



2021 Empowered San Francisco Technology Needs Assessment Report

Bridging the Digital Divide for San Francisco Residents
with Disabilities & Older Adults





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Assessment Report

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Land Acknowledgement: Thriving in Place humbly and respectfully acknowledges that it occupies the ancestral and unceded homeland of the Ramaytush Ohlone. We express gratitude for their past and present stewardship of this land.



About Thriving in Place: Thriving in Place (TiP) strengthens, sustains and advocates for the work of the San Francisco In-Home Supportive Services Public Authority and supports Bay Area-wide non-direct services programming, ensuring low-income older adults and people with disabilities are able to remain and thrive at home and in their communities. Being right at the epicenter of the tech industry, Thriving in Place values and supports the work being done to reduce the digital divide for this target population to ensure greater inclusion, access, and participation within the community. As the world continues to move to a more digital platform space, we want to ensure we are keeping older adults and people with disabilities moving along with it.



About Empowered Cities: Empowered Cities is a landmark initiative to advance financial inclusion and economic opportunity for lower-income people with disabilities. Empowered Cities catalyzes municipal efforts to advance economic opportunity for people with disabilities. Empowered Cities has expanded to include the Municipal Offices of Boston, Chicago, Los Angeles and San Francisco – under the leadership of the NYC Mayor’s Office for People with Disabilities. Citi Community Development is the Founding Corporate Partner of Empowered Cities and National Disability Institute is the Founding Financial Capability Partner.

With the arrival of the COVID-19 pandemic, Thriving in Place pivoted to address pandemic related needs for residents with disabilities. For Phase I, Thriving in Place used funds to launch a city-wide distribution of Personal Protective Equipment (PPE) to residents with disabilities. In Phase II, Thriving in Place developed a citywide needs assessment to identify the barriers that prevented residents with disabilities from participating fully and equitably in our digitally connected City.

About the Authors



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Andrea Aguinado (she/her) contributes to the Empowered Cities Technology Access Project as a Researcher and Analyst for the Digital Equity Needs Assessment Initiative. Previously, she worked as a Graduate Intern and Administrative Analyst with the San Francisco Human Services Agency, Policy and Planning Unit where she informed initiatives focused on increasing the accessibility of social services for vulnerable and marginalized populations. Andrea holds a MA in Social Welfare from the University of California, Berkeley. She has seven years of experience in building the collaboration and evaluation capacity of multisectoral community health and development projects.

Foreword

“Access to the internet and technology should no longer be considered a privilege or a luxury, it’s a basic human right, and should be considered a public utility, like water or electricity.”

– Lana Nieves, Executive Director of the Independent Living Resource Center of San Francisco and Community Advisory Coalition Member

The COVID-19 pandemic has made it more important than ever to bridge the digital divide and ensure that all San Francisco residents have access to the internet. Despite being widely recognized as a leader in the technology sector, there are still far too many people who lack equitable access to technology in San Francisco. For many people with disabilities, older adults and multiply-marginalized communities, the pandemic has intensified these already-existing gaps, and has made it acutely difficult to access information, services, and connections online. This reveals a troubling public health and social justice issue that can no longer be ignored.

Furthermore, The COVID-19 pandemic has revealed how vital it is to ensure that all digital content, programs and services are accessible to a wide range of residents with disabilities. Disabled people have long been advocating to attend work, school, or participate in public meetings remotely. It is critical to ensure that there are citywide digital accessibility policies in place so that all residents with disabilities can have equal access.

In the words of scholar Aimi Hamraie, *“Disabled people have been using online spaces to teach, organize, and disseminate knowledge since the internet was invented. Disabled people are leading survival praxis in apocalyptic times. Please also recognize that disabled people have long engaged in refining methods for remote access to protests, classrooms, doctor’s offices, public meetings, and other events.”*¹

This report takes this context to heart in working to advocate for those who are most impacted by digital inequality, and in affirming the knowledge developed by disability communities. There is a clear unified call from disability and aging advocates to establish the “internet as a utility,” which provides an important opportunity to think of the internet as public infrastructure rather than a luxury. We are urging policymakers on the City, State, and Federal levels to understand that access to the internet is no longer a “nice thing to have,” but is an essential human right.

– Cecile Puretz

1 Aimi Hamraie. Critical Design Lab. [Accessible Teaching in the Time of COVID-19](#). March 10, 2020.

Executive Summary

With support from the Empowered Cities grant initiative and the San Francisco Department of Disability and Aging Services (DAS), Thriving in Place (TiP) developed a city-wide technology needs assessment to understand the barriers and unmet needs of residents with disabilities and older adults (60+) during the COVID-19 pandemic. This report provides an analysis and summary of key findings from the 2021 Empowered San Francisco Technology Needs Assessment. This report also presents nuanced insights into the stories and lived experiences of diverse stakeholders who participated in focus groups and in-depth interviews.

COMMUNITY PARTICIPATION AND REPRESENTATION

In the spirit of “Nothing About Us, Without Us” we established a 14-person Community Advisory Coalition composed of a diverse cross-section of people with disabilities, veterans, transition-age youth (TAY) and disability and aging advocates who guided us through the six-month process. Throughout the Needs Assessment we prioritized outreach to disabled and older adults further marginalized by intersecting identities: veterans, transition-age youth ages 18-24 (TAY), LGBTQIA+ community members, justice-involved individuals, low-income residents, immigrants, residents of Single-Room occupancy Hotels (SROs) and supportive housing, and people experiencing homelessness.

More than 60 community-based organizations (CBOs), City agencies, and private sector stakeholder organizations participated throughout the process. Through the help of our community partners, we administered a citywide survey to over 3,080 stakeholders, and conducted 40 in-depth interviews and 9 focus groups.

OVERVIEW OF STRATEGIC PLANNING PROCESS

The first phase began with an in-depth literature review of local, national, and statewide trends around digital inequality. This involved exploring recent data around barriers to technology during COVID-19 and learning about the web of existing digital inclusion programs in the City and County of San Francisco.

In phase two, the Project Team and Community Advisors administered a 33-question survey in 6 languages and accessible formats to 3,080 stakeholders, followed by 9 focus groups with 49 residents. Focus groups engaged Deaf and disabled adults, transition-age youth, older adults, veterans, unhoused community members, and residents living in affordable and supportive housing. The focus groups were conducted to discover what barriers existed for residents across language, disability, age and historically marginalized racial groups.

The survey focused on seven key areas:

1. Access to Internet, devices, and assistive or adaptive technology
2. Access to services during the COVID-19 pandemic
3. Technology barriers or challenges
4. Familiarity using internet and devices (digital literacy skills)
5. Use of technology for social engagement
6. Access to health information and services during the COVID-19 pandemic
7. Recommendations for improving access to technology

The survey also included 11 demographic questions to ensure that the City was reaching a representative sample of San Francisco residents.

The needs assessment was centered on the following questions:

- What are the technology barriers and needs of San Francisco residents with disabilities and older adults during COVID-19?
- Are there differences in digital needs, barriers, and experiences based on disability, age, race, income, language, housing and access to devices and internet?

OVERVIEW OF KEY FINDINGS

Throughout this process, we engaged thousands of San Franciscans who faced significant technology challenges. Results of the survey, focus groups, and in-depth interviews uncovered significant evidence that there is an urgent need to close the digital divide in San Francisco. The fact that 64% of 1,529 survey respondents reported that technology was a barrier in accessing needed services during COVID-19, underscores how urgent this issue is.

11 key themes emerged:

1. Access to technology was a vital resource in receiving various COVID related public services and information, as well as maintaining social connections during the pandemic. Without adequate access to digital technologies or digital skills, many residents felt they would be “left behind” and not be able to access critical services, information and support.
2. Affordability, unreliability, and concerns about online security were reported to be primary barriers to accessing the internet.
3. During the pandemic, receiving medical services through telehealth (phone and video visits) was both vital and presented some significant challenges for residents with disabilities and older adults.
4. Receiving telehealth services was particularly difficult for the Latinx/Hispanic/Latin-American community.

5. There are digital challenges that go beyond access to devices and the internet. While access to devices and the internet are vital to digital inclusion, there are barriers that cannot be solved by access alone. Lack of accessibility of digital content and services was a key issue that was raised by focus group participants.
6. Providing free or low-cost assistive or adaptive technology (AT) and AT training and information is key for ensuring digital equity for residents with disabilities and older adults.
7. The need for assistive or adaptive technology services (such as affordable AT equipment and education) are greater for people with disabilities who are: older adults (ages 60+); experiencing either chronic pain or mental health disability; low-income (less than \$20,000); living in single-room occupancy (SRO) hotels; Black, Latinx, and AAPI communities; monolingual (Spanish or Cantonese); and those who lack access to devices and internet.
8. Public computer labs such as public libraries, community centers, or tech labs served as vital sources of internet for the disability community prior to the pandemic, particularly for transition-age youth (18-24), veterans, and people experiencing homelessness.
9. The importance of safe, secure and accessible public computer labs in providing access to free technology services for residents with disabilities and older adults.
10. Customized digital literacy services are necessary for a community with varied digital knowledge and experience.
11. Lack of access to the internet is a barrier to employment and academic success. Focus groups revealed that many residents with disabilities routinely face barriers to accessing employment remotely due to unreliable internet.

OVERVIEW OF POLICY RECOMMENDATIONS

Based on conversations with stakeholders, CBO community leaders and the Community Advisory Coalition, we identified 11 policy recommendations to improve digital equity in the City and County of San Francisco. Full policy recommendations can be found in a later section of this report.

Policy Recommendations:

1. **Prioritize improving free or low-cost digital connectivity for residents with disabilities, older adults, and multiply-marginalized communities.** There is a clear unified call from disability and aging advocates to establish the “internet as a utility,” which provides an important opportunity to think of the internet as public infrastructure rather than a luxury or commodity. The proposed recommendation urges the City to proceed with building a City-owned fiber infrastructure to ensure that all SF residents can benefit from free high speed internet.

- 2. Develop a centralized hub to build awareness around existing digital inclusion programs, free or low-cost internet, devices and Assistive technology (AT), and digital skills training.** Although San Francisco has a robust portfolio of digital inclusion programs, there is a clear need to increase awareness and education around these vital technology resources, and to create centralized hubs for information, referral and assistance.
- 3. Develop pipelines to increase funding and distribution of free or low-cost Assistive or Adaptive Technology (AT) devices, repairs, and training in partnership with public technology labs.** Providing AT is an essential part of ensuring digital equity for San Francisco residents with disabilities and older adults. This recommendation also proposes to develop greater outreach and education resources to publicize the range of free or low-cost AT devices, repairs, and training options available.
- 4. Increase digital accessibility standards for remote services, programs and events across the city of San Francisco.** Continue to offer remote participation options for disabled residents to participate in public meetings, and make it a permanent option. Develop an Accessible Technology Playbook and create an “Access Fund” to support CBOs in making their online events and services more accessible through providing ASL interpreters, CART real-time captioning, and audio description.
- 5. Pilot initiatives aimed at lowering barriers to telehealth access in partnership with affordable and supportive housing communities to equip residents with internet access, telehealth tools and digital literacy skills.** Without adequate access to digital technologies and skills, many people with disabilities are unable to access vital healthcare information and services.
- 6. Create and implement measures to ensure that remote employment opportunities and accessible workplace technology are available for disabled residents in City and County of San Francisco.**
- 7. Boost investment in digital literacy programs, with a particular focus on language access, accessibility, and cultural relevance.**
- 8. Invest in digital equity programs and community-led solutions for transition-age youth with disabilities (18-24),** youth experiencing chronic homelessness and youth in the foster care system.
- 9. Develop digital stewardship models to include community members with disabilities, older adults and other disproportionately affected people and communities in the designing, building, and evaluating of digital equity solutions** for the City and County of San Francisco Digital Equity Strategic Plan 2010-2024 and future plans.
- 10. Continue to develop the Bay Area Regional Digital Equity Consortium to advance local, regional and statewide Digital Equity efforts and common alignment of policy recommendations.**
- 11. Roll-out recommendations and manage the implementation of urgent initiatives that address the needs and barriers of San Francisco residents with disabilities and older adults.** We are urging City policymakers to actively work towards enacting these short- and long-term recommendations proposed by the 2021 Empowered San Francisco Technology Needs Assessment.

“It shouldn’t take a global pandemic to make our culture more accessible to disabled folx. But now that we’ve seen how beneficial remote, virtual, and accessible options for school, work, healthcare, and social events have been to our communities, let’s ensure they continue. And we need to continue to expand access to technology which makes remote options possible to BIPOC, low-income, and other multiply marginalized disabled people.”

- SININVALID @SINSINVALID SOCIAL MEDIA POST EXCERPT, OCTOBER 2021³

The COVID-19 pandemic has exposed many fault lines in American society, and one that became increasingly visible is the “digital divide”, a term used to describe those who have access to the internet and those who do not.³ While San Francisco is widely known as a leader in the technology sector, there are still far too many people who don’t have access to this critical resource. In a city that is home to major tech companies like Google, Facebook, Twitter and Salesforce, there are still 1 in 8 San Francisco residents who do not have access to an internet connection at home.⁴

Recent events with the COVID-19 pandemic have revealed how vital the internet has become to our lives. From making healthcare appointments, applying for government benefits, taking online classes, or staying connected with friends and family. Having the internet has routinely been described as the equivalent of a public utility, like water or electricity.

Even before the pandemic, the digital divide was a very real and persistent issue. A report released from the company BroadbandNow found the Federal Communications Commission estimated that 42 million Americans do not have the ability to purchase broadband internet.⁵ Furthermore, according to the PEW Research Center, Americans with disabilities have historically been less likely to have broadband internet

2 Sinsinvalid, @sinsinvalid, [Excerpt from social media post](#). Facebook, December 28, 2021.

3 Edutopia. [Crossing the Digital Divide: Bridges and Barriers to Digital Inclusion](#). 2011.

4 City and County of San Francisco Digital Equity Strategic Plan 2019-2024. Mayor’s Office on Housing and Community Development (MOHCD). 2019.

