments, and pursuing legal support online.

Digital literacy training: Earlier this year, the Council on Aging partnered with Watertown Housing Authority on an application for the Enhancing Digital Literacy for Older Adults Grant[24] to provide a series

[23] The library cites the NDIA's digital navigator model as a blueprint for their purposes: "The Digital Navigator Model: Adding Digital Equity to our Social Safety Net," NDIA, https://www.digitalinclusion.org/digital-navigator-model/.
[24] "Enhancing Digital Literacy for Older Adults Grant," Commonwealth of Massachusetts, https://www.mass.gov/info-details/enhancing-digital-literacy-for-older-adults-grant (accessed October 27, 2023).

of digital literacy classes intended to acclimate seniors to technology and provide basic skills as well as a course that would provide graduates with a device of their own upon completion. Watertown was not awarded grant funding; however, the COA and Housing Authority are seeking additional opportunities to fund these initiatives.

Devices: Veterans' Services has the capacity to provide in-office technical support to meet current demand, however the VSO would benefit from adding an additional workstation to assist clients. The estimated cost to add a desktop with updated software is $1,500.

5.4 Wayside Youth and Family Support Network

Institutions serving Watertown's most vulnerable populations include the Wayside Youth and Family Support Network (Wayside), Watertown Housing Authority, and Perkins School for the Blind. CTC and the City met with the following stakeholders at Wayside:

- Maysa Ramos, Social Service Resource Specialist Clinician, Wayside Youth and Family Support Network
- Sophia Suarez-Friedman, Social Service Resource Specialist Clinician, Wayside Youth and Family Support Network

Wayside is the primary provider of social services to Watertown residents. It is a community-focused nonprofit operating a range of support programs across the commonwealth for young adults and adolescents experiencing emotional and physical distress. Programs include residential and transitional housing, hospitalization, trauma intervention, therapy, counseling, and community services. 89 percent of those served by Wayside programs are age 21 or below.[25]

Lack of devices: Wayside clients suffer from both tech reluctance and lack of affordable devices. Only half of Wayside clients express an interest in owning a mobile phone, and far fewer own desktops or laptops. However, the interactive nature of both requesting and providing social services necessitates digital access. Wayside staff are often asked to perform goal-oriented online tasks for clients, including setting up email accounts and applying for benefits.

Digital literacy programs: Many of Wayside's clients feel overwhelmed by technology, an obstacle compounded by language barriers. Low literacy rates have also posed a barrier for this population. While one-on-one instruction has been identified as an effective tool for combatting hesitancy around device adoption and use, Wayside is not prepared to expand the Social Services Resource Specialist Program (SSRS) at this time and will continue to refer its clients to the library and other Watertown service providers.

[25] "2020 Annual Report," Wayside Youth and Family Support Network. https://indd.adobe.com/view/7fac08f7-26d9-48e1-b996-ab8476f1be17 (accessed July 17, 2023).

5.5 Watertown Housing Authority

At the Watertown Housing Authority (WHA), CTC and the City engaged with:

- Olivia Fields, LCSW and Director of Resident Services

Despite the City's moderately high median income, over one-third of households in Watertown are considered "cost-burdened", where housing expenses constitute more than 30 percent of income.[26] To best serve its diverse and vulnerable population, the housing authority has established key partnerships with the library, the Council on Aging, social service resource specialists, public schools, and WCA-TV.

Devices and tech support: In summer 2023, the WHA introduced a new onsite Learning Center offering 11 desktop computers for use by residents of WHA over the age of 14. WHA has expressed interest in expanding access to devices through a lending program that would be augmented by a part-time technical support specialist, with training on this topic – possibly shared with another agency – who would be available to educate residents and provide supervised computer time. The estimated cost for a shared part-time position would be $35,000 for salary and $7,250 for 15 Chrome books and a technology cart. The agency has an ongoing partnership with Wayside which facilitates access to Tracfones, WHA would propose sharing this program with the Wayside SSRS program to provide access to the larger community.

The WHA also expressed a need to create avenues for device ownership. Ideally, WHA would be able to purchase up to 15 Chromebooks and be able to partner with Tech Goes Home or another agency to provide education classes on using basic internet use, utilizing Wi-Fi, printing, and navigating the web safely. Upon successful completion of this course, students would then be able to take ownership of a device for personal use. The estimated cost of devices for this program is $5,000.[27] Watertown's housing authority has explored a collaboration with Tech Goes Home in the past; however, WHA did not have sufficient staff at the time to implement the program. The agency now has a part-time Resident Services Coordinator (RSC) that could potentially be trained to administer the course, depending on the requirements of Tech Goes Home's program.

Affordability of devices and service: While community device sharing programs exist, devices and internet service are cost prohibitive for many served by the Housing Authority. While nearly all public housing residents qualify for the federal ACP subsidy to defray service costs, many struggle with the application requirements due to status, age, comprehension of program and other barriers. The Housing Authority Resident Services department assists residents with applying for the ACP and works with Astound (formerly RCN) which provides qualified applicants with a free month of service to assist in getting them connected.

[26] "Basic Housing Needs Assessment for Watertown, MA," Housing Watertown MA, http://www.housing.ma/watertown/report (accessed July 21, 2023).
[27] Estimated cost of Chromebooks are $300 each and the cost of a laptop cart is $500.

Digital literacy: Transportation and language capacities are the most common obstacles to digital literacy. Housing residents in Watertown require support in Spanish, Portuguese, Urdu, Farsi, Armenian, Russian, and French. The Housing Authority has access to written, in-person and telephonic as-needed translation services. However, WHA does not have resources to expand its translation services, to provide one-on-one instruction technical support, and digital literacy programs.

In 2023, the library partnered with the Housing Authority to deliver six on-site basic digital literacy courses for family and older adult residents. Skills covered included how to safely navigate the internet, check email, and device operation. To date, the program has benefited approximately 50 adult residents. However, while many older adults served by the Housing Authority are receptive to digital education, they are hesitant to learn new skills and do not have the resources to make an ongoing commitment to digital literacy. Despite interest in attending in-person classes at the library, the challenges of traveling to offsite classes also inhibit housing authority residents whose access to transportation is unreliable.

5.6 Perkins School for the Blind

During stakeholder outreach, CTC and the City engaged with:

- Kim Charlson, Executive Director of the Perkins Braille & Talking Book Library, Perkins School for the Blind
- Bashar Al-Nakhala, Chief Technology Officer, Perkins School for the Blind

The Perkins School for the Blind (Perkins) is a national leader in providing resources for individuals who are blind or experience low vision or deaf blindness in addition to other disabilities. Perkins manages the FCC's National Deaf-Blind Equipment Distribution Program which delivers devices and training to low-income individuals who are impeded by sight and hearing loss. The Perkins Access program provides technical assistance and consultation to companies, educational institutions, government, and nonprofits to improve the accessibility of websites and software for people with a variety of disabilities.

Devices and tech support: Seniors, especially those with vision loss or impairment, suffer from a lack of digital resources. Perkins Braille & Talking Book Library serves over 200 Watertown residents with disabilities through its statewide Technology for Seniors program. The program provides seniors experiencing vision loss with home-based instruction to get them connected to the internet and teach them how to download braille and audio books to play on the equipment the school loans to patrons. The program enables them to manage their own reading needs and download their own content independently, rather than having to wait for talking books or braille materials to be sent to them through the mail. For the pilot program, Perkins purchased third-party devices to loan to borrowers and covered costs for having staff costs for an assistive technology trainer to work with the participants of this program. To sustain the program for the next two fiscal years, Perkins seeks an estimated $100,000 to fund accessible hardware and professionals trained in the use of assistive technology.

5.7 Watertown Boys & Girls Club

The Boys & Girls Club (BGC) serves nearly 1,000 Watertown youth each year ages 7-18 through a daily after-school drop-in program, athletic and swim programs, summer camps, and school vacation programs. In 2024, the center will expand its service offerings with a licensed childcare center, accommodating up to 80 children ages K-3rd grade.[28] With the help of a grant by Mass Alliance, the center receives upgraded internet service from Comcast at no charge.

Devices and tech support: Youth registered in after-school programs have access to eight on-site MacBooks for learning-based programs and activities. While the devices meet current demand, they are rapidly aging and need replacing. Once the new licensed after school program begins in late 2024 or early 2025, the Boys & Girls Club anticipates the need to increase the devices available to 14 units and would like to switch to lower cost Chromebooks that would be suitable for basic computing. The cost of the Chromebooks is estimated at $350 each for a total of $4,900. In addition, the annual cost to maintain software subscriptions for the new suite of laptops is estimated at $2,500.

BGC's internet needs are currently satisfied by Comcast through an agreement facilitated by Mass Alliance wherein Comcast is prominently promoted throughout the building in exchange for a choice of basic web service at no cost to each club or an upgrade of one level of service above current speed at no additional cost. For technical support, BGC contracts with a 3rd party vendor to provide IT support through a bulk purchase of time that is paid for up front at a reduced hourly rate and is spent down over time as support is required. The arrangement currently meets all the organization's tech support needs.

5.8 WCA-TV and Watertown Business Coalition

The City and CTC met with representatives from WCA-TV and the Watertown Business Coalition. While the Watertown Business Coalition do not currently or plan to offer digital equity programs, they were instrumental in helping identify vulnerable populations in the hospitality and construction industries and promoting the residential survey through their channels.

CTC met with WCA-TV to discuss promotion of the residential survey and digital equity plans. CTC met with:

- Andrea Santopietro, Executive Director

WCA-TV expressed particular interest in creating more accessible and inclusive internet content. While it already provides closed captioning across platforms, WCA-TV would like to offer additional support and outreach to the City's aging population and non-English speaking residents. WCA-TV wishes to provide captioning in multiple languages, as well as training geared towards those who struggle with basic technological skills. The cost for hiring an additional staff member dedicated to improving digital

[28] "Watertown Boys & Girls Club Opening Childcare Center, Launching Fundraising Campaign," Watertown News, August 15, 2023, https://www.watertownmanews.com/2023/08/15/watertown-boys-girls-club-opening-childcare-center-launching-fundraising-campaign/ (accessed October 26, 2023).

access among seniors and minority groups is estimated to be $8,000 per year. Supplies needed to provide this access would include additional workstations for about $2,100 per workstation.

5.9 MassHire Metro North Workforce Investment Board

The MassHire Metro North Workforce Board (MNWB) is a nonprofit organization that serves as the Workforce Development Board (WDB) for the Metro North region of Massachusetts.[29] MNWB serves twenty cities and towns across Metro North Massachusetts, including Watertown.

Digital navigators: In December 2023, MBI awarded the Metro North Workforce Investment Board $4.1 million to increase its digital equity initiatives through the Digital Justice, Equity, Diversity, and Inclusion (JEDI) Consortium.[30] With the support through this grant, the Consortium will hire 32 digital navigators for employment and career counseling, digital literacy training and classes, distribution of refurbished devices, IT services, and community collaboration with other organizations focused on closing the digital divide. The digital navigators will be working from sixteen different organizations throughout northeast Massachusetts, and will service 39 cities and towns under the MassHire umbrella.

5.10 Public meeting

On June 27, 2023, CTC and the City of Watertown hosted a "Public Broadband and Digital Equity" information session and opportunity for public comment. This meeting was carried on WCA-TV and promoted on the City of Watertown and WCA-TV websites and by stakeholders. The public session presentation consisted of a digital equity overview, a project overview which included key findings from data gathered during the initial research process, an overview of the broadband funding landscape, a brief history of broadband, and an opportunity for public comment. Two members of the public attended, including the superintendent of schools who provided information similar to what arose in the stakeholder meetings.