5 BroadbandNOW Research. [FCC Reports Broadband Unavailable to 21.3 Million Americans, BroadbandNow Study Indicates 42 Million Do Not Have Access](#). 2021.

access, own devices, and go online.⁶ It's also important to note that this digital divide has had an acute impact on African-Americans⁷, Indigenous⁸ and low-income disabled communities.⁹

There is a growing body of research showing that there is a racial digital divide in the U.S., where low-income people of color are unevenly impacted by the lack of technology resources and internet.¹⁰ In 2019, the Greenlining Institute created a map of Internet adoption rates throughout California, and found that areas that have historically been redlined are digitally redlined today.¹¹ Digital redlining refers to the illegal practice of denying services to communities of color specifically around access to digital technologies, digital content, and the internet.¹² Research has shown that while Internet service providers invest in high-speed internet in wealthier neighborhoods, evidence suggests that they are under-investing in low-income communities of color across California.¹³

THE DIGITAL DIVIDE IN SAN FRANCISCO

In 2019, the San Francisco Office on Digital Equity reported that there were 100,000 residents (1 in 8 residents) who lacked access to broadband Internet, devices and digital skills. Of those residents, those who are low-income, older adults (60+), people with disabilities, communities of color, new immigrants and refugees, and people with limited English proficiency, have been disproportionately impacted.¹⁴

According to the analysis of the 2016 American Community Survey (ACS) by the San Francisco Human Services Agency,¹⁵ San Francisco has the highest percentage of older adults and people with disabilities than any other city in California. 1 in 10 San Francisco residents (94,000) reported a disability. Of those 94,000 residents, 64% are from communities of color, and 1 in 4 people with disabilities experience poverty.

6 PEW Research Center. [Disabled Americans Are Less Likely To Use Technology](#). April 7, 2017.

7 Dana Floberg. [The Racial Digital Divide Persists](#). Free Press. Dec 13, 2018.

8 Partnership with Native Americans (PWNA). [COVID-19 Shines A Light on the Digital Divide in Indian Country](#). April 14, 2020

9 X.Z. Brown, Lydia. [How to Center Disability in the Tech Response to COVID-19](#). Brookings. July 2021.

10 Turner, Derek, S. [Digital Denied: The Impact of Systemic Racial Discrimination on Home-Internet Adoption](#). Free Press, December 2016.

11 Greenlining Institute. [On the Wrong Side of the Digital Divide. Life Without Internet Access, and Why We Must Fix it in the Age of COVID-19](#). June 2020.

12 Wikipedia. [Digital Redlining](#)

13 Moya, Gisella. [Digital Redlining in the Bay Area](#). Greenlining Institute, 2020.

14 Mayor's Office on Housing and Community Development (MOHCD). [City and County of San Francisco Digital Equity Strategic Plan 2019-2024](#).

15 [San Francisco Senior and Disability Population Demographics by Supervisorial District](#), San Francisco Human Services Agency – Planning Unit.

San Francisco residents report many types of disability:

- **Mobility** (Difficulty walking or climbing stairs): **50,739**
- **Independent Living** (Difficulty doing errands alone): **43,232**
- **Cognitive** (Difficulty concentrating, remembering, or making decisions): **36,851**
- **Sensory** (Difficulty hearing and/or seeing): **35,748**
- **Personal Care** (Difficulty dressing or bathing): **24,640**

In March 2021, the Department of Housing and Community Development (MOHCD) reported that of the estimated 386,349 households in San Francisco, 64,800 lack broadband internet, and 29,1999 lack any internet access.¹⁶ Additionally, the report cited that 32,000 low-income housing households still need to be connected with free WiFi.

Furthermore, the 2019 ASC 5-year estimates reveals that the neighborhoods where fewer than 60% of households have broadband subscriptions are located in low-income communities of color:¹⁷

- **Visitacion Valley-Sunnydale**
- **Tenderloin**
- **Mid Market**
- **Chinatown**
- **SOMA**
- **Bayview-Hunters Point**

Another group particularly affected by the digital divide in San Francisco is people experiencing homelessness.¹⁸ According to the 2019 City and County of San Francisco Point-in-Time Count, there are more than 8,000 unhoused people, of which 1,145 are unaccompanied youth.¹⁹ Additionally, there are currently 1,730 people temporarily housed in Shelter-in-Place hotel rooms, and up to 260 people living in sanctioned encampments. Transition-age youth (TAY) who experience chronic homelessness also experience acute barriers to technology, and WiFi has been shown to be an important lifeline.²⁰

Veterans have also been shown to experience significant barriers to technology during the COVID-19 pandemic, with telehealth and lack of affordable broadband service being the largest barriers.²¹

16 Mayor's Office on Housing and Community Development (MOHCD). Board of Supervisors Hearing: Digital Divide Review. March 11, 2021.

17 Censusreporter.org, American Community Survey 5-year estimate (2015-2019)

18 GSMA Digital Equity Initiative. [Accelerating Digital Inclusion for People Experiencing Homelessness: A spotlight on San Francisco](#). March 2020.

19 Applied Survey Research (ASR). [San Francisco Homeless Count & Survey](#), Watsonville, CA. 2019.

20 Russell, Melia. [Closing the Connectivity Gap for SF's Homeless Youth](#). Government Technology. February 5, 2019.

21 [VA expands telehealth services in response to COVID-19 pandemic](#). [Internet]. Indianapolis (IN): The American Legion. June 24, 2020.

The digital divide also disproportionately impacts K-12 and transition-age (18-24) students with disabilities, particularly those who are low-income. For students with disabilities, the digital divide is not only an issue of access to a reliable internet connection and devices, but also about ensuring that the technology is inclusive for their needs.

Out of a total population of 52,778 students enrolled in SFUSD, students with disabilities represent 12.1% (6409).²² There are also 4.2% of students (2,212) who are homeless, and 227 (0.4%) who are in the foster care system. Approximately 22,000 SFUSD students have insufficient access to a computer for distance learning, and 22% (13,750) do not have reliable internet access.²³

CURRENT DIGITAL INCLUSION PROGRAMS IN SAN FRANCISCO

Various non-profit agencies have historically provided free public Internet and computer labs in senior centers, libraries, housing sites, and public locations throughout San Francisco. Many residents relied on these spaces as a primary source of internet prior to the COVID-19 pandemic. With the closure of many of these public spaces, residents have faced significant barriers. In response, many of these spaces have had to pivot.

Below is an overview of some of these efforts during COVID-19:

1. The Community Living Campaign's SF Connected program offered virtual group computer sessions, 1:1 customized support, and distributed over 520 home devices to residents, and launched a citywide campaign to increase funding and advocacy for digital inclusion resources.
2. Community Tech Network (CTN) launched Home Connect offering virtual trainings, disseminated 400 devices, and has been working to build capacity with organizations on how to lead this work (train-the-trainer capacity building).
3. The Independent Living Resource Center of San Francisco (ILRCSF) provided free Assistive Technology (AT) devices, information and PPE to residents with disabilities.
4. The San Francisco Office on Digital Equity provided Wi-Fi installation at family housing sites and shelters, supported SFUSD families with hotspot and Chromebook setup, worked in partnership with DCYF Community Hubs, Chromebook distribution with CBO partners, and provided City grantees with devices and remote training for clients.
5. Senior and Disability Action (SDA) launched a Free WiFi Campaign to call on AT&T to create a high-quality, reliable, Free WiFi program for all seniors and people with disabilities in San Francisco.

22 California School Board Dashboard. [District Performance Overview of SF Unified School District](#). 2020.

23 SPARK SF Public Schools. [The digital divide is denying equitable access to essential education technology for the students who need it most](#). 2020.

6. The San Francisco Public Libraries (SFPL) provided 40 technology classes hosted online. Topics included basic computer skills, job skills and advanced tech training. Instruction was offered in English, Spanish, Cantonese and Mandarin. SFPL Access Programs continued to run the Braille and Talking Book Center to serve blind and low-vision patrons.
7. The Department of Homelessness and Supportive Housing partnered with the Dept. of Technology and MOHCD to provide free City WiFi at new Navigation Centers opened in 2021, and the COVID-19 Command Center provided digital access to guests accessing the Alternative Shelter Program.
8. The SF Tech Council (SFTC) hosted all monthly meetings virtually since April 2020, and has attended all outreach meetings and partner events via teleconferences. SFTC also launched a number of partnerships focusing on social isolation and technology, and distributed 120 Grandpads to older adults.

BARRIERS TO TECHNOLOGY FOR PEOPLE WITH DISABILITIES

Thirty one years have passed since the signing of the Americans with Disabilities Act (ADA), and yet many San Francisco residents with disabilities still face lack of equal access to Information and Communication Technologies (ICT). Lack of accessible technologies is a vital part of removing barriers for people with disabilities.

Since the start of the current COVID-19 crisis, many community organizations have been proactive in reaching out to their audiences through virtual classes, phone-based calls and social media. However, community organizations should remember to ensure that these invaluable resources are fully accessible to people with disabilities.

According to a recent study published by WEBAim, nearly 98% of online content in the U.S. does not comply with Web Accessibility Guidelines, the international standard for making online content accessible for people with disabilities.²⁴ This means that there is still a high percentage of online content that is inaccessible to people who use screen-readers, captioning, or other adapted technologies.

Why Is Accessibility So Important?

Approximately 20% of the US population requires some form of assistive technology to browse online content.²⁵ The US Federal Access Board requires all government sites, including City and County of San Francisco websites to be compliant with Section 508 Accessibility Guidelines. Compliance with Section 508 Guidelines allows users with disabilities who use assistive technology to have equal access to online content.

24 WebAIM. [The WebAIM Million: An annual accessibility analysis of the top 1,000,000 home pages.](#) 2021

25 San Francisco Human Services Agency (HSA). [Accessibility Standards and Guidelines.](#)

We also know that many people with disabilities routinely face barriers in navigating technology in the workplace due to its inaccessibility—from websites that aren't accessible, to Zoom meetings that don't include captioning or ASL interpretation.²⁶ Ensuring that workplace technology is accessible is a critical aspect of ensuring digital equity. Without internet access, digital technologies, and remote access to employment, many people with disabilities of all ages are cut off from participation in the workforce.

So what does it mean when people with disabilities receive the accessibility and Assistive Technology they need?

1. For a person who is blind or low-vision, being able to have the necessary assistive technology such as a screen-reader on their laptop may mean finding information about the vaccine, applying for a job, or taking classes online.
2. For an older adult, having a tablet may mean being connected with family and friends, joining social activities, or having a healthcare appointment.
3. For a person who is Deaf, having a videophone and access to captioning or ASL interpretation may mean that they can connect with their healthcare providers, do online banking, or access information.
4. For a person experiencing homelessness, having a device and a reliable internet connection may mean that they can locate information about shelter, food, or critical services.

For everyone, being connected to online information, services and accessible digital technologies is increasingly essential for so many aspects of our lives, health, and sense of social connection.

CENTERING DISABILITY IN THE TECH RESPONSE TO COVID-19²⁷

Many disability advocates have observed that there is a long history of Deaf and disabled communities using online spaces to teach, organize, and exchange mutual aid resources. In many ways, society is gaining from the expertise and knowledge about remote access that were first developed by Deaf and disabled communities for years. Liz Jackson, founder of the Disabled List, talks about the “life hacks”²⁸ that disabled people have created in order to navigate inaccessible environments, both virtual and physical.

Prior to the pandemic, many workplaces and schools denied disabled peoples' accommodation requests for working from home or distance learning. The perception was that it was too expensive or too complicated. And now, with millions of people studying virtually or working from home — it is critical to ensure that remote participation continues beyond the pandemic.

26 Wall Street Journal. [How to Make Workplace Technology Accessible to Everyone](#). June 2021.

27 Sinsinvalid. [Social Distancing and Crip Survival: A Disability Centered Response to COVID-19](#). March 19, 2020.

28 Jackson, Liz. [Disability Design Lifehacks](#). NY Times Op-Ed Disability Section. 2019.

ADVOCATING FOR PERMANENT OPTIONS FOR REMOTE PARTICIPATION

Remote participation is an important way that disabled people have engaged in public meetings and decisions that affect their lives. Executive Director of the San Francisco Senior and Disability Action (SDA), Jessica Lehman explains: “Being able to participate in public meetings is as crucial to our democracy as voting or protesting. Many of us have long been told that enabling our participation was not possible, but the COVID-19 pandemic has shown that it is.”²⁹

Deaf advocate Jules Good, founder of Neighborhood Access, further emphasizes: “by continuing to have a virtual attendance option for future events, even as we eventually move into facilitating more things in person, we send a message to disabled people that their perspectives matter, and that we value their presence.”³⁰

IMPORTANCE OF REMOTE ACCESS IN DISABILITY CULTURE & ACTIVISM

Remote access has also opened up possibilities to bring more visibility to the perspectives of disabled people who have historically been under-represented and under-valued.

FOUNDER OF RAMP YOUR VOICE! VILISSA THOMPSON WRITES:

“One of the joys of technology and online activism is the foregrounding of intersected voices, particularly those of color, that have been overlooked and devalued for too long (...) Technology gives us the ability to find the community we desperately seek, particularly those of us who live in areas that are not very diverse or where we cannot venture out safely or independently in our communities due to systemic and/or architectural barriers. Blogging, vlogging, social media platforms such as Facebook and Twitter, and online forums shatter these barriers and give us the freedom to be seen, heard, and to tell our truths, call out the -isms and -phobias that we fight against every day, and, most importantly, connect with those who ‘get’ us.”

29 Lehman, Jessica and Burrell, Jamel. [In the Zoom era, disabled Californians need permanent options for remote participation.](#) Special to the Sacramento Bee. April 27, 2021.

30 Elly Belle. (Dec 24, 2020). Teen Vogue. [“How 2020 Created Community for Disabled People.”](#)

31 Thomson, Vilissa. Ramp Your Voice! [“How Technology Is Forcing the Disability Rights Movement into the 21st Century.”](#) Catalyst: Feminism, Theory, and Crip Technoscience, 5 (1), 1-5. 2019.

During the COVID-19 pandemic, many Bay Area disability community organizers used online platforms to organize, educate and share mutual aid resources. Some examples include:

- The late and beloved Stacey Park Milbern,³² founder of the Disability Justice Culture Club (DJCC) organized the distribution of PPE, hygiene kits, medicine, information about COVID, food and medication to unhoused and disabled community members in Oakland during the pandemic.³³
- San Francisco Senior and Disability Action (SDA) led a Bay Area-wide mutual aid project with community members helping each other with food deliveries, home care, and phone calls.³⁴
- The #NoBodyIsDisposable Coalition created an online toolkit that included strategies for people with disabilities who faced potential discrimination in medical care rationing.³⁵
- The Longmore Institute on Disability at San Francisco State hosted the Superfest Disability Film Festival and a series of cultural events virtually offering ASL interpretation, captioning, and live audio description.
- Sinsinvalid, a disability justice performance project that centers people of color, queers, nonbinary and trans people with disabilities, hosted an online performance of “We Love Like Barnacles: Crip Lives in Climate Chaos,” with ASL interpretation and live audio description.
- Alice Wong, founder of the Disability Visibility Project (DVP) hosted an expansive series of interviews, articles, and disability advocacy campaigns, and published Disability Visibility: First Person Stories from the 21st Century and an Op-Ed in the NY Times “I Will Not Apologize for My Needs” speaking to the impact of healthcare discrimination for people with disabilities during the pandemic.³⁶
- The Crip Camp Impact Campaign hosted its flagship program, Crip Camp: The Official Virtual Experience reaching thousands of people nationally and internationally.

In conclusion, it is vital to ensure that all digital inclusion programs center the practical knowledge and wisdom developed by disability communities. Moreover, accessibility needs to be built-in from the very beginning of any digital equity initiative, not as an afterthought.

32 Leah Lakshmi Piepzna-Samarasinha & Alice Wong. [#StaceyTaughtUsSyllabus: Work by Stacey Park Milbern](#). Disability Visibility Project (DVP). May 23, 2020.

33 Green, Matthew. [Coronavirus: How These Disabled Activists Are Taking Matters Into Their Own \(Sanitized\) Hands](#). KQED. March 17, 2020

34 San Francisco Senior and Disability Action (SFSDA). [2020: A Year in Review. Addressing the COVID-19 Pandemic](#). 2020.

35 #NoBodyIsDisposable. [Know Your Rights Guide to Surviving COVID-19 Triage Protocols](#). 2020.

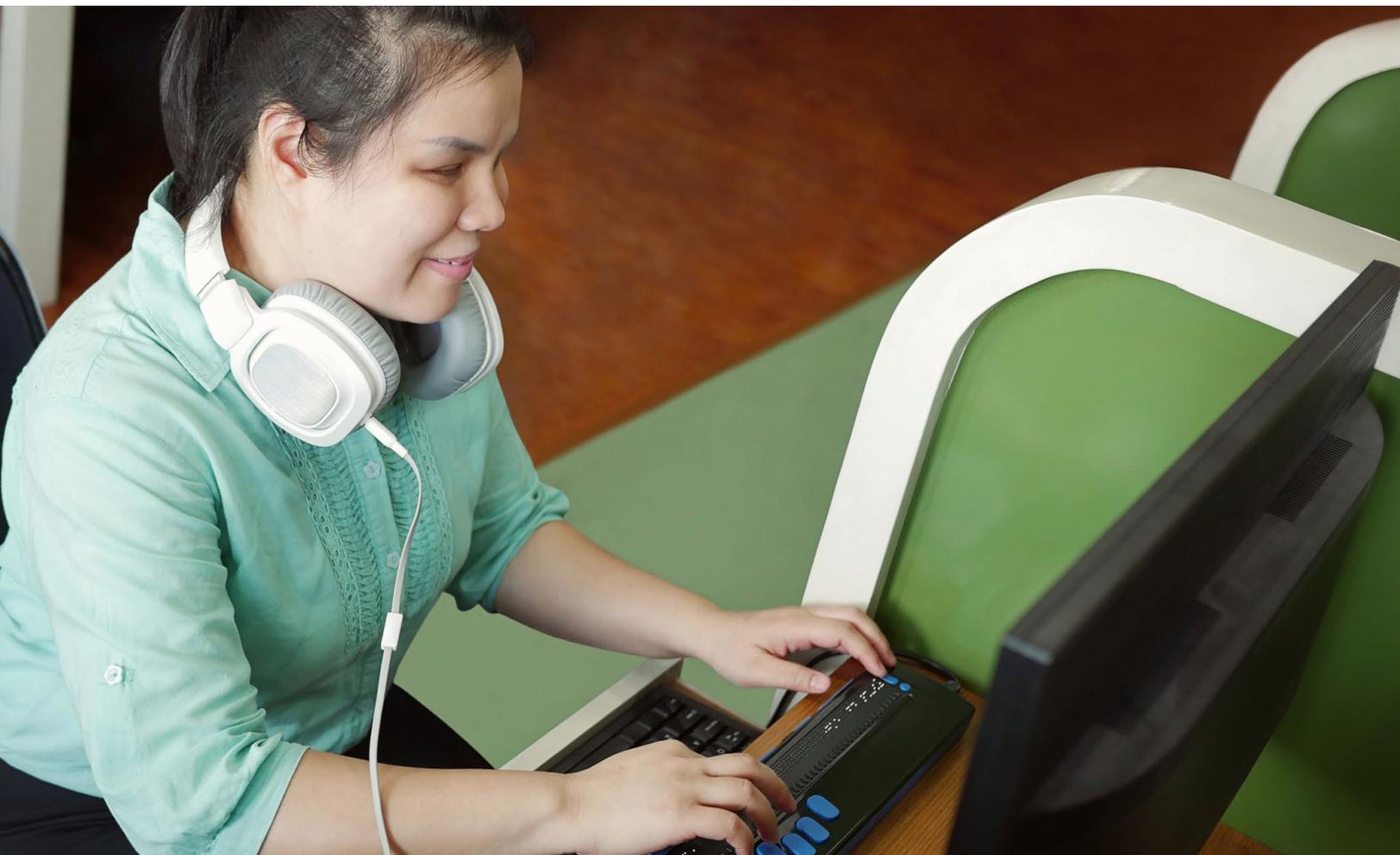
36 NY Times. Alice Wong. Opinion, Disability, [I Will Not Apologize for My Needs](#). March 23, 2020.

OVERVIEW

This Community Needs Assessment was centered on inclusivity and accessibility. Community partnerships played a key role in project administration and data collection. Mixed-methodology (qualitative and quantitative) research approaches were used to capture and analyze community input. Finally, the project team designed the research data collection and analysis to be accessible to a wide range of people with disabilities.

PROJECT ADMINISTRATION AND COMMUNITY ENGAGEMENT METHODOLOGY

Throughout the needs assessment process, we used both virtual and in-person approaches to community engagement which allowed us to reach a more diverse and broad audience. In-person outreach was a vital tool in reaching residents who were not digitally connected. We also prioritized outreach to geographically underserved areas of the City, and built partnerships with community leaders in those neighborhoods.



TIMELINE

Method	Timeframe	Activities
Established a Community Advisory Coalition	Jan-Feb 2021	Convened 14-person advisory coalition made up of Deaf and disabled adults, veterans, TAY youth with disabilities, and representatives from community advocacy organizations.
Background Research	Jan-April 2021	Conducted 40 virtual interviews with community-based organizations, and conducted a literature review.
Field Research: Survey	March-May 2021	Developed a citywide survey asking people with disabilities and older adults about their barriers and unmet needs using technology during COVID-19. Translated the survey into five languages and accessible formats (Braille, large-print and ASL Vlog) and promoted in low-income and supportive housing, food distribution sites, shelters, veteran centers and community centers.
Field Research: Focus Groups	March-June 2021	Conducted 9 virtual focus groups with adults with disabilities, transition-age youth with disabilities, older adults from communities of color, veterans, residents of Single-Room Occupancy Hotels (SROs), and people experiencing homelessness.
Analysis and Policy Recommendations	June-July 2021	Conducted mixed-methodology analysis, and developed policy recommendations for City agencies to incorporate in the all future Digital Equity Strategic Plans.

The Project Team

This project was managed by Independent Consultant Cecile Puretz, and Andrea Aguinaldo, Program Analyst, under contract with Thriving in Place. Additional support was provided by the Department of Disability and Aging Services (DAS) and the Mayor’s Office on Disability (MOD).

The Community Advisory Coalition

In order to ensure the representation of a diverse cross-section of perspectives and lived experiences, we established a Community Advisory Coalition. The Community Advisory Coalition was composed of Deaf and disabled adults, veterans, people with lived experience of homelessness, transition-age youth with disabilities, and community leaders working in Disability and Aging organizations in San Francisco.

The Coalition met for two hours each month from February 2021 to July 2021, in addition to a final meeting to discuss policy recommendations once the data findings were completed. Each advisor was compensated \$400 for their time and expertise.

The Community Advisors included:

- Asim Brooks, Community Representative for ShelterTech
- Aurora Alvarado, Healthy Aging & Disability Resource Program Manager, Mission Neighborhood Centers (MNC)
- DeMian Williams, Disability Advocate, AccessSFUSD: The Arc transition program graduate, Employee at the California Academy of Sciences.
- Hannah Chadwick, Marketing & Communications Coordinator at Disability:IN
- Jason Chittavong, Mentor Coordinator for the Veterans Justice Court of San Francisco
- Jennifer Walsh, Ability Integrator at Community Living Campaign (CLC)
- Lana Nieves, Executive Director of Independent Living Resource Center of San Francisco (ILRCSF)
- Leif Pope, a self-identified trans, gay, disabled, Black + Indigenous youth from San Francisco
- Wendy, Coordinator for Depression and Bipolar Support Alliance (DBSA)
- Maia Scott, Accessible visual and performing arts instructor, City College of San Francisco, & Accessibility Analyst for Fable
- Nicole Bohn, Executive Director, San Francisco Mayor's Office on Disability
- Orkid Sassouni, San Francisco Public Library (SFPL) Deaf Services.
- Raenika A. Butler, Director of the Bayview Hunters Point Adult Day Health Care Center.
- Winnie Yu, Director of Programs & Administration, Self-Help for the Elderly



Launching A Bay Area-Wide Regional Digital Equity Consortium

The project team manager was instrumental in launching a Regional Digital Equity Consortium composed of CBO community leaders and disability and aging service providers. The consortium currently includes representatives from the following counties: Alameda, Contra Costa, Marin, San Francisco, Oakland, San Jose, Santa Clara, Sonoma, and San Mateo. The consortium met monthly for six months, and has served as a platform to exchange resources and advocate for digital inclusion across the Bay Area counties.

DATA COLLECTION METHODOLOGY

Background Field Research: Digital Inclusion Landscape

In the first phase the Project Team conducted an in-depth literature review of federal, state, and local policies related to digital equity. We also conducted an “Asset Mapping” of existing digital inclusion programs in San Francisco in order to understand current efforts to address gaps in access to technology. Additionally, we conducted 40 in-depth interviews with residents and community leaders in the disability and aging sector, and established partnerships with over 60 community-based organizations (CBOs). This research helped guide the creation of the survey and focus group questions.

Survey Research

A citywide survey was administered to understand the technology barriers and unmet needs of San Francisco residents with disabilities and older adults (60+). The survey was provided in six languages: English, Spanish, Chinese, Russian, Tagalog, and Vietnamese. The survey was also available in multiple accessible formats, including Braille, a large-print survey booklet, and as a phone-based survey.

Phone-based surveys were conducted by bilingual service providers in Spanish, Chinese, American Sign Language (ASL), and English. We also worked closely with Urban Jazz Dance Company Deaf Access Services who produced a fifteen-minute video introduction to the survey in American Sign-Language (ASL).

To promote participation in the survey, the Project Team distributed over 3,000 large-print printed surveys in Single-Room Occupancy hotels (SROs), meal distribution locations, affordable and supportive housing sites, veteran centers, TAY youth programs, as well as shelters and navigation centers for people experiencing homelessness.

Printed surveys were mainly distributed in the Mission, Mid-Market/Tenderloin, Bayview Hunters Point, Alice Griffiths, Treasure Island, Chinatown, Visitacion Valley, and SOMA.

The Project Team also partnered with the Office of Civic Engagement and Immigration Affairs (OCEIA) and Delivering Innovations in Supportive Housing (DISH) to engage 30 Community Ambassadors to help distribute printed surveys. Community Ambassadors are trained residents who provide outreach, information, and referral to low-income and unhoused residents. Each received a \$100 gift card. Neighborhoods surveyed included: Mid-Market/Tenderloin, Mission, SOMA, Bayview Hunters Point, Treasure Island, Visitacion Valley and Chinatown.

The survey focused on seven key areas:

1. Access to Internet, devices, and assistive or adaptive technology
2. Access to services during the COVID-19 pandemic
3. Technology barriers or challenges
4. Familiarity using internet and devices (digital literacy skills)
5. Use of technology for social engagement
6. Access to health information and services during the COVID-19 pandemic
7. Recommendations for improving access to technology

The survey also included 11 demographic questions to ensure that the City was reaching a representative sample of San Francisco residents. The demographic questions also allowed us to identify the intersections between technology access and race, income, disability, housing, age, LGBTQIA+ identity, and veteran status.

A total of 3,080 surveys were collected from March 27th through June 30th, 2021. 2,614 digital surveys and 466 print and phone surveys were collected. Eight of the 466 print and phone surveys had less than five answered questions and therefore were excluded from analysis. Out of the 3,080 surveys, only around 1,300 were confirmed to be from San Francisco residents.

To mitigate potential misrepresentation of intended research population due to zip code data limitations, the overall survey dataset was honed down to participants who either cited a San Francisco zip code or 00000 zip, or blank zip codes (00000 or blank zip codes were included to minimize the chance of excluding responses from survey participants who are San Francisco residents but were uncomfortable in sharing their zip codes) and reported having a disability and are older adults (ages 60+). Participants with one or more disabilities were determined by excluding survey respondents who cited being either a *Nondisabled/accomplice or ally*, or were uncertain (*Questioning*) about their disability status from the entire San Francisco resident dataset. Narrowing the 3,080 survey participants in this way yielded a 1,529 survey sample that approximately represented San Francisco residents with disabilities across the ages (under 18-60+). This survey sample consisted of predominantly older adults (55%).