[29] "About The Masshire Metro North Workforce Board", MassHire Metro North Workforce Board, https://masshiremetronorth.org/about/.

[30] "Healey-Driscoll Administration Awards $20 Million to Boost Digital Equity. Five State-Funded Projects Aim to Grow Access to Training, Devices, and Digital Education", MBI, https://broadband.masstech.org/news/healey-driscoll-administration-awards-20-million-boost-digital-equity.

6 MBI residential survey analysis

This report is based on data collected from Watertown residents who responded to a survey instrument created by the Massachusetts Broadband Institute (MBI) and posted online. PDFs of paper copies in nine languages were also made available to residents of the City. The City of Watertown promoted the online instrument through its Flashvote platform. Both the online and PDF versions were also shared by other means including posting on the City's website and sharing at the Watertown Public Library, and by word of mouth. More broadly, the survey was made available to anyone who wished to fill it out across the state; at the time this report was written, statewide answers were being analyzed and reported separately as part of MBI's State Digital Equity Plan.

The results presented in this section are based on analysis of information provided in the survey by 302 residents of Watertown. Unless otherwise indicated, the percentages reported are based on valid responses from those who provided an answer and do not reflect individuals who said "don't know" or otherwise did not supply an answer because the question did not apply to them. Key results are noted where appropriate.

The survey sample was self-selected and is not necessarily representative of the larger population. Because lower-income residents were underrepresented, the report separately highlights answers from respondents reporting households earning less than $60,000. This threshold was used because in the MBI survey, the highest income tranche respondents were able to describe was "$60,000 or above."

This report focuses on data collected that is unambiguous with regard to meaning or accuracy, relevant to the topic of digital equity, and provides insights that are potentially actionable. As such, not all information from this survey was included. For example, the datapoint that only 41 percent of surveyed residents use mobile data plans was discarded because it seems to reflect respondent confusion due to how the question was phrased. (Nationwide, 85 percent or more adults own smartphones, and typically these are used with data plans.)

The full survey instrument is posted in Appendix B. The full dataset was provided to the City of Watertown.

6.1 Residential internet service

Respondents were asked about internet connection types and providers. This information provides valuable insight into residents' need for various internet and related communications services.

6.1.1 Internet access

Though most Watertown respondents report having either a home internet or mobile subscription, for a total of 97 percent, only 86 percent said they have wireline internet service in the home, leaving 14 percent not subscribing. Respondents with an annual household income below $60,000 (83 percent) and those with a less than four-year college level of education (74 percent) are less likely to have a home

broadband subscription. Table 1 highlights the saturation of home internet subscriptions by key demographic groups.

Table 9: Home internet subscriptions by key demographics

	Percent with a home internet subscription	*Count*
TOTAL	**86%**	***302***
Respondent Age		
Less than 45	92%	*75*
45 to 59	89%	*56*
60 or older	87%	*122*
Income		
Less than $60,000	83%	*53*
$60,000 or more	93%	*155*
Education		
Less than a 4-year degree	74%	*27*
4-year college/university/bachelor's degree	91%	*75*
Postgraduate or professional degree	90%	*151*
Race/Ethnicity		
White, non-Hispanic	89%	*207*
Racial/ethnic minority	86%	*22*
Household Size		
One HH member	85%	*60*
Two HH members	91%	*116*
Three + HH members	89%	*76*
Children in Household		
No children in HH	89%	*198*
Children in HH	87%	*54*
Gender Identity		
Man	94%	*81*
Woman	86%	*155*
Other gender identity	86%	*7*
Other demographics		
Identify as person with disability	91%	*43*
Member of LGBTQIA+ community	89%	*36*
Serve on active duty in US Armed Forces	100%	*6*
Live in affordable housing	77%	*13*

6.1.2 Questions for those with home internet service

Respondents subscribing to home internet service were asked a series of questions about their service, including provider used and price paid.

6.1.2.1 Home internet service provider

The leading providers used by households with wireline internet service are RCN/Astound Broadband (47 percent) and Comcast/Xfinity (44 percent), with 5 percent using Verizon. (CTC combined answers in cases where the survey instrument listed the same provider twice, but under different brand or company names.)

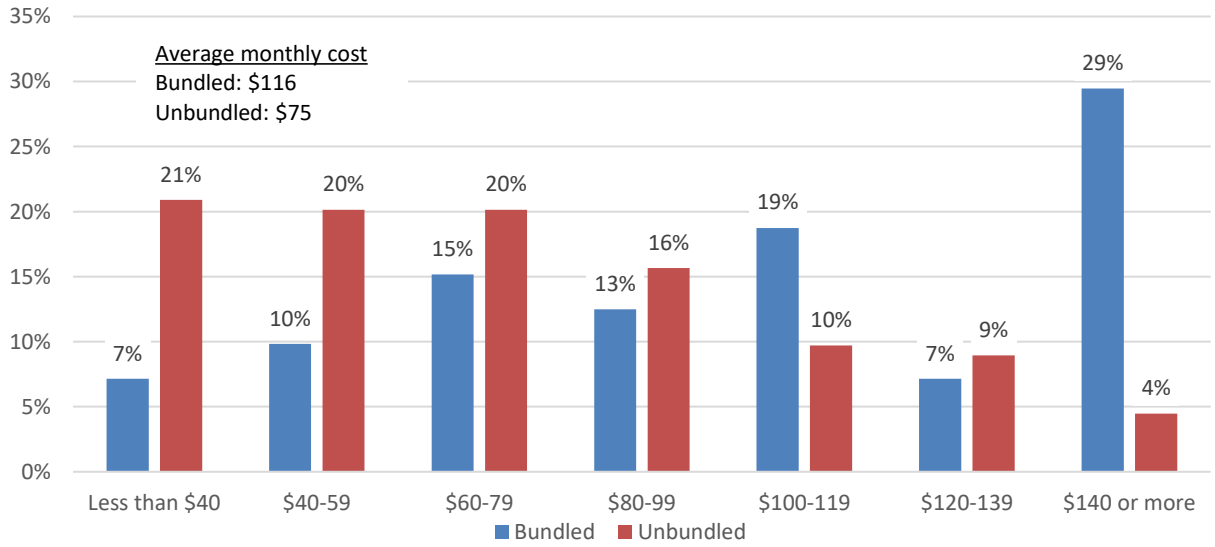
6.1.2.2 Quality and suitability of home internet service

Most internet subscribers (85 percent) said their service is good enough to meet their household's needs, but 14 percent said it is not good enough and 1 percent said they do not know. This was fairly consistent across home internet providers.

6.1.2.3 Internet service cost

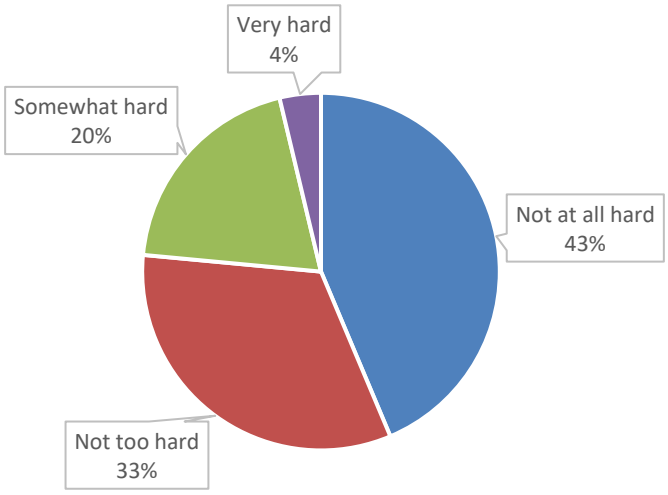
Respondents were asked to give the cost of their home internet service, as well as to indicate whether or not they bundle internet with TV and/or phone service. Overall, 50 percent of subscribers bundle their internet service. Respondents pay an average of $116 per month for bundled internet service and an average of $75 per month for unbundled internet service (see Figure 9). More than three-fourths of those with internet-only service pay less than $100 per month, compared with 45 percent of those with bundled service.

Figure 9: Monthly price for internet service



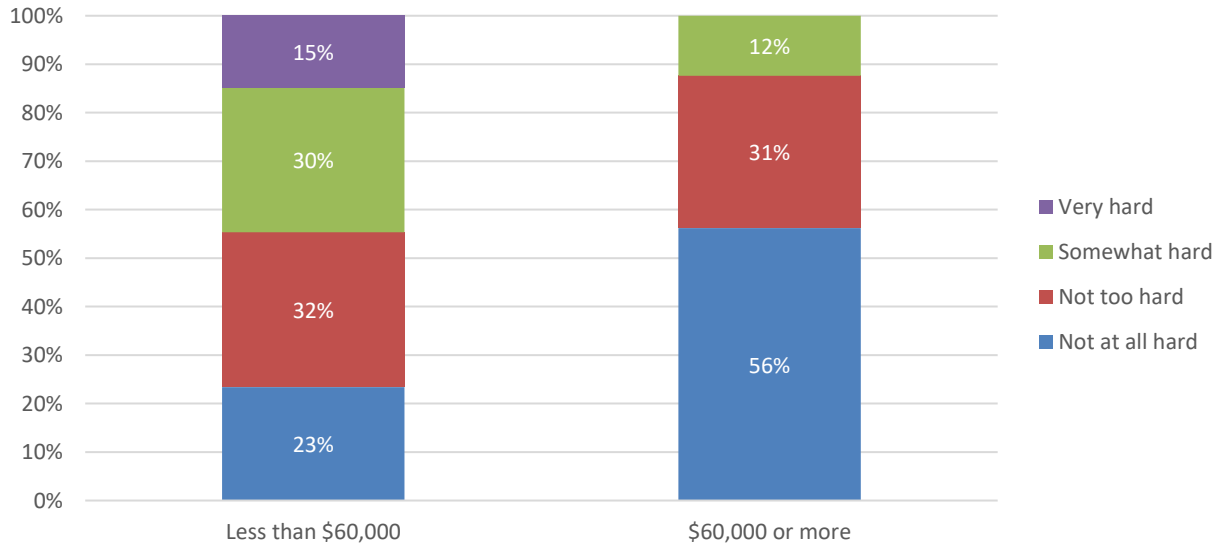
Respondents were also asked how hard it is to pay their internet bill. Most subscribers said it is not at all hard (43 percent) or not too hard (23 percent), as illustrated in Figure 10. However, approximately one-fourth of respondents said it is somewhat hard (20 percent) or very hard (four percent) to pay their internet bill.

Figure 10: How hard it is to pay internet bill



As may be expected, respondents in lower income households were more likely than those in higher income households to say it is somewhat or very hard to pay their internet bill (see Figure 11). Specifically, 45 percent of those earning less than $60,000 per year said paying their bill was "somewhat hard" or "very hard." This data contributes to our finding that affordability is a significant concern for lower-income residents of Watertown.