The demographic profile of survey respondents were:

- *By Disability (Top 5)*
 - » 394 (26%) Mobility Disability
 - » 388 (25%) Chronic Pain
 - » 270 (18%) Deaf or Hard of Hearing
 - » 259 (17%) Mental Health (PTSD, depression, anxiety)
 - » 252 (16%) Blind or low-vision
- *By Age*
 - » 8 (1%) under 18
 - » 134 (9%) transition-aged youth (ages 18-24)
 - » 481 (31%) adults (ages 25-34 [203], 35-44 [105], 45-54 [94], 55-59 [79])
 - » 841 (55%) older adults age 60+
- *By Race/Ethnicity*
 - » 576 (38%) Asian/East Asian/South Asian/Asian-American
 - » 252 (16%) White/Caucasian/European-American
 - » 209 (14%) American Indian/Native American/Alaska Native
 - » 176 (12%) Latinx/Hispanic/Latin-American
 - » 114 (7%) Black/African-American
 - » 51 (3%) Native Hawaiian/Pacific Islander
- *By Income*
 - » 975 (64%) low-income households (less than \$20,000-\$49,000), most earn less than \$20,000 (510)
 - » 309 (20%) mid-high income households (\$50,000-\$160,000 or more), most earn between \$50,000-\$75,000 (131)
- *By Language (Top 5)*
 - » 755 (49%) English
 - » 304 (20%) Cantonese
 - » 146 (10%) American Sign-Language
 - » 119 (8%) Spanish
 - » 79 (5%) Mandarin

- *By Housing Status*
 - » 1,343 (88%) housed in either apartment rental, single-family home, affordable housing, living with friends or family, supportive housing, single-room occupancy (SRO) hotel, or assisted living or board and care home. Most (333) reside in apartment rentals.
 - » 69 (5%) were experiencing houselessness (unhoused or residing in either navigation centers or overnight shelters), most (39) were unhoused
- *By San Francisco Zip Code (Top 10)*
 - » 94102 (141, 9%) Western Addition / Tenderloin / Hayes Valley / Mid-Market
 - » 94112 (70, 5%) Outer Mission / Excelsior
 - » 94107 (60, 4%) Potrero Hill
 - » 94122 (55, 4%) Sunset
 - » 94108 (49, 3%) Chinatown
 - » 94103 (48%, 3%) SOMA
 - » 94110 (46, 3%) Mission
 - » 94121 (44, 3%) Richmond
 - » 94116 (40, 3%) West Portal
 - » 94134 (37, 2%) Visitacion Valley
- *By Veterans*
 - » 345 (23%)

Focus Group Research

Nine semi-structured focus groups were conducted via Zoom group conversations (42 participants total) with transition-age youth with disabilities (18-24), veterans, adults with disabilities, older adults in the Latinx and Chinese communities, disabled residents of supportive housing (SROs), people experiencing homelessness, and Deaf adults. Focus groups in the Latinx and Chinese communities were conducted in their native languages by bilingual facilitators. Each participant received a \$100 gift card, and was recruited through emails and outreach led by community partners. In addition to asking about the unique barriers they've experienced around technology, focus group participants were to share recommendations of what they would like the City to prioritize in order to bridge the digital divide.

In-Depth Community Stakeholder Interviews

Program Manager, Cecile Puretz, conducted 40 in-depth Zoom interviews with leaders of local disability and aging service organizations. Leaders were asked to describe the biggest technology barriers and opportunities faced by people with disabilities and older adults in San Francisco during the COVID-19 pandemic. They were also asked to propose policy recommendations that they would like to see implemented.

Organizations interviewed included: San Francisco Senior and Disability Action (SDA); Golden Gate Regional Center (GGRC), Curry Senior Center, Tenderloin Housing Clinic (THC), St. Vincent de Paul, Family Caregiver Alliance, Creativity Explored (CE), LGBTQ+ Veteran Health Center, South of Market VA Clinic, Veteran Justice Courts Program, Openhouse, Dr. George W. Davis Senior Center, Bayview Senior Center, Tenderloin Community Business District (TNCBD), Shanti Project (LGBTQ+ Age and Abilities Support Network, LAASN), Larkin Street Youth Services, The Arc of San Francisco; Longmore Institute on Disability at SF State; UCSF Center for Vulnerable Populations; UCSF Department of Gerontology, Independent Living Resource Center of San Francisco (ILRCSF); LightHouse for the Blind and Visually Impaired; St Anthony's Technology Lab; Delivering Innovations in Supportive Housing (DISH); Community Forward SF; Pomeroy Recreation and Rehabilitation Center; Support for Families of Children with Disabilities; Self-Help for the Elderly; Bayview Senior Services; SOMA Pilipinas; Mission Neighborhood Centers; Samoan Community Development Center, Access Services at San Francisco Public Library.

DATA ANALYSIS METHODOLOGY

Community needs evaluation was centered on the following questions:

- What are the technology barriers and needs of San Francisco residents with disabilities and older adults during COVID-19?
- Are there differences in digital needs, barriers, and experiences based on disability, age, race, income, language, housing and access to devices and internet?

Survey, focus groups and community leader interviews were evaluated through a quasi convergent mixed-methods analysis approach. Data was first individually analyzed, then the results were compared to evaluate areas of similarities, differences, and connections to gain a more comprehensive understanding of community input.

Focus group and community leader interview transcripts and recordings were systematically coded by categories, then linked to larger themes within groups and across responses.

Survey data analysis was conducted in two phases: In the first phase, quantitative survey questions (20 total) were studied to identify overall trends and variety in responses. The second phase further explored four survey questions:

1. Prior to COVID-19, did you use a public computer lab as your primary internet source (like a library, community center, or tech lab)?
2. Have you received healthcare or mental health services through appointments over the phone or video (telehealth) during COVID-19?
3. Are you familiar with the term Assistive Technology (AT)?
4. Do you currently use any Assistive Technology?

In-Depth Analysis of 4 Key Themes

These four questions were identified due to interest of varying stakeholders in exploring access to internet prior to the pandemic; the role of technology in receiving telehealth services; and access and challenges to AT, particularly in the contexts of disability, age, race, income, language, housing and access to devices and internet.

Whereas in the first phase, the purpose was to identify general trends and variety in responses, the second phase was used to not only explore topics of interests, but also investigate the technology needs, barriers, and experiences of individuals who are at the intersection of varying vulnerabilities to digital inequities (for instance, poverty or homelessness). Demographic information (primarily age, disability, income, race, language, and housing status) was used to analyse questions by group responses. Group responses were then compared with overall results to study disparities in needs and challenges. In this process, input even from groups with small representation per survey question were considered, as long as the total number of respondents were 50. The goal was to provide equitable weight to respondent input, regardless of frequency.

RESEARCH LIMITATIONS

Small sample sizes are the primary limitations of this research. Qualitative (focus group and one-on-one interviews) information was provided by around 40 to 60 individuals. Quantitative data represented around 1,500 survey participants, which only accounts for 2% of the approximately 94,000 San Francisco residents with disabilities³⁷. Slicing of survey data by groups yielded even smaller samples. Moreover, survey results were not tested for statistical significance to provide weight even to the responses of groups with small representation from overall counts.

³⁷ Statistics informed by the San Francisco Department of Disability and Aging Services. [Disability in San Francisco](#) .Web. Accessed July 31, 2021

Potential bias in qualitative evaluation and participant selection cannot be ruled out. Although the analyst followed a systematic coding process, the interpretation and categorization of data was still partly subjective. The focus group and interview participants were not selected randomly, which provides room for selection partiality.

Finally, only 4 of the 20 quantitative survey questions were disaggregated for more in-depth analysis. Furthermore, zip code data limitations complicated the process of accounting for a survey sample that exactly mirrored San Francisco residents, while the decision to focus on survey participants who reported a disability excluded nondisabled allies who may also be related to persons with disabilities³⁸. Therefore, the survey conclusions reported here mostly cover broader trends from an approximate representation of the intended research population. Survey data collected in this Community Needs Assessment will be publicly available, we hope that it will be useful for further research.

³⁸ Overall, there were 27 nondisabled allies who cited a San Francisco, 0000, or blank zip code and reported a disability. These individuals may be caretakers of persons with disabilities.



Summary of Key Findings

In this section we begin with a summary of key findings and then provide more detail from our qualitative and quantitative research. Based on focus groups, one-on-one interviews, and survey data from our research with San Francisco residents with disabilities and older adults, we identified several key findings:

1. **Access to technology was a vital resource in receiving various social services and information, as well as maintaining social connections during the pandemic.** A significant majority (64%) reported that technology was a barrier in receiving needed pandemic services. Technology was a vital means of receiving COVID-related information and needed public services, particularly health, food, and housing assistance. Four of the top five primary sources used to access information about services during COVID-19 were technology-based (telephone calls, television, social media and text messages). Sixty-two percent (62%) reported attending online social activities. Most (27%) attended a social activity once a month. Without adequate technology resources, many residents felt they would be “left behind” and not be able to access critical services, information and support.

Residents living in SROs or experiencing homelessness reported that having access to a device and internet connection allowed them to connect to friends and caseworkers; access medication; attend AA and mental health support groups; and access other social services. For individuals experiencing street homelessness, having devices and the internet were especially important in checking an online tracking system to find 90-day beds in shelter. For transition-age youth (ages 18-24) experiencing chronic homelessness, phones were important in receiving housing and employment services, as well as staying connected to family and friends.

For justice-involved veterans, technology was cited as an essential tool in navigating the Veterans Justice Court system, attending court dates, hearings, and communicating with caseworkers.

2. **Affordability, unreliability, and concerns about online security were reported to be primary barriers to accessing the internet.** Although there were a variety of technology barriers, the top five challenges centered on affordability, internet reliability and concerns about online safety/security.

The top five barriers to internet access were:

- unaffordable cost of high-speed internet (28%);
- unaffordable cost of device (27%);
- insufficient smartphone data (22%);
- unreliable internet connection (21%);
- and concerns about online safety/security (19%).

Across focus group participants, cost of internet service was pointed as a key technology challenge, especially for multiply-marginalized individuals.

Residents of Treasure Island and Mission neighborhood reported unreliable and slow internet structure. According to focus group participants, Treasure Island operates off an old electricity grid that causes *“an obscene amount of power outages”*, and may account for unreliable internet access on the Island. Concerns about slow internet were also prevalent in the Latinx older adults living in the Mission neighborhood. One participant reported that, *“I pay for the Internet but, according to the company, even if I wanted a faster speed, they say that speeds depend on zones. According to them, the area where I live can’t have faster Internet.”* This statement reveals a troubling issue that may point to patterns of “digital redlining.” Limitations in survey zip code data complicated further study of focus group reports on unreliable internet. However, this topic, specifically the potential reality of digital redlining, is a serious technology barrier and cause of digital inequity that warrants attention and further research.

3. **During the pandemic, receiving medical services through telehealth (phone and video) was vital and presented some challenges.** A large majority, 67%, of survey respondents reported receiving medical services through telehealth.

Overall results to the question, *“What challenges do you have in accessing medical services using video or phone visits (telehealth)?”*, showcased that around 20% of survey respondents cited that barriers included: no access to computer, smartphone, or assistive or adaptive technology (AT).

The need for telehealth training appeared in survey and focus group data. Sixteen percent (16%) of survey respondents reported needing more telehealth training. Focus group participants across ages indicated lack of knowledge or education in navigating telehealth technology: Older adults cited needing classes on using Zoom to access telehealth and transition-age youth reported having trouble using health care portals.

Results to the question, *“During the COVID-19 pandemic have you missed any important medical appointments or delayed care or treatments?”*, showed that a majority, 57% of respondents reported missing important medical appointments or delayed care or treatments during the pandemic. This reveals a troubling public health issue that needs further attention, funding, and research.

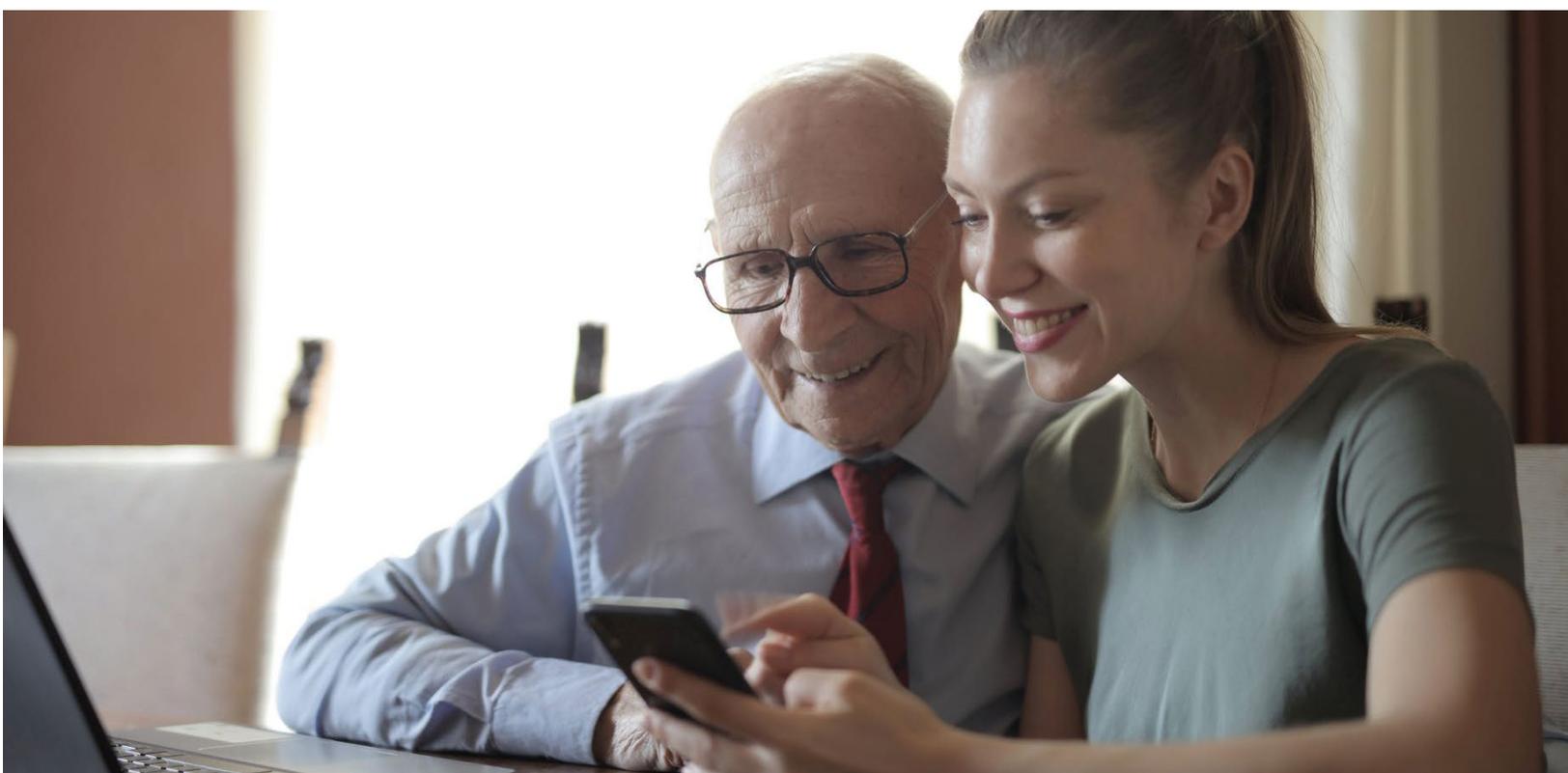
4. **Receiving telehealth services was particularly difficult for the Latinx/Hispanic/Latin-American community.** While overall survey data showcased that 67% of total survey respondents received medical services through telehealth and 30% did not, data from people whose preferred language is Spanish revealed that: 50% reported *not* receiving telehealth services and 38% cited that they did. This further showcases that Latinx residents faced acute barriers to telehealth services during the pandemic.
5. **There are digital challenges that go beyond access to devices and the internet.** Lack of accessibility of digital content and services was a key issue that was raised by focus group participants. For instance, some Deaf focus group participants reported that though they have access to the internet, often internet speed is insufficient for making videophone calls (an essential form of communication for the Deaf community) because the videophone system requires a minimum of 256K of streaming speed to function correctly. Moreover, a number of veterans, older adults, transition-age youth and adults with disabilities reported that they were not able to access certain services due to accessibility barriers and not enough assistive technology (AT).
6. **Providing free or low-cost assistive or adaptive technology (AT) is vital for ensuring digital equity.** Only a slight majority, 51% reported using AT. As for AT services needed, overall results show low-cost AT as the primary need (53%), followed by training (45%), then information about AT options (39%), and lastly, access to free or low-cost repairs (30%).
7. **The need for AT services (such as accessible AT equipment and education) are greater for people with disabilities who are:** older adults (ages 60+); experiencing either chronic pain or mental health disability; low-income (less than \$20,000); living in single-room occupancy (SRO) hotels; Black, Latinx, and AAPI communities; monolingual (Spanish or Cantonese); and individuals who lack access to devices and internet.
8. **Public computer labs such as public libraries, community centers, or tech labs served as important sources of internet for the disability community prior to the pandemic, particularly for Transition-age youth (ages 18-24), veterans, and people experiencing homelessness.** 67% of transition-age youth reported using public computer labs. 82% of people residing in assisted living/care homes or those experiencing homelessness use public computer labs. 82% of veterans also reported using computer labs as primary sources prior to the pandemic.
9. **The importance of safe, secure and accessible public computer labs in providing access to free technology services for residents with disabilities and older adults.** Not only are public computer labs primary sources of free internet, they also serve as safe spaces to use devices. *"Safety became an issue because I didn't want to bring my devices outside and then try to use them with this handheld wheelchair. And it's so dangerous you know...I have chains on everything I own. So there used to be safe places to go like the Technology Center at St. Anthony's, but they're all closed with COVID you know."* (Older adult living in a Single Room Occupancy Hotel).

10. Customized digital literacy services are necessary for a community with varied digital knowledge and experience. Survey data pertaining to the need for digital literacy indicated that there was a wide range of familiarity with digital literacy skills. Survey results showed that computer technology training appeared within the top five most needed services during the pandemic.

Focus group data also showcased a range in digital literacy needs and experiences. Digital literacy needs varied from basic operations of devices and the internet to using specific apps, like Zoom. The reasons for gaps in technology knowledge were also diverse. For some individuals, lack of access to technology led to little or no digital literacy. For instance, focus group participants with a history of being disconnected to systems of care (individuals with a history of chronic homelessness or justice-involved) reported incredible hardships in using technology, as extreme as not even having any idea of what WiFi is. Reasons for gaps in digital literacy could also stem from inaccessibility to affordable, culturally aware trainings. For example, older adults whose primary language is either Cantonese, Spanish or Samoan emphasized the importance of language access in providing digital education.

QUALITATIVE RESEARCH: FOCUS GROUPS AND INTERVIEWS

To supplement the survey research, 9 focus groups were conducted with a total of 49 participants to provide a more in-depth analysis on the technology barriers faced by residents. Through the help of local community-based organizations, we recruited participants and engaged community leaders in facilitating the focus groups. To compensate participants, we provided \$100 gift cards to 49 participants. We used 12 simple prompt questions to promote open discussion within the group.



Community	Partner Organization	Participants
Latinx Older Adults	<ul style="list-style-type: none"> Mission Neighborhood Center (MNC) 	7
Chinese Older Adults	<ul style="list-style-type: none"> Self-Help for the Elderly 	6
Adults with Disabilities	<ul style="list-style-type: none"> ILRCSF Longmore Institute on Disability Mayor's Office on Disability SF Senior and Disability Action (SDA) Disability Programs and Resource Center, San Francisco State University 	6
Deaf and hard of hearing	<ul style="list-style-type: none"> SFPL Deaf Services Orkid Sassouni Urban Jazz Dance Company (UJDC) Deaf Counseling Advocacy & Referral Agency (DCARA) California School for the Deaf (CSD) Deaf Queer Cultural Center Deaf Blind Services at Lighthouse for the Blind 	5
Transition-age youth with disabilities	<ul style="list-style-type: none"> AccessSFUSD SFUSD Transition Partnership Program (TPP) 	6
Veterans	<ul style="list-style-type: none"> Veterans Justice Courts 	6
Residents of SROs and people experiencing homelessness	<ul style="list-style-type: none"> Delivering Innovation in Supportive Housing (DISH) Community ForwardSF ShelterTech Office of Civic Engagement & Immigration Affairs (OCEIA) 	6
Disability and Aging Service Providers and Advocates	<ul style="list-style-type: none"> Pomeroy Recreation Center Delivering Innovations in Supportive Housing (DISH) Community Forward SF The Arc of SF One Treasure Island Samoan Community Development Center Bayview Senior Services 	7

In Their Own Words: Focus Group Participants

The following are summary snapshots from the various focus groups:

RESIDENTS OF SINGLE-ROOM OCCUPANCY HOTELS (SROS) AND PEOPLE EXPERIENCING HOMELESSNESS:

“I don’t know the definition of WiFi or hotspot or computer jargon. I’ve never seen anything on the news...like you’re supposed to just know what it means. I feel like I should know, but I don’t.”

- San Francisco resident living in single-room occupancy [SRO] hotels

“Safety became an issue because I didn’t want to bring my devices outside and then try to use them with this handheld wheelchair. And it’s so dangerous you know...I have chains on everything I own. So there used to be safe places to go like the Technology Center at St. Anthony’s, but they’re all closed with COVID you know.”

- Older adult resident living in SRO, who previously experienced homelessness

“We need classes to help us learn how to use and get these services so we can keep up before we are left behind.”

- Adult with disability experiencing homelessness

- Residents living in SROs and people with experience of homelessness reported that having access to a device and internet connection allowed them to connect to friends and caseworkers; access medication; attend AA and mental health support groups; and access social services.
- Safety was another major concern that was raised in the focus group. For those with smartphones and tablets, experiencing homelessness or living in SROs made them more at risk of having those devices lost or stolen.
- A number of participants reported that there needs to be more safe and accessible spaces for people to charge their phones, store them safely in a lock box, and access the internet and computers, with trusted staff members who can offer help.
- The need for more digital skills training was another core theme that was raised by participants. Many relied on Comcast, Xfinity or AT&T stores to receive technical support around using their devices or internet.

- SFServiceGuide³⁹ was cited as a helpful resource for people experiencing homelessness in navigating resources around technology. SFServiceGuide is an online directory that provides people experiencing homelessness with access to information on how to obtain a smartphone, tablet, or computer.
- For people living in SROs, social isolation was brought up as a core theme during the COVID-19 pandemic. One participant shared her experience: “I didn’t reach out to my community because I’m in recovery and there was a lot of drug use in the SROs and I didn’t have the option to have my kids come visit me so that was really hard and there was a lot of drug use in the SROs. For 6 months...I was very depressed and I suffer from depression and it was hard.”
- One participant who had experienced homelessness shared that it can take up to 6 weeks to get access to a 90-day bed in a shelter. In order to access a bed, unhoused people need to check an online tracking system every day in order to not miss out on their opportunity.

VETERANS:

“I just got out of prison. I get out into this society. They didn’t have phones when I went in. Now everybody’s got one, it seems like everybody’s completely centered on it and attached to it and everything revolves around the phone and here I am, I don’t know how to even use the...thing.”

– Older adult veteran focus group participant

“My thought is that we are woefully and shamefully behind. The people who need the most help are the people who are least accessible to this technology.”

– Adult veteran focus group participant

- The main barrier reported by veterans was the unaffordable cost of internet, lack of data on their smartphone plan, and the lack of digital skills training classes.
- Some veterans reported that while the Veterans Administration (VA) provides qualifying low-income veterans with an iPad with limited cellular data per month, the device is limited and cannot access applications for other programs such as Zoom. The main application is mostly VA Telehealth for video conferences with their medical appointments.
- Many veterans reported that they were unaware of this free iPad resource, and that the process of obtaining an iPad was very challenging and not accessible.

³⁹ For more information on [SF Service Guide](#), a partnership between ShelterTech, Mayor’s Office on Housing and Community Development (MOHCD) and the Justice and Diversity Center.

- Using telehealth was a major barrier that was reported by veterans. One veteran reported that he hasn't been able to access healthcare information due to lack of knowledge of how to use telehealth portals.
- Veterans also reported that the VA does not currently provide any digital skills training, and that they often rely on AT&T or T-Mobile stores to provide technical assistance when they have a problem or question about their devices.
- For justice-involved veterans, technology was cited as an essential tool in navigating the Veterans Justice Court system, attending court dates, hearings, and communicating with caseworkers.
- There was broad interest in learning about Assistive or adaptive technology (AT) resources, and what options were available to veterans. One veteran shared how having Assistive technology like a screen-reader or speech-to-text was essential to accessing online content, emailing, and for connecting socially.
- Safety and security of free WiFi networks was also brought up as a main concern. A number of veterans expressed not trusting unsecured networks, and that they preferred not using free WiFi in public spaces (such as on MUNI or BART) out of fear of fraud and having their personal information stolen.

DEAF AND HARD OF HEARING COMMUNITY:

"My wish is that ATT company hires some customer rep with ASL skills. It usually takes me too long to get in touch with someone to help me fix issues with ATT providers."

- Deaf older adult focus group participant

"148 dollars is too expensive for me as a single mother. I wish I could afford 40 to 50 dollars a month which is easier on my budget as I receive limited income."

- Deaf older adult Focus group participant

- Focus group participants and one-on-one interviews with Deaf community members cited that the COVID-19 pandemic has intensified communication barriers for Deaf and hard of hearing people, particularly in accessing medical services and information about essential services.
- The barrier of cost for internet services remains a critical issue for the Deaf community, particularly for those who are low-income or living in geographically underserved areas of San Francisco.

- The majority of focus group participants cited that cost of internet service was the biggest barrier, especially for Deaf low-income residents living in supportive or affordable housing. One participant paid \$300 for high speed internet, the other paid \$100, and the third person paid \$148. All three expressed that they had very little choices in choosing internet providers, and that they were not satisfied with the quality of the internet service reliability, speed, and cost.
- The majority of Deaf focus group participants reported using videophones (Sorenson and Purple VRS). In order to use a videophone, Deaf residents need a videophone device, an Internet connection, and a screen to connect the videophone. Having access to a videophone was cited as essential for calling friends and family, making appointments, online banking, and accessing essential services.
- All participants reported the critical importance of high-speed internet for making videophone calls. They cited that high speed internet was the only option because the videophone system required a minimum of 256K of streaming speed to function correctly.
- One Deaf participant who lives in affordable housing on Treasure Island reported that there is unreliable internet access on the Island, and that the phone lines are very old and outdated. There is also little to no competition for internet service providers (ISPs), since Comcast retains exclusive rights to the entire Treasure Island internet infrastructure. In order to access the internet, the participant had to get Comcast to use their videophone.
- Numerous participants reported that they would like to see Video Remote Interpreting (VRI) included in banking, food, and medical services. VRI stands for Video Remote Interpreting which refers to reaching a language or ASL interpreter over a videophone call. Many banking services and grocery stores do not have in-person American Sign Language interpreters.
- According to Deaf advocate Orkid Sassouni, VRI is paid services while VRS is free and is free to Deaf and hard of hearing people to use. If a Deaf person tries to use the VRS onsite with a person talking, they will permanently lose the VRS services because it's not allowed. It has to be done alone with no person in the same room. Lack of flexibility of use in the VRS system creates a real barrier.
- In an in-depth interview with Deaf Blind Specialist at the Lighthouse for the Blind and Visually Impaired, it was reported that due to COVID-19 physical distancing guidelines and the widespread shift to virtual modes communication, many DeafBlind people who rely on tactile communication⁴⁰ have been disproportionately left behind.
- Another theme that arose with staff at Lighthouse for the Blind was the challenges of providing virtual training on assistive technology, internet, or devices to blind, low-vision, and DeafBlind individuals during the COVID-19 pandemic.

40 Perkins School for the Blind. [Q&A How Pro-Tactile American Sign Language-PTASL-is changing the conversation](#). Accessed July 23, 2021.

- One participant cited using Zoom, but experienced barriers using the application because of lack of ASL and closed captioning. They also cited that lack of familiarity with Zoom were barriers.

TRANSITION-AGE YOUTH WITH DISABILITIES (18-24):

“Lately during this semester on Zoom it has been really tough for me personally on the WiFi because it’s really frustrating to communicate with my teachers and I don’t want to miss even one assignment... I wish the WiFi would be a little bit faster.”

- Transition-age youth participant in focus group

“Sometimes making doctor’s appointments is super stressful and complicated to sign up online. Sometimes, the doctors ask too many questions that I don’t know how to answer.”

- Transition-age youth participant in focus group

- Transition-age youth expressed experiencing barriers to employment and education due to lack of reliability of their WiFi connection. They reported experiencing challenges showing up for work on time, communicating with teachers, or accessing GED classes due to unreliable internet connection.
- The majority of transition-age youth and teachers who participated in the focus group reported that City College of San Francisco (CCSF) and the Disabled Student Programs and Services (DSPS) provide vital access to technology resources and assistive technology.
- TAY students also reported that they experienced significant barriers in accessing telehealth and having online medical appointments with healthcare providers. They cited that the process of signing-on to KP.org and other online health portals was complicated and confusing.
- Transition-age youth also cited needed school supplies and laptops. While they reported that SFUSD provides free Chromebooks to all K-12 and transition-age students, they are required to return the Chromebook when they exit the transition-age program.

SERVICE PROVIDERS:

“During the pandemic, our center was closed, one of the seniors couldn’t connect with the Internet. I stepped in and helped him out and he made it back on the Internet. So it’d be great if all seniors have better knowledge of technology, or each senior center can provide a free computer station or free tech resources for seniors to use.”

- Service Provider in the Older Adult Chinese community

“What we need is Citywide internet for everybody.”