Figure 11: How hard it is to pay internet bill by household income



6.1.3 Questions for those without any home internet service—subscription or smartphone

Respondents without internet services were asked to indicate the various reasons for this. The survey asked this question only of the very small number of people who lack any kind service (neither a home subscription nor a smartphone), not the larger number who, while they might have a smartphone, do

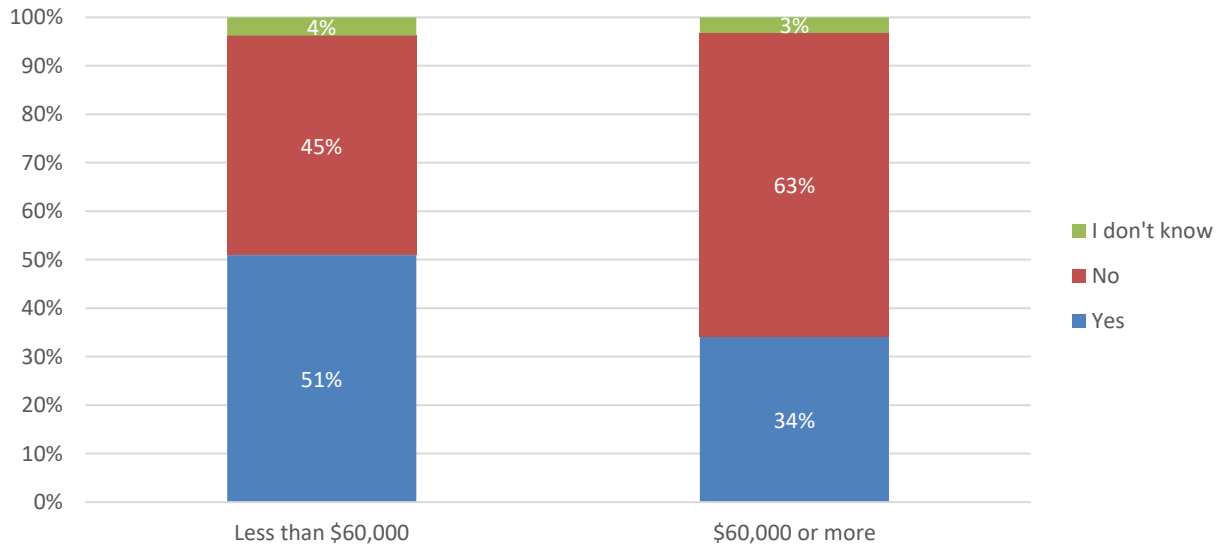
not have home internet subscriptions specifically. As such, this report will use American Community Survey data on this point.

Given that only nine people who responded in the MBI survey lack either a home subscription or mobile subscription, the sample is too small to analyze. Six of the nine cited the high expense as the barrier. Five out of nine respondents without mobile or home internet service go to a library or community center to use the internet. Other locations used include a workplace (three respondents), a friend's or family member's home (three respondents), and public transit (two respondents).

6.1.4 Internet subsidy programs

All respondents were asked if they had heard of the Affordable Connectivity Program (ACP), which is available to eligible low-income households. As shown in Figure 12, among respondents with an annual household income of less than $60,000—the population that might be in a position to take advantage of the ACP—only about one-half are aware of this program. This datapoint informs our recommendation that enrollment support efforts be expanded in Watertown.

Figure 12: Whether respondent is aware of the Affordable Connectivity Program by household income

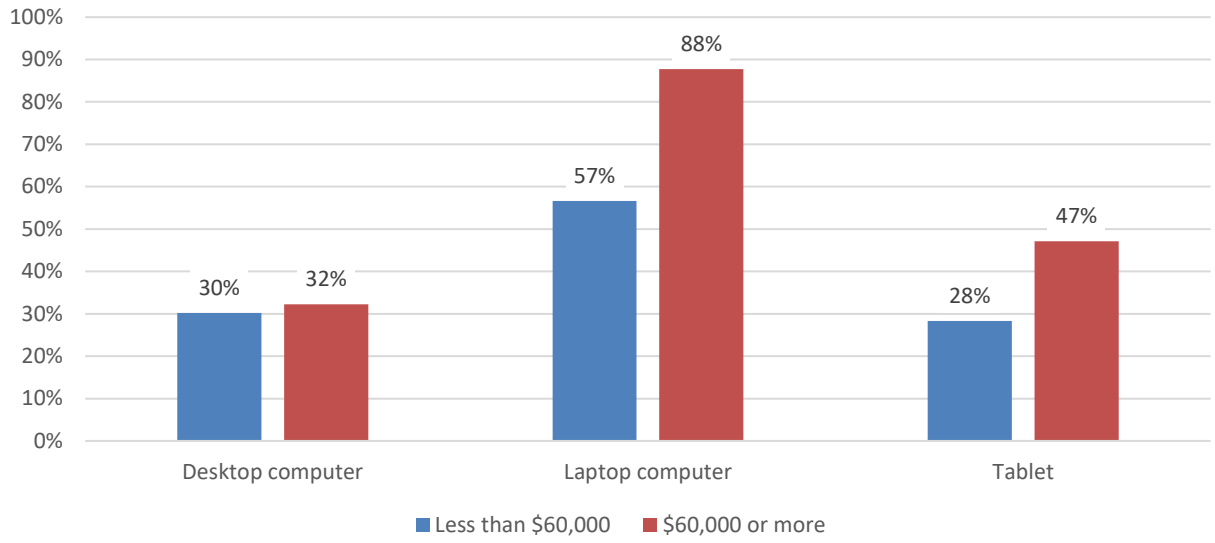


6.1.5 Computing devices used in household

Respondents were asked a series of questions about access to computing devices and types of devices used. Most respondents (96 percent) said everyone in their household has access to the computing devices they need to meet their everyday needs for internet use. However, those with an annual household income under $60,000 are less likely than those in higher income households to use a desktop, laptop, or tablet computer to connect to the internet (see Figure 13).

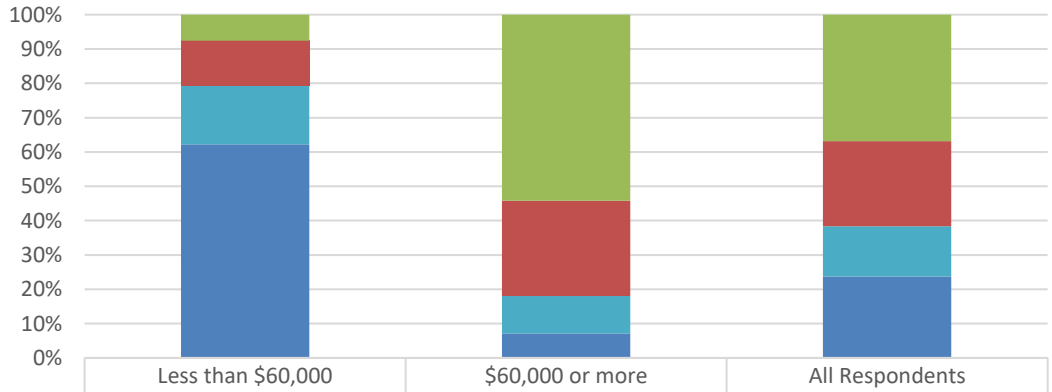
This informs our recommendation that device access programs for low-income residents of Watertown be expanded.

Figure 13: Devices used most of the time to connect to the internet by household income



As shown in Figure 14, many respondents would be able to pay more than $1,000 (37 percent) or $500 to $1,000 (25 percent) for a laptop or desktop computer. Another one-fourth of respondents could pay only $250 or less for a computer. More than one-half (54 percent) of those earning $60,000 or more per year could pay $1,000 or more for a computer, compared with eight percent of those earning under $60,000 per year. Again, this informs our recommendation that device access programs for low-income residents of Watertown be expanded.

Figure 14: Amount able to pay for laptop or desktop computer

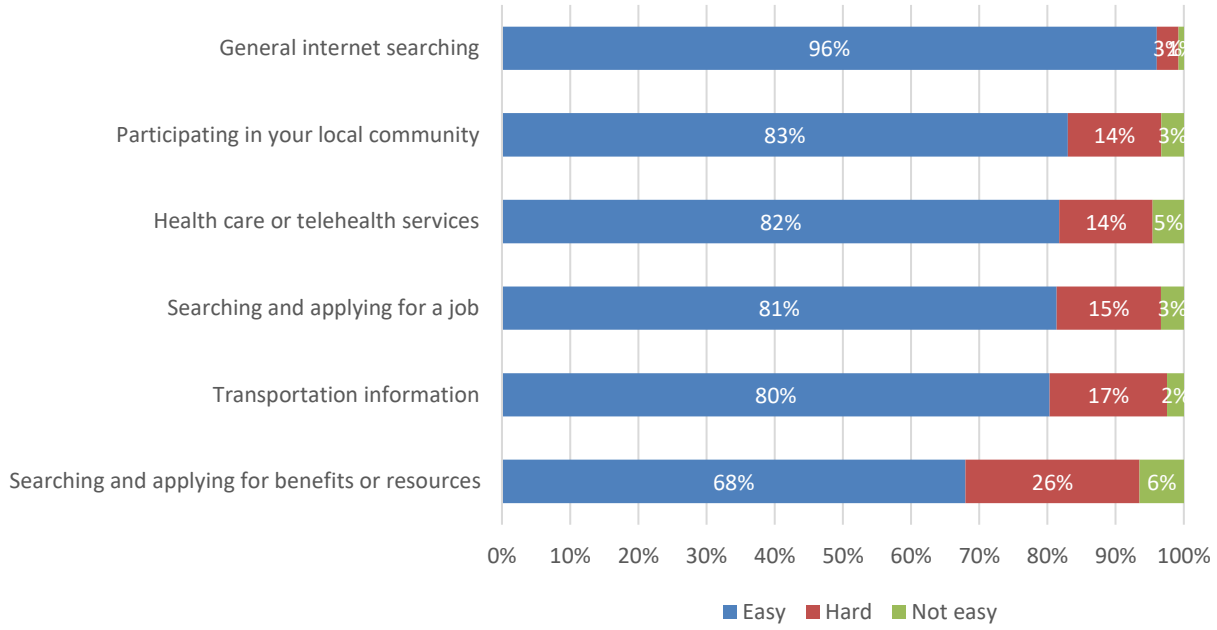


	Less than $60,000	$60,000 or more	All Respondents
More than $1,000	8%	54%	37%
$500-1000	13%	28%	25%
$250-500	17%	11%	15%
$0-250	62%	7%	24%

6.2 Digital skills

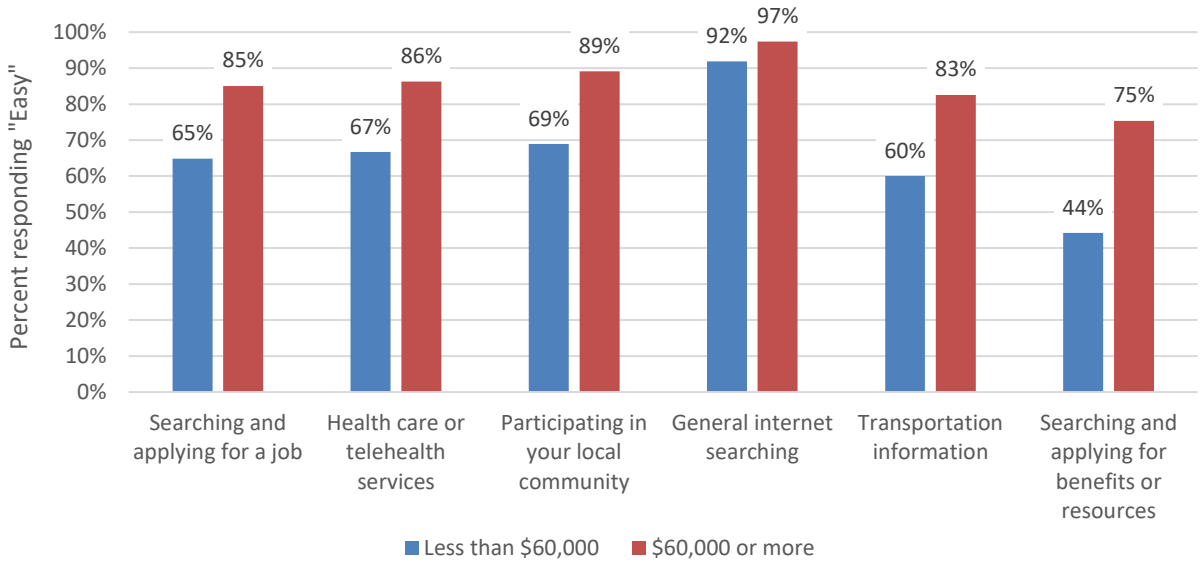
Respondents were asked a series of questions on how skilled they are using the internet in general and for specific activities. This information provides valuable insight into where there may be gaps in abilities and opportunities to educate residents. Almost all (96 percent) respondents said using the internet for general searching is easy, as shown in Figure 15. Approximately eight in 10 respondents said it is easy to use the internet for participating in their local community (83 percent), healthcare or telehealth services (82 percent), searching and applying for a job (81 percent), and transportation information (80 percent). Approximately two-thirds (68 percent) of respondents said it is easy to use the internet for searching and applying for benefits or resources.