- Service Provider Focus Group Participant

“We serve over 250 clients and many don’t have internet. There’s low cost internet but even informing them about it without an email address is difficult.”

- Unhoused Community Advocate and Service Provider Focus Group

“In my community we’re always worried about losing things or selling things, but still tablets are better than computers if you’re using risk mitigation here.”

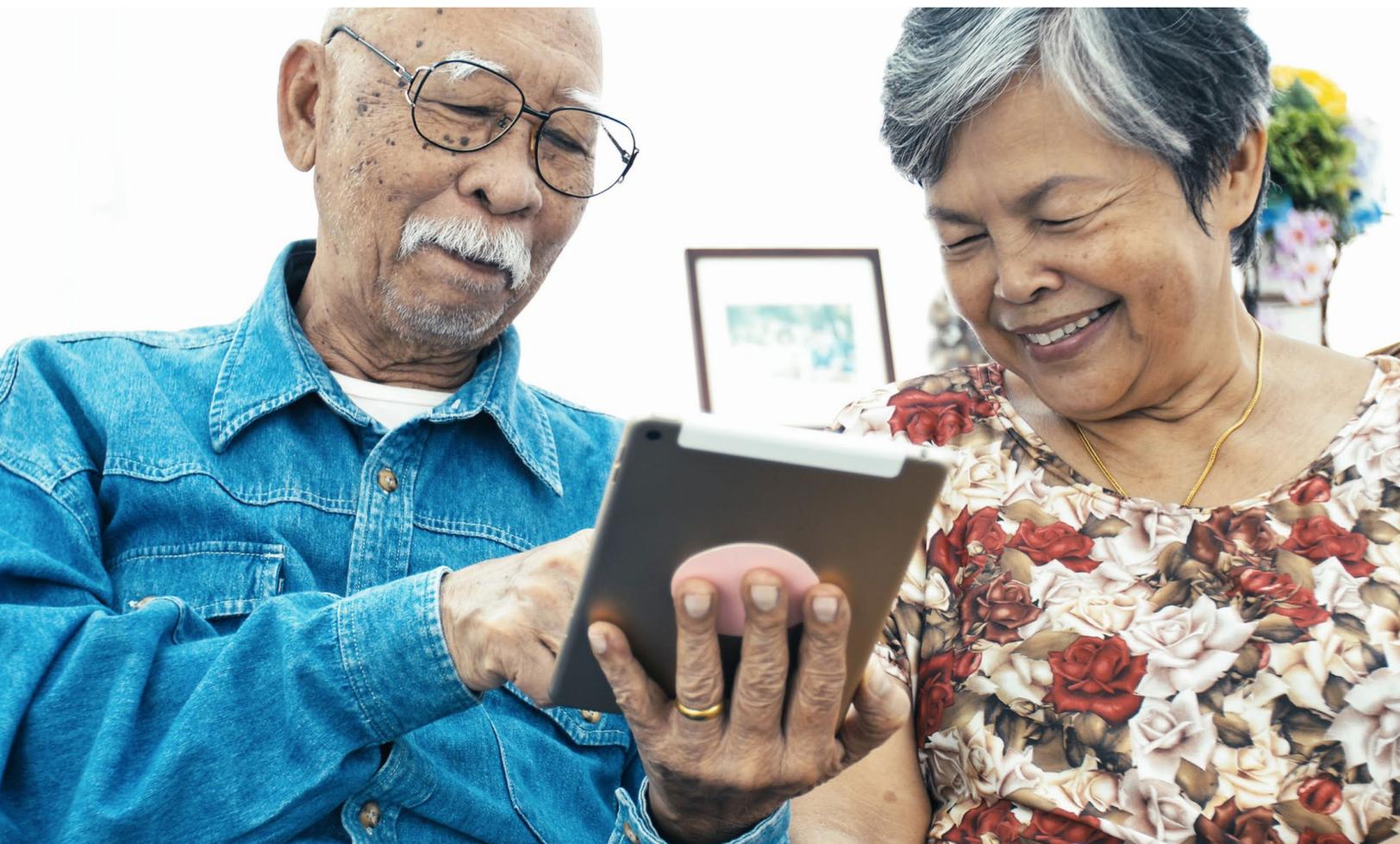
- Unhoused Community Advocate and Service Provider Focus Group

“A lot of our folks are dealing with mental health and depression, so piled up notifications can lead to more anxiety and avoidance around technology.”

- SRO Service Provider Focus Group Participant

- Across the board, service providers cited that core barriers to technology included the lack of digital skills training as well as financial barriers to obtaining internet or devices.
- Service providers working with people experiencing homelessness reported that residents need access to central and safe hubs for charging their devices, as well as portable chargers and printers.
- Service providers also noted that a valuable resource for increasing access to technology for residents living in SROs and affordable housing would be to implement “Micro tech hubs in every building with a tech case manager to help orient people.” (Service Provider participant in focus group)

- Service providers from Larkin Street Youth Services, the city’s largest nonprofit working to end youth homelessness, reported that for many youth experiencing chronic homelessness, phones are an important part of their survival in accessing resources, housing, employment, and staying connected to family and friends.
- The majority of service providers reported that many of the seniors and people with disabilities they serve do not have access and cannot afford the technology devices and internet required to utilize Zoom to join online social activities and locate information or resources they need.
- Outreach and communication was another core theme raised in the focus group with service providers. Many emphasized the need for grassroots street-level outreach to inform residents of technology resources and services. They mentioned the importance of “reaching people where they are at” and conducting outreach through food pantry bags, flyers, door hangings, bulletin boards in SROs, and door-to-door outreach. “Friendship calls” and texting were other methods that service providers connected with harder-to-reach residents.
- A service provider working in Treasure Island reported that the island also operates off an old grid, so there are an obscene amount of power outages, which is a constant challenge especially when people are relying on medical devices.
- Digital training using public radio or SFGOV.TV were also mentioned as potential ways for making digital skills education more accessible to residents.



ADULTS WITH DISABILITIES:

“I’m a low vision user. The most important thing for me is having a low vision keyboard. You know, they have big buttons for people with low vision, for people with disabilities and seniors. I have a portable one. But if there are stations put up across the City that would be very helpful.”

– Focus group participant

“I was never familiar with the term Assistive Technology until I joined this focus group. I see how vast it is because it’s stuff I would never link to disability or disabled or assistive tools, so now I’m more familiar with it. I mean I’ve always used these items.”

– Focus group participant

- A number of participants cited the vital importance of organizations that provide free or low-cost assistive technology and accessible computer stations (AT) such as the Independent Living Resource Center (ILRCSF) Assistive Technology Lending Library and the SFPL Library for the Blind and Print Disabled. They recommended that the City should implement an “Office of standardization of accessibility around digital products and services.”
- A number of participants also cited that having more AT and technology loaning libraries would be a greatly needed resource for residents with disabilities and older adults.
- Challenges using telehealth was another core theme that was raised by a number of participants.
- The importance of In-home supportive services (IHSS) was another core theme that was expressed by a number of participants. “For those of us living with disabilities and need people to come see you and help you feel safe. I mean just the presence of In Home Services make you feel safe.” (focus group participant)
- Mutual aid around technology was another common theme. Many people with disabilities reported sharing resources with neighbors and friends on how to troubleshoot through tech problems with their devices.
- Another theme that was consistently raised was the lack of a centralized hub for accessing information about free or low-cost assistive technology and digital accessibility resources for Deaf and disabled residents.
- One recommendation was to increase training for non-disabled service providers around understanding the digital accessibility needs of people with disabilities, and to provide more accessible computer stations in libraries, community centers, and public tech hubs.

ASIAN-AMERICAN OLDER ADULTS:

"I really hope there are more workshops and training for seniors to learn using Zoom. It will be very helpful for all of us. There is a great need for this. We can use this to chat with relatives who live very far away from us."

- Focus group participant

"The good thing about the technology is that we can receive the news very quickly. And we don't have to wait that long to be informed, especially the negative news. Especially with the Asian hate crimes, we can know the hotspots and the dangerous spots that we should avoid, unlike those who don't have access to technology and would not even know their happenings."

- Focus group participant

- Across the board, older adults in the Chinese community advocated for free or low-cost internet and iPads. Affordability was cited as a major barrier. One older adult emphasizes this point: "I'd like to suggest the government give away free or discounted iPads for seniors, this can encourage seniors like us to form more contact with technology devices. I am happy to see what the government has done for us, but I think they can do better, at least give away free iPads so that we can be more connected with society."
- The 3 top needed resources reported by focus group participants included: 1) Access to low or no-cost technology devices/reliable internet. 2) More in-language tech help/support. 3) More in-language information/resources/classes.
- The majority of older adults cited the importance of relying on family (adult children) and friends in providing technical assistance and help in using their internet or devices.
- Safety was named as a critical need, especially in light of recent events with anti-Asian violence that has disproportionately impacted Asian older adults in San Francisco. Having access to a smartphone and reliable internet connection can provide life-saving information.
- The majority of older adults also felt that the City should provide more financial assistance to non-profit organizations like Self-Help for the Elderly to offer more digital literacy classes. One participant shared this recommendation: "I think the government should distribute some money for some organizations and start lessons on technology, which could teach seniors deeper knowledge of technology so that we seniors can connect with each other more closely." (Chinese older adult focus group participant)
- The need for assistive technology (AT) was another theme that was raised. Many older adults reported the need to enlarge fonts on their screens due to low-vision.

- The majority of older adults cited that they would like more free computer classes to learn Zoom so they can participate in more social activities and access telehealth to communicate with healthcare providers.
- Another key recommendation proposed by older adults was to increase the number of free public WiFi hotspots in the City of San Francisco, focusing on libraries.

PACIFIC ISLANDER OLDER ADULTS AND TRANSITION-AGE YOUTH:

“Culturally we are all about fellowshiping, seeing each other, we are family. We try to make sure we are always contacting our seniors and TAY populations. Language access is a big issue. That’s not equity, what about our Samoan community? We need cultural approaches to be purposeful and strategic in supporting families to feel safe and loved. Everyone needs to be recognized.”

– John Iesha Ena, Director of Programs, Samoan Community Development Center, SCDC

- Lack of language access in Samoan was cited as a major barrier for older adults, people with disabilities and transition-age youth in accessing needed services, programs and information in the Pacific Islander community in San Francisco. Service providers in the Pacific Islander community reported that greater attention and resources need to be allocated to promoting language access among Pacific Islander communities.
- Language in City departments has historically not been accessible for many Pacific Islander older adults. It was reported that there are very few City services and programs that are offered in Samoan or Tongan, and that greater language access is needed for digital literacy classes and information about free or low-cost technology options. Social workers from Samoan Community Development Center (SCDC) assist community members with Zoom meetings with City agencies in case they need language translation or information about policies and programs.
- The totality of surveys were conducted by staff of the Samoan Community Development Center (SCDC) as phone-based surveys and offered translation in Samoan to older adults. It was reported that many older adults would not be likely to complete a digital survey due to lack of digital skills or access to the internet or devices.
- Outreach in the Pacific Islander community was reported to be conducted mainly through social media PSAs in Samoan.
- Pacific Islander transition-age youth (TAY) face acute barriers to accessing technology education and resources. Investing additional resources in programs such as the SCDC TOA program “Transforming Our Attitudes” would be greatly beneficial. It was reported that there needs to be

“more spaces for safety and training” for TAY youth in the Pacific Islander community.

- Many Pacific Islander older adults felt disconnected and socially isolated during the pandemic, and felt intimidated by technology.
- Many Pacific Islander communities reside in low-income housing in geographically under-resourced neighborhoods in District 10 of San Francisco (such as Visitacion Valley, Alice Griffiths/ Double Rock, Portero/Aleman, Potrero Hill, Bayview Hunters Point), where it was reported that there are lower rates of internet adoption and reliable high-speed internet.
- Culturally tailored strategies could significantly enhance access to technology resources in the Pacific Islander community. Working in partnership with trusted community leaders and organizations such as the Samoan Community Development Center is essential to addressing issues of digital inequality.
- Tech opened up many possibilities for organizations like SCDC to offer virtual programs on Zoom in partnership with organizations serving TAY populations in other cities across the country.

LATINX OLDER ADULTS:

“I think we need a program to donate tablets to low-income people. But also the Internet needs to be made accessible, because what’s the use of having a device if you don’t have money to pay for the Internet?”

- Latinx older adult focus group participant

“I’d like to receive more training [...] There are people who live totally alone and they don’t have anybody to help them. And we need to get training for our own benefit, to improve our way of life and be able to learn more about technology.”

- Latinx older adult focus group participant

- Across the board, cost was a barrier that was reported by the majority of Latinx older adults, and that the City should create more programs to distribute free or low-cost internet and devices. Internet service providers should create more discounted internet options for seniors.
- There was broad interest in learning or attending computer and internet skills classes taught in Spanish. All expressed deep appreciation for the support of Mission Neighborhood Center (MNC) in assisting them in learning technology and feeling less socially isolated during the pandemic. “I

have grown internally. I used to be a very introverted person. I never communicated with people. I don't like to try to make friends, but thanks to technology and your classes, I have met many people." (Latinx older adult focus group participant)

- Inadequate internet service in the Mission neighborhood was another theme that was raised. One participant reported that they would like higher-speed internet, but the internet service provider (ISP) said that they could not provide it in their geographical area (Mission Neighborhood). This reveals a troubling issue that may point to patterns of "digital redlining." "I pay for the Internet but, according to the company, even if I wanted a faster speed, they say that speeds depend on zones. According to them, the area where I live can't have faster Internet." (Latinx older adult focus group participant)
- Concerns around social isolation of Latinx older adults was also raised as a key issue. A number of participants emphasized the importance of increasing outreach to older adults who live alone and have limited access to technology.

Survey Results

The following findings reflect the responses of a 1,529 survey sample that closely represented San Francisco residents with disability across the ages. A majority were older adults (55%). Overall survey answer rate (the number of individuals that provided responses) per question ranged from 82% to 98%, with a minimum of 1,252 total respondents to a maximum of 1,503.

Findings report on the seven survey sections centered on digital access, needs and barriers during the pandemic: 1) access to devices and internet; 2) access to services; 3) technology barriers or challenges; 4) familiarity with using internet (internet digital literacy); 5) social connections; 6) access to health information and services; and 7) access to assistive or adaptive technology.

SECTION 1: Access to devices and internet

By a significant majority, smartphones (68%) were cited to be the most accessed device. Fourteen percent (14%) reported not having any access to devices. Access to the internet was much more varied than device accessibility. The top answer was paid broadband internet (35%). Followed by a close distribution (slightly greater or equal to 20%) of answers between public WiFi hotspot (24%), smartphone internet data plan (23%), paid discounted internet (23%), and free internet (20%). Ten percent (10%) reported not having access to any internet. Based on this information, it could be concluded that having no access to devices or the internet was not a primary need for the survey population.

Prior to the pandemic, the following groups relied 15 to 30 percent more on public computer labs as primary internet sources than the overall survey respondents (52%): transition-aged youth (18-24); veterans; and individuals experiencing homelessness or living in assisted living/care homes.

Sixty-nine percent (69%) cited that their use of technology during the pandemic either greatly increased or increased, pointing to the importance of digital access during COVID-19.

What types of devices (like computers, tablets or smartphones) do you have access to? (Check all that apply) (Total Respondents: 1,500)

What types of devices (like computers, tablets or smartphones) do you have access to? (Check all that apply)

*Note: Sum of column total exceeds Total Respondents because one person can cite more than one device.

Answer Choices	Number of Respondents	Percent of Respondents
Smartphone	1,017	68%
Tablet	567	38%
Desktop Computer	346	23%
Laptop	285	19%
No access to any devices	205	14%
Home phone/landline	201	13%
Borrow device from friend or family	109	7%
Flip phone	103	7%
School-provided device	57	4%
Don't want a device	24	2%
Other	12	1%
Total Respondents	1,500	

- A significant majority (68%) of survey respondents cited having access to a smartphone (68%), followed by a tablet (38%), desktop computer (23%) and laptop (19%). There was almost equal distribution between respondents that cited having no access to any devices (14%) and home phone landline (13%). Seven percent (7%) borrow devices from friends or family. Respondents have the least access to flip phone (7%) and school-provided device (4%). Two percent (2%) reported not wanting a device.



How do you access the Internet? (Check all that apply) (Total Respondents: 1,482)

How do you access the Internet? (Check all that apply)

*Note: Sum of column total exceeds Total Respondents because one person can cite more than one internet access.

Answer Choices	Number of Respondents	Percent of Respondents
Paid broadband Internet	514	35%
Through a public WiFi hotspot	361	24%
Smartphone Internet data plan	343	23%
Paid discounted Internet	342	23%
Receive Free Internet	303	20%
Free Internet from building	207	14%
Do not have any access to the Internet	151	10%
School-provided WiFi hotspot	105	7%
Don't know	37	2%
Other	31	2%
Total Respondents	1,482	

- Most commonly (35%) of survey respondents cited having access to paid broadband internet. There was almost equal distribution between individuals accessing public WiFi hotspot (24%), smartphone internet data plan (23%), paid discounted internet (23%) and receiving free internet (20%). Fourteen percent (14%) reported receiving free internet from their apartment building. Ten percent (10%) reported not having any access to the internet. Seven percent (7%) cited access to a school-provided WiFi hotspot. Two percent (2%) were unsure.



If you currently do not have Internet, would you be interested in having it? (Total Respondents: 1,477)

- A majority (53%) of survey respondents are interested in having the internet.

Prior to COVID-19, did you use a public computer lab as your primary Internet source (like at a library, community center or other tech lab)? (Total Respondents: 1,478)

- A slight majority of survey respondents (52%) cited using the public computer lab as a primary internet source prior to COVID-19.
- When data is broken down by age and housing, greater usage of public computer labs emerge for certain groups. Transition-age youth (18-24) around 15% percent more than overall respondents. On average, 82% of people residing in assisted living/care homes or those experiencing housing insecurity (unhoused, residing in navigation or overnight shelters) use public computer labs as a primary internet source. Veterans used computer labs 30 percent (82%) more than the overall respondent population*.

**For more information, refer to Appendix: Data Visualization, Figure 1.*

How has your need to use technology changed since COVID-19? (Total Respondents: 1,486)

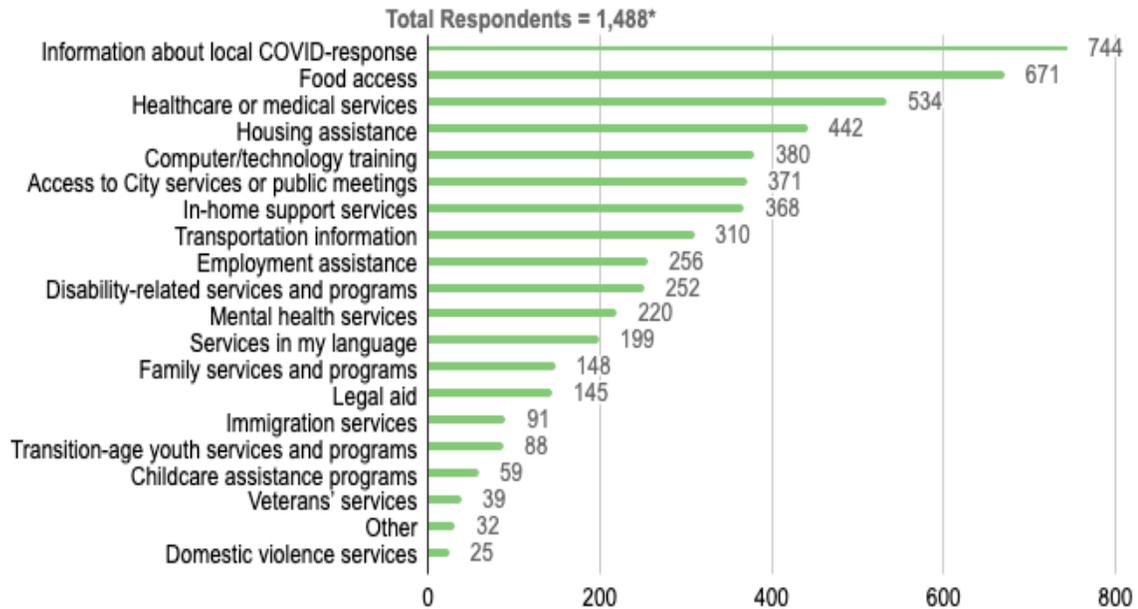
- Technology use during COVID-19 either greatly increased or increased for 69% of the survey respondents with most commonly (41%) reporting a great increase. For 22%, technology use did not change.

SECTION 2: Access to services during COVID-19

There was a variety of needed services during the pandemic. These services mostly centered around access to health, food, housing assistance, and information about local COVID-19 response (vaccine access, PPE, stay-at-home guidelines). The top needed service was information about local COVID-responses. Computer/technology training appeared within the top five needed services. A significant majority (64%) cited that technology was a barrier to accessing needed services during the pandemic.

What are the services that you have needed most during the COVID-19 pandemic? (Total Respondents: 1,488)

Computer technology training appeared within the top five most needed services during the pandemic



- Survey respondents had a variety of needed services during the pandemic. Half (50%) reported that information about local COVID-responses (vaccine access, PPE, stay-at-home guidelines) was the most needed service, followed by food accessibility (45%), healthcare or medical services (36%) and housing assistance (30%). Twenty-six percent (26%) cited computer/technology training as an important need. The needs between City services or public meetings, IHSS, and transportation information are almost equal, averaging 24%.

Was technology a barrier to accessing these services? (Total Respondents: 1,450)

- A significant majority (64%) cited technology as a barrier to accessing needed services during the pandemic.

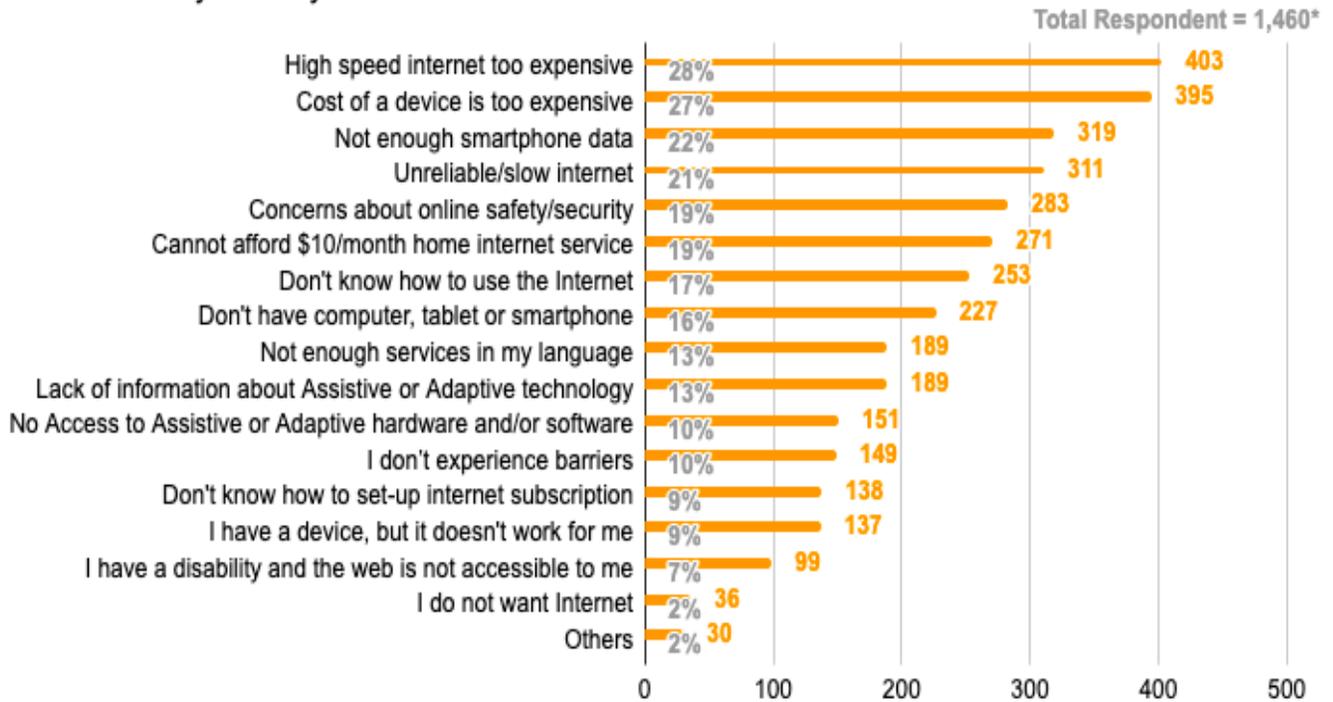
What services have you not been able to receive, but have wanted to access? (Check all that apply). (Total Respondents: 1,324)

- For the most part, similar to needed services, unmet needs also revolved around health (23%), food (25%), and housing assistance (26%). However, computer/technology training (23%) and access to City services or public meetings (18%) appeared higher in the ranking of unmet needs than in most needed services. In each case, information about local COVID response (vaccine access, PPE, stay-at-home guidelines) was reported as the top needed service during the pandemic (33% of unmet needs responses).

SECTION 3: Technology barriers or challenges

Although there were a variety of technology barriers, the top challenges centered on affordability, internet reliability and concerns about online safety/security.

The top five barriers in getting internet centered on affordability, internet reliability and concerns about online safety/security



What barriers or challenges have you faced in getting Internet? (Total Respondents: 1,460)

- Respondents cited technology affordability as the primary barrier to getting the internet. There was almost an equal distribution between the top two responses, unaffordable costs of high speed internet (28%) and device (27%). Not enough smartphone data ranked at third with 22% (this need may also be connected to affordability). Unreliable internet connection held the top fourth reason for lack of access to the internet. Rounding-up the top five reasons was concerns about online safety/security at 19%.

SECTION 4: Familiarity with using internet (internet digital literacy)

A majority (57%) owned an email address, 44% were comfortable in reading and sending emails, as well as using social media. Between 30 to 40 percent were comfortable with joining video calls (39%) or with searching for information online (34%). Twenty-one percent (21%) reported not knowing how to get online using the internet. Twenty percent (20%) reported being able to fill out online forms or complete electronic payments. This information showcases that the survey population possessed a degree of digital literacy in internet use.

Sixty-nine percent (69%) cited having someone available to help with technology issues or questions.

Please tell us how you use the Internet: (Total Respondents: 1,479)

Please tell us how you use the Internet (Check all that apply):

*Note: Sum of column total exceeds Total Respondents because one person can cite more than one way of using the internet.

Answer Choices	Count	Percent
I have an email address	845	57%
I am comfortable reading and sending emails	650	44%
I use social media (like Facebook, What'sApp or WeChat)	645	44%
I can join a video call or event (like on Zoom or Google Chat)	580	39%
I know how to search for information online (like on Google, Bing or Safari)	508	34%
I don't know how to get online using the Internet	313	21%
I can fill out online forms or pay bills online	294	20%
Total Respondents	1,479	

- A majority (57%) owned an email address. Answers were equally distributed (44% each) between comfort in reading and sending emails, and using social media. Thirty-nine percent (39%) cited being comfortable with joining a video call or online event. Thirty-four percent (34%) knew how to search information online. Twenty percent (20%) reported being able to fill out online forms or to pay bills online. Only 21% reported not knowing how to get online using the internet.

Do you have someone who can provide help if you have a question about how to use your computer (a family member, friend or service provider)? (Total Respondents: 1,490)

- A significant majority, 69%, cited having someone available to help them with technology questions.

SECTION 5: Social connections during COVID-19

Sixty-two percent (62%) of survey responses reported participation in online social activities during the pandemic. Most (27%) attended a social activity at least once a month. Furthermore, next to family/friends, individuals received information about needed pandemic services commonly through digital methods (phone calls, television, social media, text messages and email). These data showcase the importance of digital access in maintaining social connections and receiving needed information about pandemic services during shelter-in-place protocols.

Survey data indicates that a majority of respondents have experience in using video conferencing platforms. Fifty-four percent (54%) of survey respondents access video conferencing platforms through their computer, tablet or smartphone. Twenty-nine percent (29%) participate by calling-in on their telephones. Seventeen percent (17%), reported never using video conferencing platforms, while 13% reported never using this technology and would like training. A small number (10%) cited no interest.

How do you get information about the services you need during COVID-19 (like information about vaccines, housing or food access)? (Total Respondents: 1,503)

- Receiving information about needed services during COVID-19 through friends or family ranked two at 46%. But 4 of the top 5 answers are technology-based: The top answer was telephone calls (47%), top 3 was television (34%), top 4 was social media (32%), and top 5 was text messages (32%). This trend showcases the importance of digital access in receiving needed information about pandemic services.