Figure 15: Difficulty in using the internet for various tasks



However, as shown in Figure 16, respondents with a household income of less than $60,000 were less likely than those in higher-income households to say using the internet for various tasks is easy, demonstrating that lower-income residents are most in need of skills programs. This informs our recommendation that skills programs for low-income residents of Watertown be expanded.

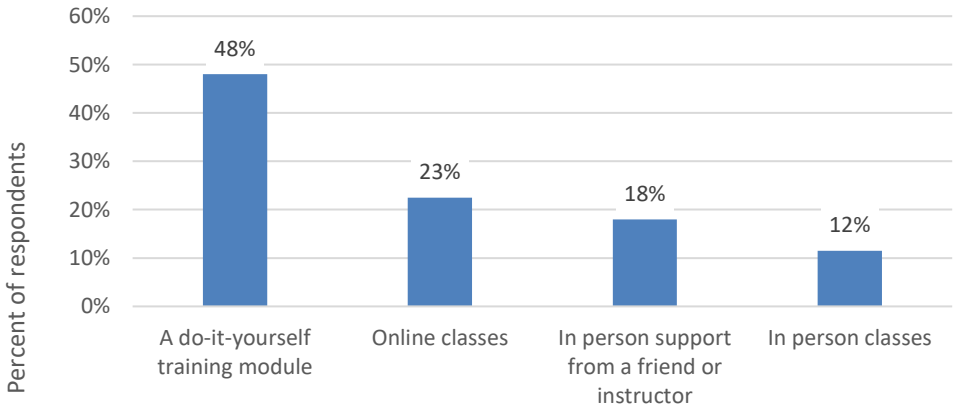
Figure 16: Ease in using the internet for various tasks by household income



Two-thirds of respondents were able to indicate the type of digital skills support they would be most interested in. Among this segment of respondents, nearly one-half said they would be most interested in a do-it-yourself training module (see Figure 17). Another 23 percent would be most interested in online classes.

The question did not provide respondents with the opportunity to say they were not interested in taking any kind of class. In other jurisdictions, CTC has found that significant numbers of people, even those lacking skills, are not interested in attending classes. As such, these results should not be taken to mean that Watertown needs to expand skills-training programs at the levels indicated here.

Figure 17: Digital skills support most interested in

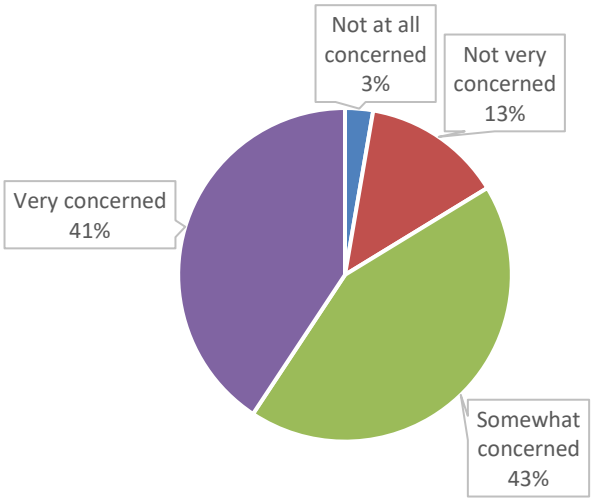


6.3 Internet safety

Watertown residents across the income and other demographic categories have significant concerns about online safety and privacy. Respondents were asked a series of questions pertaining to individual

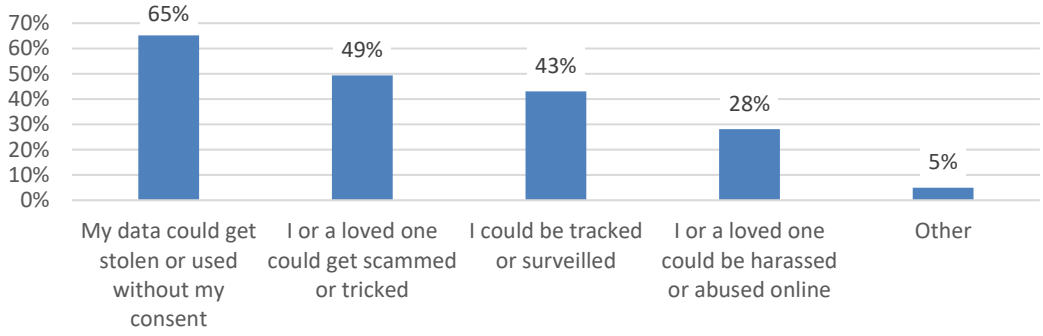
awareness of, and the use of, measures to secure online privacy and internet safety. Most respondents are either somewhat concerned (43 percent) or very concerned (41 percent) about online safety, as shown in Figure 18.

Figure 18: Concern about online safety



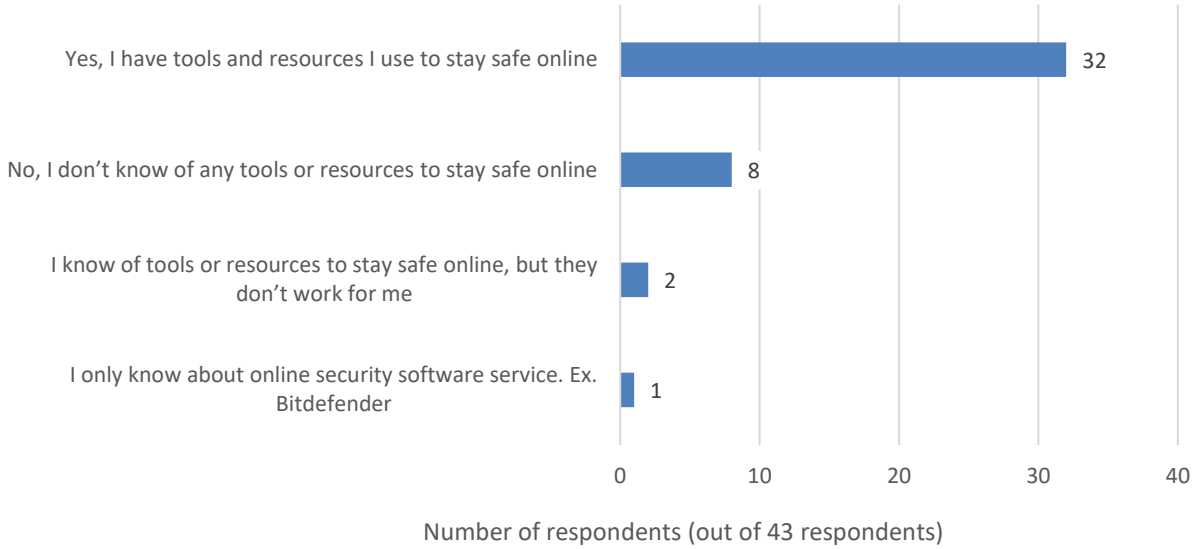
Respondents are most concerned about their data being stolen or used without their consent, cited by 65 percent (see Figure 19). Nearly one-half of respondents (49 percent) are most concerned they or a loved one could get scammed or tricked, and 43 percent are most concerned they could be tracked or surveilled. They are somewhat less likely to be most concerned about being harassed or abused online (28 percent).

Figure 19: Largest concerns about internet safety



Thirty-two of 43 respondents who were asked said they have the tools and resources they need to stay safe online (see Figure 20). (This question was asked only of those who reported they were not at all concerned, or not very concerned, about internet safety.) Another eight respondents said they do not know of any tools or resources to stay safe online.

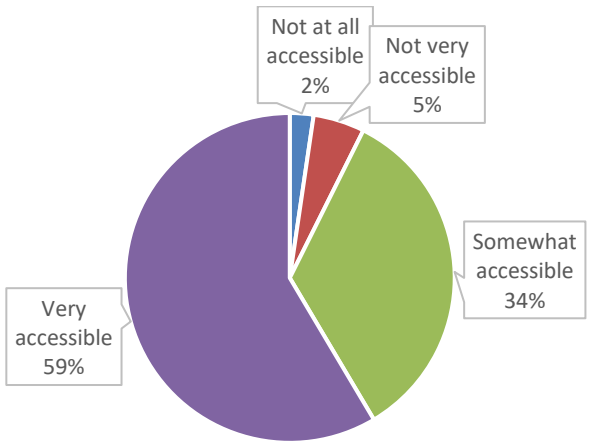
Figure 20: Awareness of tools or resources respondents can use to stay safe online



6.4 Online accessibility and inclusivity

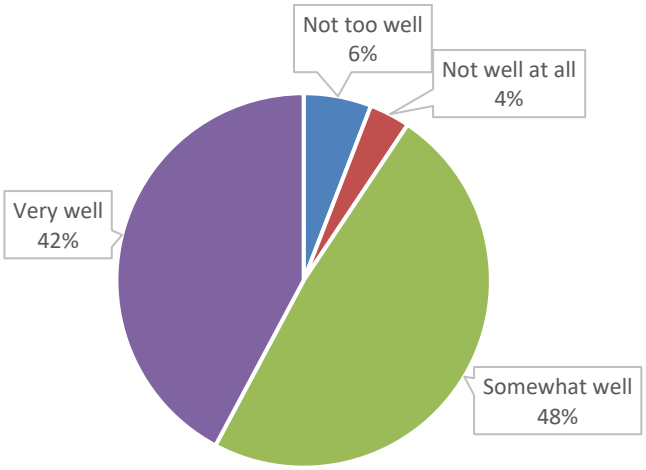
Respondents were asked questions related to online accessibility and inclusivity of public resources and services. Most respondents said online government services are somewhat accessible (34 percent) or very accessible (59 percent), as shown in Figure 21.

Figure 21: Accessibility of online government services



Nine in 10 respondents said online government services have worked somewhat well (48 percent) or very well (42 percent), as shown in Figure 22. Online government services are assessed highly across demographic groups.

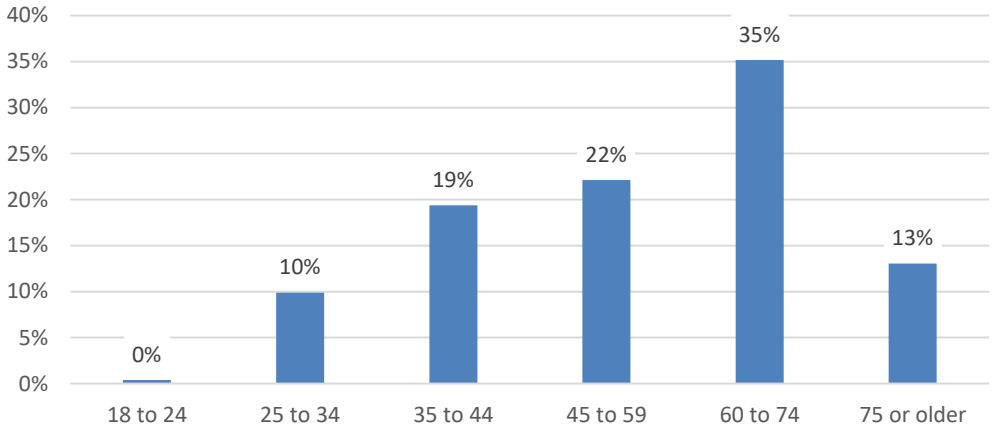
Figure 22: How well online government services have worked



6.5 Respondent information

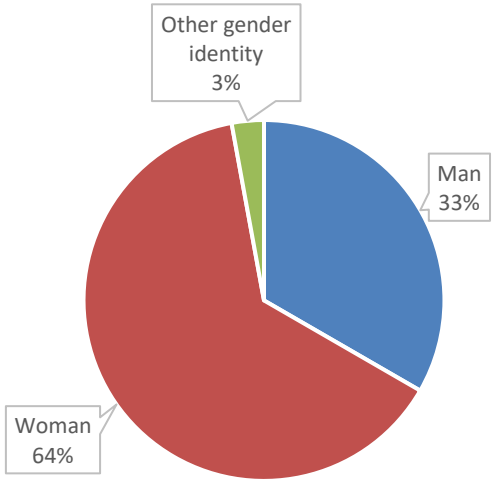
Basic demographic information was gathered from survey respondents and is summarized in this section. Several comparisons of respondent demographic information and other survey questions were provided previously in this report. As shown in Figure 23, 29 percent of respondents are under age 45, 22 percent are ages 45 to 59 years, and 48 percent are ages 60 or older.

Figure 23: Age of respondents



Sixty-four percent of respondents identify as a woman, and 33 percent identify as a man (see Figure 24). Three percent of respondents have another gender identity, including non-binary (two percent) and gender fluid (one percent).

Figure 24: Gender identity



Respondents were asked to indicate the number of adults and children in their household. Nearly one-half of households have two members, and 30 percent have three or more members. Just 24 percent of respondents live alone (see Figure 25). Twenty-one percent of respondents have children living in the household (see Figure 26).

Figure 25: Total household size

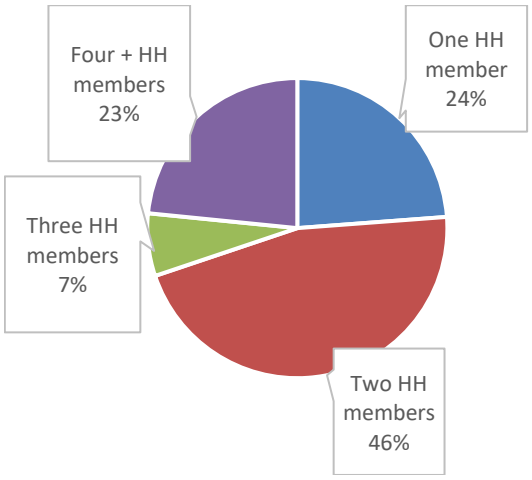
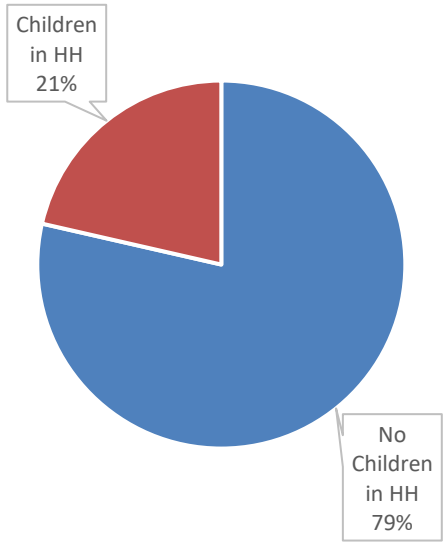
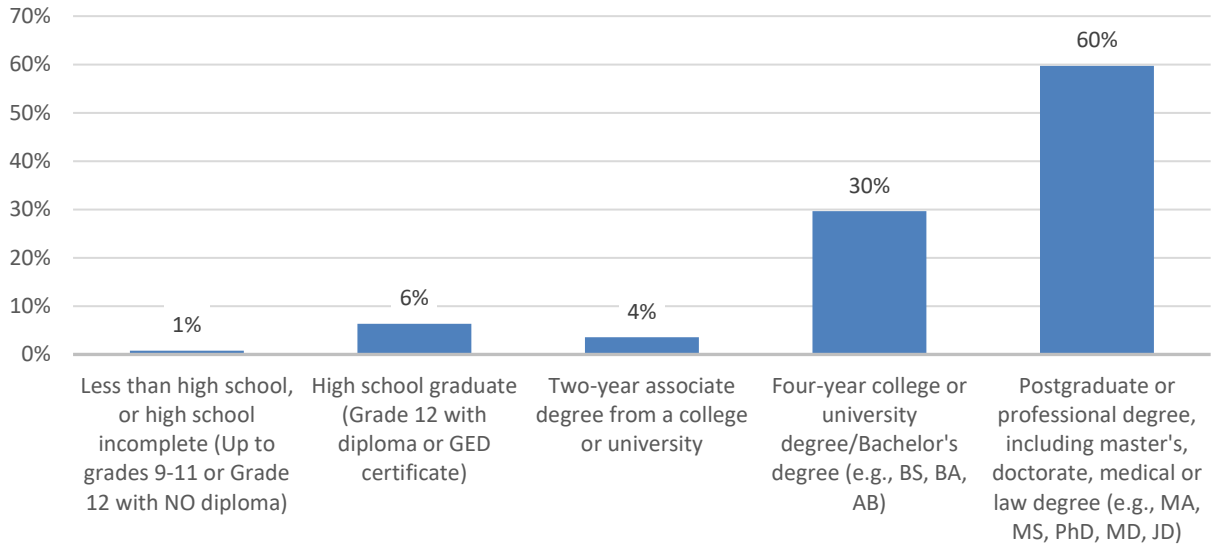


Figure 26: Number of children in household



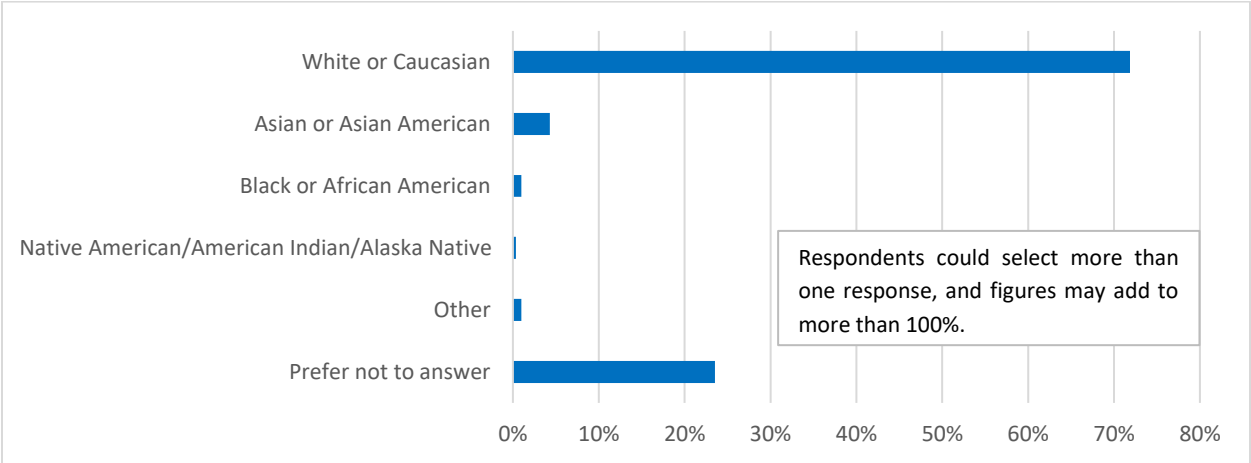
The respondents' highest level of education attained is summarized in Figure 27. Seven percent of respondents have a high school education or less, and four percent have a two-year associate degree. Another three in 10 respondents have a four-year college degree, and six in 10 have a postgraduate or professional degree.

Figure 27: Education of respondent



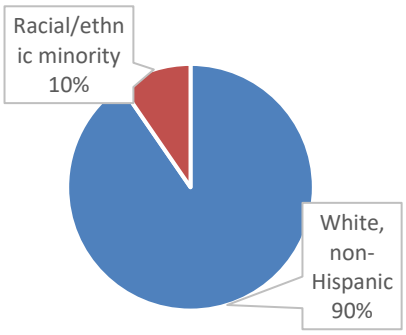
Respondents were asked to indicate what categories best describe their race (see Figure 28). More than seven in 10 respondents are White or Caucasian, while four percent are Asian or Asian American and one percent are Black or African American.

Figure 28: Self-categorized racial identity of respondents



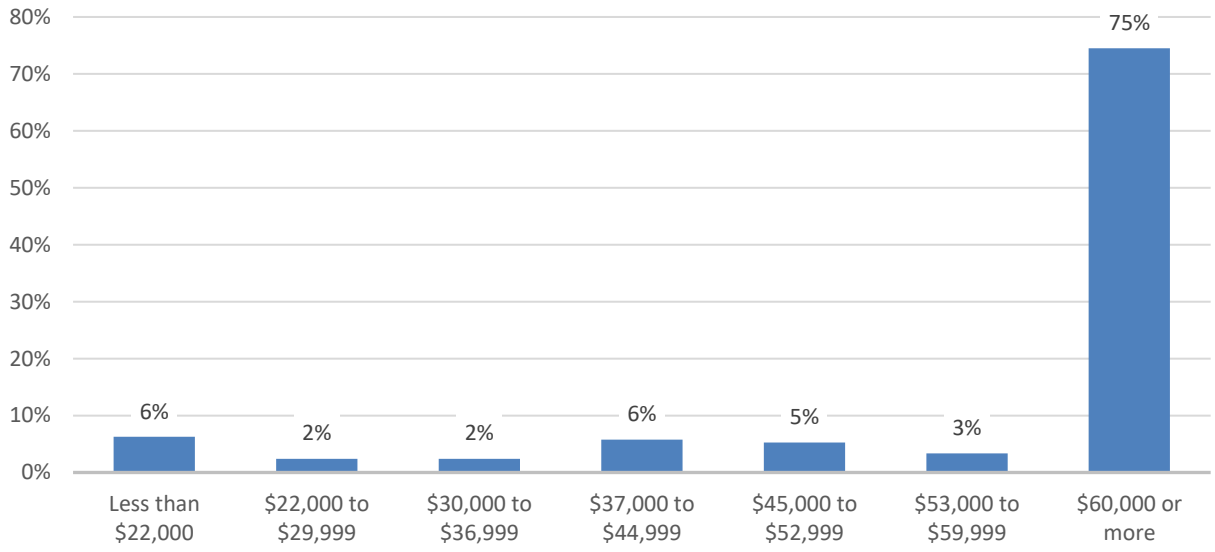
Respondents were also asked to indicate their ethnicity and if they belonged to a North American Indigenous, Native, or Tribal Group. In a separate question, when asked if they are of Hispanic, Latino, or Spanish origin, four percent responded yes. Less than one percent belong to a North American Indigenous, Native, or Tribal Group. Among those who responded to both the race and ethnicity questions, nine in 10 are White, non-Hispanic, and one in 10 belong to a racial or ethnic minority group (see Figure 29). Keep in mind that one-fourth of respondents cannot be classified (i.e., did not respond to race and/or ethnicity questions).

Figure 29: Race and ethnicity



As illustrated in Figure 30, one-fourth of respondents have an annual household income of less than $60,000, and three-fourths earn $60,000 or more per year.

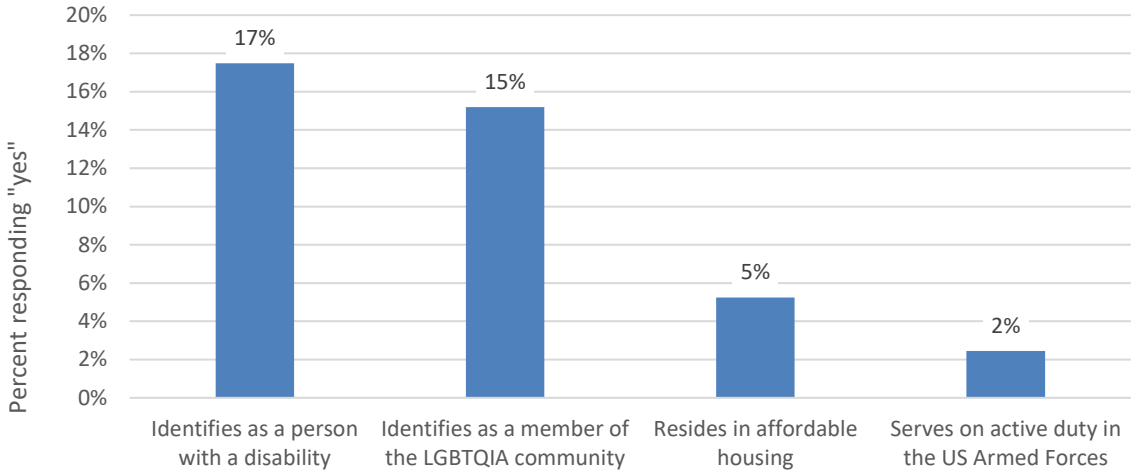
Figure 30: Annual household income



Respondents were asked if they belonged to certain other demographic groups. Seventeen percent of those who responded said they identify as a person with a disability, and 15 percent identify as a member of the LGBTQIA community (see

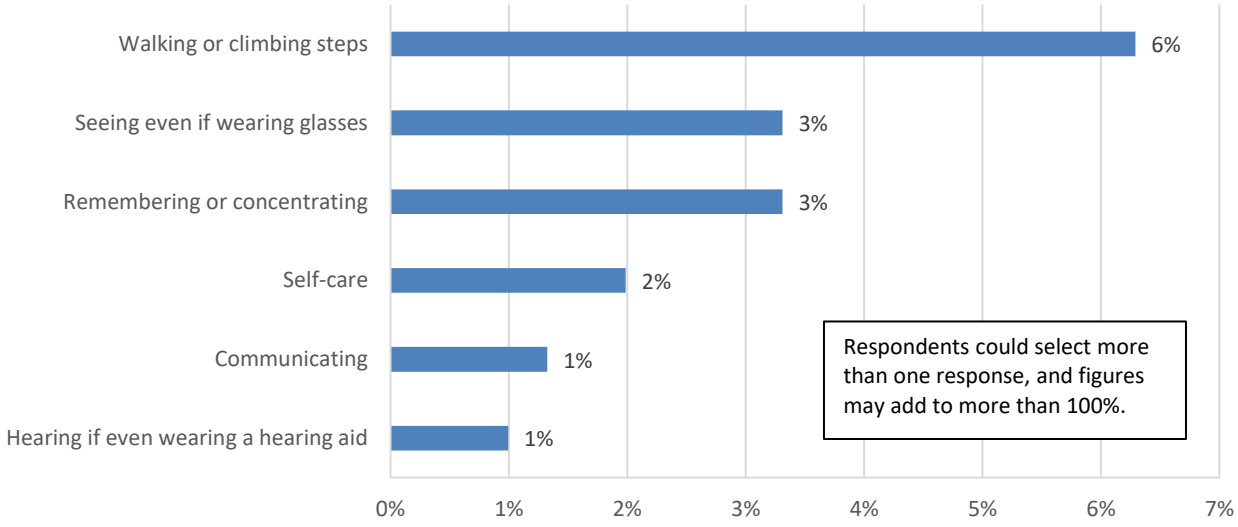
Figure 31). Additionally, five percent of respondents reside in affordable housing, and two percent serve on active duty in the US Armed Forces.

Figure 31: Respondent's identification with particular demographic groups



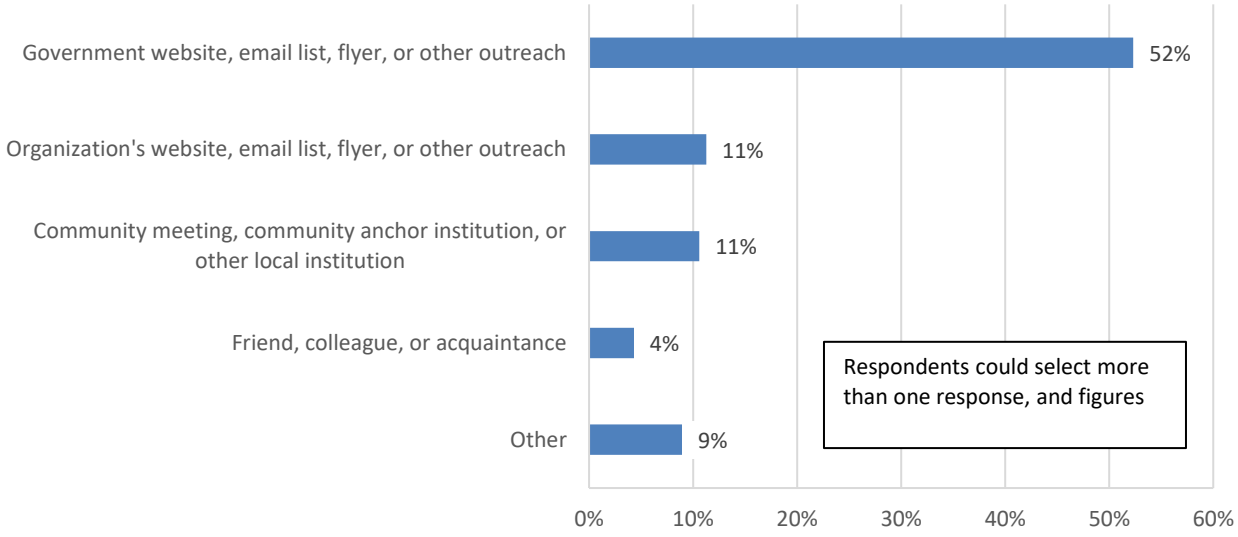
Additionally, respondents were asked if they faced difficulty in a variety of areas, as shown in Figure 32. Nearly nine in 10 respondents did not indicate any areas of difficulty. A small segment of respondents does face difficulties, such as with walking or climbing steps (six percent), seeing even if wearing glasses (three percent), and remembering or concentrating (three percent).

Figure 32: Respondent's difficulty in various areas



Respondents learned about the survey through a variety of sources, including 52 percent who heard about it from a government website, email list, flyer, or other outreach (see Figure 33).

Figure 33: Where respondents heard about survey



7 Funding resources for digital equity

The City's digital equity and inclusion priorities will be supported by the federal funding and programs stemming from the Infrastructure Investment and Jobs Act and its Digital Equity Act. The Digital Equity Act allocates $2.75 billion in federal funding to support three national programs intended to create opportunities for state and local entities to strengthen digital equity and inclusion within their communities.[31]

7.1 The Digital Equity Act and the state plan

The Digital Equity Act allocates $60 million for planning grants for states, territories, and Tribal governments to develop State Digital Equity Plans. MBI is the lead agency for Massachusetts and is responsible for conducting the planning process and drafting the state Plan with a $1 million federal grant under this program. At the time this report was provided to the City, the Plan was in the process of being finalized for submission to the NTIA. These state plans incorporate extensive outreach, partnerships, data collection and needs assessments to identify solutions to expand digital inclusion and promote the adoption and use of high-speed broadband services. The state plans will also analyze and incorporate any digital equity plans developed by local or regional jurisdictions in the state as a source of local information and input to develop larger state goals.

Each state's planning and recommendations will be directed especially toward ensuring that underrepresented and high-needs "covered populations" have the skills, capacity, and tools to connect, including the aging, formerly incarcerated, veterans, racial and ethnic minorities, people with disabilities, low-income households and those living in rural areas. MBI conducted a grant program using a portion of these planning funds to distribute targeted funding to nonprofits across the state to support outreach and planning for the State's digital equity plan.

The state digital equity plans submitted to NTIA set the stage for the $1.44 billion Digital Equity Capacity Building Grant Program. NTIA has not finalized the rules or timeline for the Capacity Grant Program but it is expected to open in the second half of 2024 and allocate funding over the course of several years. Under this program, states will apply for funding to support the implementation of their digital equity plans. States will receive funding based on a legislatively mandated allocation formula. Once received, states will have five years to use this federal funding to develop their own digital inclusion projects, including competitive grant programs for activities by state agencies, local governments, non-profits, and others.

Following the Capacity Grant program, NTIA will implement the $1.25 billion Digital Equity Competitive Grant program, expected in 2025. This direct funding program will award individual grants to eligible entities, including state and local governments and agencies, Tribal entities, nonprofits, and community anchor institutions. Rules and funding priorities are still being developed, but recipients will have four

[31] "Digital Equity Act Programs," NTIA, https://broadbandusa.ntia.doc.gov/funding-programs/digital-equity-act-programs.

years after notice of the award to expend these grants that will likely focus almost exclusively on the needs of underrepresented "covered populations" to connect through digital equity and inclusion programs. Funding likely will support programs that address affordability of services and devices, provide education and tools to increase privacy and cyber security while on-line, develop digital literacy and technical skills for personal and professional growth, and provide technical support and training for repair and updates to devices.

7.2 MBI also administers several programs funded by the American Rescue Plan Act

The American Rescue Plan Act (ARPA) State and Local Fiscal Recovery funds went to both the State of Massachusetts and directly to local jurisdictions. Through MBI, the state has allocated $75 million in state ARPA funding to digital equity and directed $50 million to grants through its Broadband Innovation Fund (Digital Equity Partnership & Municipal Digital Equity Planning). There are no grant programs under ARPA that are currently accepting funding applications, but the City should monitor state and local opportunities for future ARPA grant programs, including those that MBI may release. [32]

These opportunities could support the recommendations above, including digital literacy training, device distribution programs, and subsidies for low-income households for services. The City could consider taking advantage of future opportunities through a direct application for funding, or, as part of it convening activities, work with local organizations to encourage them to apply for projects that will benefit Watertown residents.

The state also has $175 million in Capital Projects Fund resources from ARPA. The state will focus this funding on broadband infrastructure construction and deployment.

7.3 MBI will be launching a direct grant program in February for the implementation of current digital equity planning activities

MBI says it plans to launch a direct grant program for municipalities to access implementation funds to carry out the efforts proposed through this and similar reports and other local digital equity programming activities. MBI says the application period is set to open in February, and close on June 30, 2024. The purpose of this funding is to enable municipalities to access direct grants to implement digital equity strategies identified through ongoing planning activities. This money is intended to help municipalities to make local digital equity investments that will increase access, adoption, and usage of the internet for populations most impacted by the COVID-19 pandemic.

Any municipality that has participated in the Municipal Digital Equity Planning Program or has a pre-existing local digital equity plan or related document can apply for this implementation funding. The City of Watertown will be able to start its application for these funds soon, using this report and ongoing

[32] The Municipal Digital Equity Planning Program is still open and accepting applications for additional cities and towns in Massachusetts.

conversations with local organizations as a guide. At the time this report was finalized, further information about this program was not yet available.

7.4 The U.S. Economic Development Agency has opportunities for distressed communities

The Economic Development Administration (EDA) of the U.S. Department of Commerce administers Local Planning and Technical Assistance Programs as well as federal Public Works and Economic Adjustment Assistance Program funding opportunities for a wide variety of projects with a current allocation of $161 million nationwide.[33] These programs are designed to address needs in economically distressed areas, and projects must meet specific criteria to show the project area is economically distressed. While this federal agency does not receive many broadband applications, communities that can show broadband is needed as an element of their economic development plan may have a strategic advantage.

Grants made under these programs will help communities plan, build, innovate, and put people back to work through infrastructure construction or non-construction projects designed to meet local needs. EDA encourages applicants to present "new ideas and creative approaches to advance economic prosperity in distressed communities"[34] and will consider projects that incorporate priorities related to equity, entrepreneurship, and workforce development. Several of the recommendations and projects discussed above could be eligible for funding under these programs.

Watertown must apply the "distress criteria"—high unemployment rates or low per capita income relative to the national average—to identify areas and neighborhoods that can take advantage of this opportunity.[35] It is also helpful to consider that projects with a significant showing of "distress" through extremely high unemployment or low per-capita income will generally have the lowest match requirements, and thus more flexibility in how it designs its projects. Watertown should further review the requirements for this program to determine if it will be an applicable source of funding, but it also may encourage other partners to also apply.

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[33] U.S. Economic Development Administration, Public Works and Economic Adjustment Assistance Programs, Notice of Funding Opportunity, at p. 10 (EDA was appropriated $121.5 million for the Public Works funding program), https://www.grants.gov/search-results-detail/346815; U.S. Economic Development Association, Planning and Local Technical Assistance Programs, Notice of Funding Opportunity, pg. 7 (U.S. EDA was appropriated $43.5 million for these programs), https://www.eda.gov/sites/default/files/filebase/files/programs/eda-programs/FY21-23-Planning-and-LTA-NOFO_FINAL.pdf.

[34] U.S. EDA Planning and Local Technical Assistance NOFO. at p. 5 and U.S. EDA Public Works and Economic Adjustment Assistance Programs NOFO at p. 4.

[35] U.S. EDA Planning and Local Technical Assistance NOFO. at p. 11.

7.5 The Federal Communications Commission's E-Rate program can bring discounted services to schools and libraries in the area

The Federal Communications Commission's E-Rate program was created in 1996 to enhance access to advanced telecommunications and information services for all public and nonprofit elementary and secondary school classrooms and libraries.[36] E-Rate is one of four programs comprising the Universal Service Fund (USF) and is funded by fees paid by telecommunications companies to fulfill the Congressional goals of universal service.

Currently, E-Rate is a $4.27 billion federal funding program managed by the Universal Service Administrative Company (USAC) that approves and provides subsidy discounts for telecommunications and information services for schools and libraries. In late 2023, the FCC made the latest addition to the list of eligible services by approving subsidies for Wi-Fi services on school buses as an eligible program expense to help close the "homework gap" for students with limited broadband access at home.

Eligible schools and libraries identify goods or services they need and submit a request for competitive bids to USAC who then posts these requests on its website for vendors to bid on. After reviewing the vendors' bids, the school or library selects the most cost-effective eligible products and services using price as the primary factor. It then applies to USAC for approval for the desired purchases.

Funds are awarded as discounts ranging from 20 to 90 percent of the eligible costs and discount levels are based on the poverty level of the schools. Rural schools and libraries may also receive a higher discount. Recipients must pay a portion of the service costs. Often, schools and libraries will form consortia to centralize and manage the E-Rate application, reporting, and budgeting processes within a central point of contact.[37]

Eligible schools and libraries in Massachusetts received $10.1 million in E-rate disbursements in 2023.38 The Massachusetts Board of Library Commissioners tracks E-Rate participation by libraries and library networks and provides information and resources about the program. The Department of Elementary and Secondary Education's Office of Digital Learning provides similar outreach and education for schools.39 While Massachusetts does not manage a state-wide consortium, several of the State's library networks and school districts participate in E-Rate, including the Watertown School District.

[36] "E-Rate", Universal Service Administrative Co., https://www.usac.org/e-rate/
[37] "E-Rate, Consortia", Universal Service Administrative Co., https://www.usac.org/e-rate/applicant-process/before-you-begin/consortia/.
[38] "E-Rate FRN Status Tool FY2016+", Universal Service Administrative Co., https://opendata.usac.org/E-Rate/E-Rate-FRN-Status-Tool-FY2016-/8xzh-ytkh
[39] "Technology Planning and Sustainability, E-Rate", Mass DESE, https://www.doe.mass.edu/odl/planning-funding/E-rate/

Appendix A: Stakeholder questionnaire

"Founded in Peace"
WATERTOWN
MASSACHUSETTS

MBI ctc technology & energy
engineering & business consulting

City of Watertown Digital Equity Program Questionnaire

The City of Watertown is undertaking a study of local broadband needs under the Massachusetts Broadband Institute's Municipal Digital Equity Program, in collaboration CTC Technology & Energy, a consulting firm with offices in Massachusetts.

Digital equity programs promote computer skills, internet access, and access to computing devices. Please fill out this questionnaire to the best of your ability. The goal of this questionnaire is to understand the active programs and initiatives currently facilitated by organizations located in or that serve Watertown, and to understand capacity for expanding existing efforts or starting new ones.

1. Which category best describes your organization? Please select all that apply.

- ☐ Public School
- ☐ Community colleges and other institutions of higher education
- ☐ Library
- ☐ Medical and health care providers
- ☐ Municipal government
- ☐ Public housing authority
- ☐ Community organization
- ☐ Workforce development organization
- ☐ Adult literacy organization
- ☐ Internet Service Provider (ISP)
- ☐ Non-profit organization that represents individuals with disabilities
- ☐ Non-profit organization that represents veterans
- ☐ Non-profit organization that represents aging individuals
- ☐ Non-profit organization that represents incarcerated individuals
- ☐ Non-profit organization that represents English learners
- ☐ Other (please specify)

2. Has your organization created a broadband and/or digital equity plan?

- ◯ Yes
- ◯ No

3. Please provide the information for a point of contact in your organization.

Name	
Organization name	
Email address	
Phone number	

Program Details

We want to collect data on all digital equity programs you currently provide. Please record as many details as you can about the program you offer. If your organization has more than one active digital equity program, there is an opportunity for you to answer the same questions for a second program.

6. What is the name of the project?

Project name	

7. What aspects of digital equity does the program address? Check all that apply.

- [ ] Availability and affordability of internet
- [ ] Digital literacy
- [ ] Cybersecurity
- [ ] Devices and technical support
- [ ] Online accessibility and inclusivity

8. Please describe the program in a few sentences:

9. Does the program focus on certain populations? Check all that apply.

- [ ] Individuals with disabilities
- [ ] Veterans
- [ ] Aging individuals (60 and above)
- [ ] Incarcerated individuals
- [ ] Individuals with a language barrier, including individuals who are English learners; and have low levels of literacy
- [ ] Individuals who are members of a racial or ethnic minority group
- [ ] Individuals whose household income is lower than 150% of the poverty level
- [ ] No particular focus on a population
- [ ] Other (please specify)

10. What is the annual project budget?

Cost in dollars

11. How much does the program cost to each participant?

Cost in dollars

12. What is the cost per participant served?

Cost in dollars

13. Please give us a sense of the geography you serve.

- ◯ Municipal-wide
- ◯ Neighborhood-wide
- ◯ Other (please specify)

14. How long has the program been active, in months?

Program length in months

15. How many people were served by the program in the last fiscal year?

- ◯ Under 25 people
- ◯ 26 to 50 people
- ◯ 51 to 100 people
- ◯ More than 100 people
- ◯ Other (please specify)

16. How many participants do you expect to serve over the life of the program?

- ◯ 1 to 50
- ◯ 51 to 100 people
- ◯ 101 to 250 people
- ◯ 251 to 500 people
- ◯ More than 500 people

17. If you had the resources, would you want to scale the project to serve more people?

- ◯ Yes
- ◯ No

* 18. Does your organization have another digital equity program?

- ◯ Yes
- ◯ No

Digital Equity Program #2

19. What is the name of the project?

Project name

20. What aspects of digital equity does the program address? Check all that apply.

- [ ] Availability and affordability of internet
- [ ] Digital literacy
- [ ] Cybersecurity
- [ ] Devices and technical support
- [ ] Online accessibility and inclusivity

21. Please describe the program in a few sentences:

22. Does the program focus on certain populations? Check all that apply.

- [ ] Individuals with disabilities
- [ ] Veterans
- [ ] Aging individuals (60 and above)
- [ ] Incarcerated individuals
- [ ] Individuals with a language barrier, including individuals who are English learners; and have low levels of literacy
- [ ] Individuals who are members of a racial or ethnic minority group
- [ ] Individuals whose household income is lower than 150% of the poverty level
- [ ] No particular focus on a population
- [ ] Other (please specify)

23. What is the annual project budget?

Cost in dollars

24. How much does the program cost to each participant?

Cost in dollars

25. What is the cost per participant served?

Cost in dollars

26. Please give us a sense of the geography you serve.

- ○ Municipal-wide
- ○ Neighborhood-wide
- ○ Other (please specify)

27. How long has the program been active, in months?

Program length in months

28. How many people were served by the program in the last fiscal year?

- ◯ Under 25 people
- ◯ 26 to 50 people
- ◯ 51 to 100 people
- ◯ More than 100 people
- ◯ Other (please specify)

29. How many participants do you expect to serve over the life of the program?

- ◯ 1 to 50
- ◯ 51 to 100 people
- ◯ 101 to 250 people
- ◯ 251 to 500 people
- ◯ More than 500 people

30. If you had the resources, would you want to scale the project to serve more people?

- ◯ Yes
- ◯ No

31. Does your organization have another digital equity program?

- ◯ Yes
- ◯ No

Planned Programs

We would like to collect information on any digital equity programs your organization is currently in the process of planning but has not yet implemented. Please record as many details about the upcoming program as possible.

* 32. Is your organization in the process of developing a digital equity program?

- ◯ Yes
- ◯ No

Planned Programs

33. What kind of digital equity program(s) is your organization developing? Please select the categories that best fit the program type.

- ◯ Digital skills and literacy
- ◯ Data privacy and cybersecurity
- ◯ Devices (Laptops, computers, tablets)
- ◯ Technical support
- ◯ Digital navigators
- ◯ Broadband access
- ◯ Creating accessible and inclusive internet content

34. What is the annual budget need?

35. What else do you need to launch the program?

36. What work (if any) has already been completed to launch the new program?

Future Programs

We would like to hear about any interest your organization has in developing a project in the future to address current gaps in digital equity. Please fill this section out if you have interest in digital equity programming but have not yet started the process of planning for that program.

37. Does your organization want to develop a digital equity program?

- ◯ Yes
- ◯ No

38. What kind of digital equity program(s) is your organization interested in developing? Please select the categories that best fit the program type.

- ☐ Digital skills and literacy
- ☐ Data privacy and cybersecurity
- ☐ Devices (Laptops, computers, tablets)
- ☐ Technical support
- ☐ Digital navigators
- ☐ Broadband access
- ☐ Creating accessible and inclusive internet content

39. What are the most pressing needs you are trying to address?

40. What do you need to launch the program?

Appendix B: MBI residential survey

MBI
MASSACHUSETTS BROADBAND INSTITUTE
at the MassTech Collaborative

Massachusetts Statewide Digital Equity Survey

The Massachusetts Broadband Institute (MBI) wants to hear from you about your experiences with getting and using internet service! This survey is completely anonymous and should be completed by one individual per household. **Your feedback is vital to understand barriers to internet access, affordability, and adoption to help close the digital divide.** Thank you for your time and participation.

Section 1: Please answer the following questions.

1. What is your zip code? _____
2. Which Massachusetts municipality do you live in? _____

Do you have internet service in your home?

- ☐ **YES** – Please proceed to Section 2 below
- ☐ **NO** – Please skip to Section 3 (flip this page over)

Section 2: Please answer the following questions only if you CAN connect to the internet from home.

3. Who is your internet service provider? _____
4. What kind of internet service do you have at home? Please check all that apply.
   - ☐ A data plan for a smartphone, hotspot, or tablet
   - ☐ Dial-up internet
   - ☐ Home wireline connection (cable, fiber, DSL, etc.)
   - ☐ Satellite internet
5. How well does your home internet service work?
   - ☐ Good enough to meet my household's needs
   - ☐ I don't know
   - ☐ Not good enough to meet my household's needs
6. Is your home internet service bundled with other services such as telephone or TV?
   - ☐ Yes
   - ☐ No
7. How much do you pay for the internet every month? $_____
8. How hard is it for you to pay your internet bill?
   - ☐ Very hard
   - ☐ Not too hard
   - ☐ Somewhat hard
   - ☐ Not at all hard
9. Have you heard about the Affordable Connectivity Program (ACP) that provides discounted internet service for low-income households?
   - ☐ Yes
   - ☐ I don't know
   - ☐ No

   For more information and to find out if you qualify for ACP, call the Federal Communication Commission's ACP Support Center: 877-384-2575.

When complete, skip to section 4 below.

Section 3: Please answer the following questions only if you CANNOT connect to the internet at home.

10. If you do not have internet service in your home, what is the reason?
    - ☐ Service is not available in my area
    - ☐ Service is too expensive
    - ☐ I am concerned about online privacy or safety
    - ☐ I don't feel confident navigating the internet or using online tools
    - ☐ I can't afford or access a device to use the internet
    - ☐ I don't want / don't use the internet.
    - ☐ Other (please specify): _____

11. If you do not have internet at home, where do you go to use the internet? Please check all that apply.
    - ☐ A workplace
    - ☐ A friend or family member's home
    - ☐ School, college, or university
    - ☐ A library or community center
    - ☐ A business such as a restaurant, cafe, or bookstore (e.g., McDonald's, Taco Bell, Starbucks, etc.)
    - ☐ A public space such as a park or government building
    - ☐ On public transit
    - ☐ I do not regularly access internet in these or any other spaces
    - ☐ Other (please specify): _____

When complete, proceed to section 4 below.

Section 4: All respondents should answer these questions.

12. Does everyone in your household have access to the computer devices they need to meet their everyday needs for internet use? (Computers, smartphones, tablets, or other internet enabled devices)?
    - ☐ Yes
    - ☐ No

13. Which of the following devices do you use most of the time to connect to the internet? (Check all that apply)
    - ☐ Cellphone
    - ☐ Desktop computer
    - ☐ Laptop computer
    - ☐ Tablet (or similar device)
    - ☐ Other (please specify): _____

14. How much would you be able to pay for a laptop or desktop computer?
    - ☐ $0-50
    - ☐ $50-100
    - ☐ $100-150
    - ☐ $150-250
    - ☐ $250-500
    - ☐ More than $1,000

15. Are you able to regularly use the internet for online activities?
    - ☐ Yes
    - ☐ No

16. Please rank the level of difficulty for what you use the internet for. (Easy, Not easy, Hard)

	Easy	*Not easy*	*Hard*
Searching and applying for a job	☐	☐	☐
Health care or telehealth services	☐	☐	☐
Participating in your local community	☐	☐	☐
General internet searching	☐	☐	☐
Transportation information	☐	☐	☐
Searching and/or applying for benefits or resources for you or your family	☐	☐	☐

17. If you do not have regular access to the internet, what would most like to use it for if you could?
    - ☐ Searching and applying for a job
    - ☐ Health care or telehealth services
    - ☐ Participating in your local community
    - ☐ General internet searching
    - ☐ Transportation information
    - ☐ Searching and/or applying for benefits or resources for you and your family
    - ☐ Something else
    - ☐ I don't want to use the internet regularly

18. What kind of digital skills support would you be most interested in?
    - ☐ In person classes
    - ☐ Online classes
    - ☐ In person support from a friend or instructor
    - ☐ A do-it-yourself training module

19. How concerned are you, if at all, about internet safety?
    - ☐ Very concerned
    - ☐ Somewhat concerned
    - ☐ Not very concerned
    - ☐ Not at all concerned

20. What are you most concerned about? (Select all that apply)
    - ☐ That my data could get stolen or used without my consent
    - ☐ That I or a loved one could get scammed or tricked
    - ☐ That I could be tracked or surveilled
    - ☐ That I or a loved one could be harassed or abused online

21. Are you aware of tools or resources you can use to stay safe online?
    - ☐ Yes, I have tools and resources I use stay safe online
    - ☐ No, I don't know of any tools or resources to stay safe online
    - ☐ I know of tools or resources to stay safe online, but they don't work for me
    - ☐ Other (please specify) : _____

22. How accessible are online government services like benefits portals, RMV services, or paying for permits or tickets to you?
    - ☐ Very accessible
    - ☐ Somewhat accessible
    - ☐ Not very accessible
    - ☐ Not at all accessible

23. When you have used online government services like benefits portals, RMV services, or paying for permits or tickets, how well did they work for you?
    - ☐ Very well
    - ☐ Somewhat well
    - ☐ Not too well
    - ☐ Not well at all

When complete, proceed to section 5 below.

Section 5: All respondents should answer these questions. *We collect demographic information so that we can make sure we are representing all neighborhoods, towns, cities and groups across the Commonwealth.*

24. What is your age?
    - ☐ 18 to 24
    - ☐ 25 to 34
    - ☐ 35 to 44
    - ☐ 45 to 59
    - ☐ 60 to 74
    - ☐ 75 and older
    - ☐ Prefer not to answer

25. What is your gender identity?
    - ☐ Woman
    - ☐ Man
    - ☐ Non-binary
    - ☐ Gender fluid
    - ☐ Other
    - ☐ Prefer not to answer

26. How many people, including yourself, currently live in your household? *(Note: A household is defined as all the people who currently occupy the housing unit where you live).*
    - ☐ 1
    - ☐ 2
    - ☐ 3
    - ☐ 4
    - ☐ 5
    - ☐ 6
    - ☐ 7
    - ☐ 8 or more
    - ☐ Prefer not to answer

27. How many children under age 18, currently live in your household? *(Note: A household is defined as all the people who currently occupy the housing unit where you live).*
    - ☐ 0
    - ☐ 1
    - ☐ 2
    - ☐ 3
    - ☐ 4
    - ☐ 5 or more
    - ☐ Prefer not to answer

28. What is the highest level of school you have completed or the highest degree you have received?
    - ☐ Less than high school, or high school incomplete (Up to grades 9-11 or Grade 12 with NO diploma)
    - ☐ High school graduate (Grade 12 with diploma or GED certificate)
    - ☐ Two-year associate degree from a college or university
    - ☐ Four-year college or university degree/Bachelor's degree (e.g., BS, BA, AB)
    - ☐ Postgraduate or professional degree, including master's, doctorate, medical or law degree (e.g., MA, MS, PhD, MD, JD)
    - ☐ Prefer not to answer

29. Are you of Hispanic, Latino, or Spanish origin, such as Mexican, Puerto Rican, or Cuban?
    - ☐ Yes
    - ☐ No
    - ☐ Prefer not to answer

30. Which of the following best describes your race? (Select all that apply)
    - ☐ White or Caucasian
    - ☐ Black or African-American
    - ☐ Asian or Asian-American
    - ☐ Native American/American Indian/Alaska Native
    - ☐ Pacific Islander/Native Hawaiian
    - ☐ Some other race (please specify) _____
    - ☐ Prefer not to answer

31. Do you belong to a North American Indigenous, Native, or Tribal group?
    - ☐ Yes
    - ☐ No
    - ☐ Prefer not to answer

32. What is your total annual household income from all sources, and before taxes?
    - ☐ Less than $22,000
    - ☐ $22,000 to $29,999
    - ☐ $30,000 to $36,999
    - ☐ $37,000 to $44,999
    - ☐ $45,000 to $52,999
    - ☐ $53,000 to $59,999
    - ☐ $60,000 or more
    - ☐ Prefer not to answer

33. Do you identify as a person with a disability? *(Note: Disability is defined as physical, emotional, or mental health conditions that result in limitations of activities or restrictions to full participation at school, at work, at home, or in the community).*
    - ☐ Yes
    - ☐ No
    - ☐ Prefer not to answer

34. If you identify as a person with a disability, do you have difficulty in any of the following areas? Please check all that apply.
    - ☐ Seeing even if wearing glasses
    - ☐ Hearing even if using a hearing aid
    - ☐ Walking or climbing steps
    - ☐ Remembering or concentrating
    - ☐ Self-care
    - ☐ Communicating, for example understanding or being understood
    - ☐ Prefer not to answer
    - ☐ I do not identify as a person with a disability

35. Do you identify as a member of the LGBTQIA+ community?
    - ☐ Yes
    - ☐ No
    - ☐ Prefer not to answer

36. Did you serve on active duty in the U.S. Armed Forces?
    - ☐ Yes
    - ☐ No
    - ☐ Prefer not to answer

37. Do you live in affordable housing? *(Note: Affordable housing is defined as housing subsidized by a housing authority, paid for through a voucher, or in a building run by a private developer.)*
    - ☐ Yes
    - ☐ No
    - ☐ Prefer not to answer

38. Where did you hear about this survey? Please check all that apply.
    - ☐ From a government website, email list, flyer, or other outreach
    - ☐ From a friend, colleague, or acquaintance
    - ☐ From a community meeting, community anchor such as a library or school, or other local institution
    - ☐ From an organization's website, email list, flyer, or other outreach
    - ☐ Other (Please specify) _____

Thank you for taking the survey!

Your response will help shape Massachusetts's policies and future funding allocations to close the digital divide for all its residents. If you would like to learn more, please visit **https://broadband.masstech.org/.**