In the last year during COVID-19, have you participated in any online social activities (like virtual art classes, online events or group activities online)? (Multiple choice, one answer question) (Total Respondents: 1,495)

- Sixty-two percent (62%) of survey respondents reported participating in online social activities during the pandemic: Most commonly, survey respondents attended a social activity at least once a month (27%). Nineteen percent (19%) once a week and 16% attended more than once a week.
- Thirty-six percent (36%) reported never attending a social activity during the pandemic.

Have you used video conferencing platforms like Zoom or Google Meet to connect with others (Check all the apply)? (Total Respondents: 1,490)

- A slight majority (54%) join video conferencing platforms, such as Zoom or Google Meet through their computer, tablet or smartphone, while 29% participate by calling-in on their telephones. Twenty-nine (29%) percent cited not having knowledge on using video conferencing platforms. Seventeen percent (17%), reported never using video conferencing platforms, while 13% reported never using video conferencing platforms and would like training. A small number (10%) cited no interest in video conferencing platforms.

SECTION 6: Access to health information and services during COVID-19

Sixty-seven percent (67%), a significant majority of survey respondents, reported receiving healthcare or mental health services through appointments via telehealth during COVID-19. Thirty percent (30%) cited that they did not receive medical services through telehealth and a small portion (3%) preferred not to say. For the most part, results across age, disability, race, income, housing status, language, and access to devices and the internet also showed a majority received medical services through telehealth during the pandemic. However, results for individuals whose preferred language is Spanish showed a reversed trend from the overall result: Within a pool of 110 individuals who responded to the question, “Have you received any healthcare or mental health services through appointments over the phone or video (telehealth) during COVID-19?”, a majority (50%) reported not receiving medical services through telehealth and only 38% reported “yes” and 12% chose “prefer not to say”. Slight deviation from overall results for the Latinx/Hispanic/Latin-American survey participants, where 52% reported receiving telehealth services, further showcases the lack of accessibility in telehealth services for the Latinx/Hispanic/Latin-American community during the pandemic.

As for challenges with telehealth, overall results were nearly equally distributed. A slight majority of responses (around 20%) showcased that lack of access to devices (computer, smartphone, or assistive or adaptive software) caused telehealth inaccessibility. Overall result ranking are as follows (in descending order): If I had access to a device (computer or smartphone), I would use telehealth (21%); I have no concerns with using telehealth (19%); If I had access to assistive or adaptive software, I would use telehealth (18%); I need more training on using telehealth (16%); If telehealth were more accessible to me, I would use it (14%); and Language barriers (not enough services in my language)(10%).

During the COVID-19 pandemic have you missed any important medical appointments or delayed care or treatments? (Total Respondents: 1,485)

- A majority, 57% of respondents reported missing important medical appointments or delayed care or treatments during the pandemic.

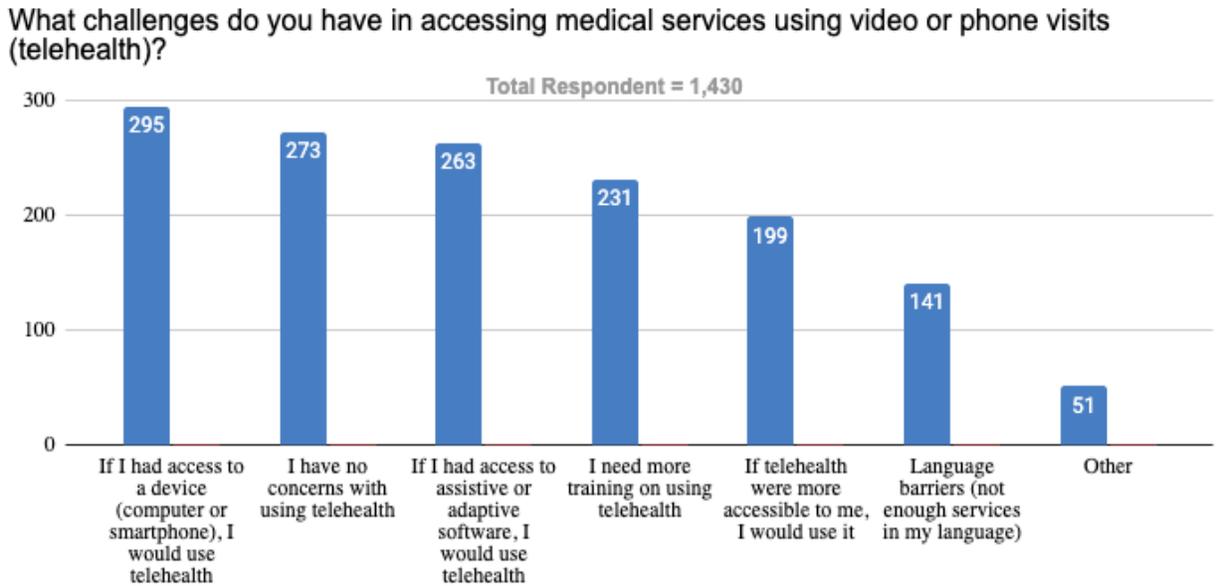
Have you received any healthcare or mental health services through appointments over the phone or video (telehealth) during COVID-19? (Total Respondents: 1,483)

- Sixty-seven percent (67%), a significant majority of survey respondents, reported receiving healthcare or mental health services through appointments via telehealth during COVID-19. Thirty percent cited that they did not receive medical services through telehealth and a small portion (3%) preferred not to answer the question. For the most part, results across age, disability, race, income, housing status, language, and access to devices and the internet also showed a majority received medical services through telehealth during the pandemic. However, major deviation (34 percent lower than overall) from the overall results appeared for individuals whose preferred language is Spanish (38%).
- Results for individuals whose preferred language is Spanish showed a reversed trend from the overall result. Within a pool of 110 individuals who responded to the question, “Have you received any healthcare or mental health services through appointments over the phone or video (telehealth) during COVID-19?”, a majority (50%) reported not receiving medical services through telehealth and only 38% reported “yes” and 12% chose “prefer not to say”. Slight deviation from overall results for the Latinx/Hispanic/Latin-American survey participants, where 52% reported receiving telehealth services, further showcases the lack of accessibility in telehealth services for the Latinx/Hispanic/Latin-American community during the pandemic*.

**For more information, refer to Appendix: Data Visualization, Figure 2.*



**What challenges do you have in accessing medical services using video or phone visits (telehealth)?
(Total Respondents: 1,430)**



- Overall results were nearly equally distributed. A slight majority of responses (around 20%) showcases that lack of access to devices (computer, smartphone, or assistive or adaptive software) caused telehealth inaccessibility. Result ranking is as follows (in descending order): If I had access to a device (computer or smartphone), I would use telehealth (21%); I have no concerns with using telehealth (19%); If I had access to assistive or adaptive software, I would use telehealth (18%); I need more training on using telehealth (16%); If telehealth were more accessible to me, I would use it (14%); and Language barriers (not enough services in my language).

SECTION 7: Access to assistive or adaptive technology

Almost half of survey respondents (45%) reported being familiar with the term “assistive technology” (AT) and 51% reported using AT. As for needed AT services, overall results (representing even non-AT users) show free or low-cost AT as the primary need (53%), followed by training (45%), then information about available AT options (39%), and lastly, access to free or low-cost repairs (30%). This data showcases the need for AT equipment, as well as AT education and training. The need for AT services (such as affordable AT equipment and education) are greater for people with disabilities who are: older adults (ages 60+); experiencing either chronic pain or mental health disability; low-income (less than \$20,000); living in single-room occupancy (SRO); Black, Latinx, and AAPI communities; monolingual (Spanish or Cantonese); and individuals who lack access to devices and internet

Are you familiar with the term Assistive Technology? (Yes/No/Unsure Multiple Choice) (Total Respondents: 1,464)

- 45% of survey respondents reported being familiar with the term “assistive technology”. Thirty-seven percent (37%) were not familiar with the term and 18% were unsure. The following groups showed more unfamiliarity with the term “assistive technology” than the overall respondents: older adults (32% yes, 44% no, 23% unsure); persons with chronic pain (37% yes, 44% no, 20% unsure); individuals with household income less than \$20K (33% yes, 47% no, 20% unsure); living in single-room occupancy (SRO) hotels (22% yes, 51% no, 28% unsure); Black/African-American (39% yes, 43% no, 18% unsure); Latinx/Hispanic/Latin-American (35% yes, 39% no, 26% unsure); Asian/East Asian/South Asian/Asian-American (35% yes, 45% no, 20% unsure); Native Hawaiian or Pacific Islander (20% yes, 70% no, 10% unsure); (persons whose preferred language is either Cantonese (15% yes, 60% no, 25% unsure) or Spanish (27% yes, 38% no, 35% unsure)*.

**For more information, refer to Appendix: Data Visualization, Figure 3.*

Do you currently use any Assistive Technology (like screen-readers, ZoomText, Braille displays, or accessible apps on your phone)? (Yes/No/ Multiple Choice) (Total Respondents: 1,425)

- A slight majority (51%) reported using assistive technology (AT). Forty-nine percent (49%) cited not using AT. The following groups showed reversed results from overall data: older adults (40% yes, 60% no); residents with chronic pain (47% yes; 53% no); persons with mental health disabilities (47% yes, 53% no); individuals with household income less than \$20K (40% yes, 60% no); persons living in single-room occupancy (SRO) hotels (21% yes, 79% no); Black/African-American (41% yes, 59% no); Latinx/Hispanic/Latin-American (41% yes, 59% no, 26%); persons whose preferred language is either Cantonese (38% yes, 62% no) or Spanish (29% yes, 71% no); individuals with access to flip phone (48% yes, 52% no), or home phone/landline (48% yes, 52% no); persons with access to smartphone data plan (48% yes, 52% no) or does not have any access to internet (35% yes, 65% no)*.

**For more information, refer to Appendix: Data Visualization, Figure 4.*

If you use Assistive or Adaptive Technology, are there any other services that you would like? (Total Respondents: 1,252)

- The top needed assistive or adaptive technology (AT) service was free or low-cost AT equipment (53%), followed by training (45%), then information about available AT options (39%), and lastly, access to free or low-cost repairs (30%).

Policy Recommendations: From Digital Equity To Digital Justice

Building on the City's existing efforts to bridge the digital divide, this report is sharing key recommendations based on our research. Our hope is that these recommendations will shape citywide policies for ensuring that all residents have equitable and accessible technology tools to live and thrive independently.

Recommendations Include:

- 1. Prioritize improving free or low-cost digital connectivity for residents with disabilities, older adults, and multiply-marginalized communities.** There is a clear unified call from disability and aging advocates to establish the "internet as a utility," which provides an important opportunity to think of the internet as public infrastructure rather than a luxury or commodity. The proposed recommendation urges the City to proceed with building a City-owned fiber infrastructure to ensure that all SF residents can benefit from free high speed internet at no cost.

Short-Term Approaches:

- a. Continue to fund the expansion of free WiFi and public computer labs in affordable housing, supportive housing, Shelter-in-Place (SIP) hotels, shelters, navigation centers and senior centers** focusing on geographically underserved areas of San Francisco, and communities that have historically lacked equitable access to digital technologies.
- b. Purchase devices and fund the expansion of device recycling/refurbishment and distribution.** In addition to access to high-quality and affordable internet, residents require devices in order to take full advantage of the opportunities that come with a broadband connection. Work in partnership with organizations that have already established successful and scalable models for distributing free laptops, tablets, and assistive technology (AT) devices. Community-based groups in San Francisco are well-positioned to offer direct digital inclusion services to residents. Supporting these established organizations would be an effective and efficient way for the City to enable device distribution and digital skills training that meet residents' needs. Potential grantees include disability and senior organizations, veteran centers, transition-age youth organizations, SROs and supportive housing, faith-based organizations, immigrant support organizations, and organizations that provide support to those experiencing homelessness.
- c. Work in partnership with San Francisco Public Libraries (SFPL) to expand distribution of free WiFi hotspots to residents who currently do not have a reliable source of internet.** Collaborate with public libraries and CBOs to determine the best locations to distribute/place the Wi-Fi hotspots to maximize coverage for SF residents who need it most. Consider ways of increasing the security of public WiFi hotspots, so that they ensure HIPAA compliance and privacy standards.

- d. Audit and reassess the current map of free public WiFi hotspots in San Francisco and ensure that they are publicly accessible, secure and clearly displayed.** Create a printed map of the WiFi zones in multiple languages and accessible formats and distribute them widely in partnership with community-based organizations. Ensure that the map of WiFi hotspots is compliant with Section 508 ADA standards for making digital content and information accessible to people with disabilities.
- e. Set up free and publicly accessible charging stations and lock boxes for phones, tablets, and laptops in public spaces, community and senior centers, shelters, outside of libraries, aggregate food distribution sites, and in MUNI bus shelters.** Work in partnership with community-based provider organizations, senior centers and Mobile Street Outreach Teams to determine the best location to place charging stations and lock boxes. The charging stations can be deployed on-site at service location settings as well as off-site through mobile street outreach service programs. We have assessed a high-level of demand among providers for charging stations and, once deployed, our goal is to advocate for the establishment of the charging stations as a standard throughout San Francisco for organizations providing services for clients experiencing homelessness.

Long-Term Approaches:

- f. Proceed with building a free Fiber-Optic infrastructure to support City needs and digital equity efforts. Proposed City-owned fiber network would ensure that all SF residents can benefit from free high speed internet at no cost.** We recommend the City continue the analysis already underway, taking into account the availability of funds and focusing on geographic distribution of its current and future networking needs. This plan will require partnerships with technology corporations and the state and federal governments to make broadband access universally available in the City and County of San Francisco.



- 2. Develop a centralized hub to build awareness around existing digital inclusion programs, free or low-cost internet, devices and Assistive technology (AT), and digital skills training.** Although San Francisco has a robust portfolio of digital inclusion programs, there is a clear need to increase awareness and education around these vital technology resources. The centralized hub should be designed in a way that provides accessibility and language access for a wide range of residents with disabilities and older adults.

Short-Term Approaches

- a. Create a map of digital inclusion assets and resources available at local, regional, state, and federal levels.** Compile a directory of these resources for use by digital inclusion practitioners and to inform individuals and CBO organizations serving in Digital Navigator roles.
- b. Design a user-friendly tipsheet on how to access free or low-cost internet services, digital skills training, and resources on assistive technology.** This tipsheet would be designed as part of a larger resource “toolkit” available on a centralized hub for service providers and residents. Ensure that printed materials are user-friendly, available in multiple languages and accessible formats (Braille, large-print for blind and low-vision residents). Additionally, create an online video containing information about the tipsheet in American Sign-Language (ASL) that can be shared with the Deaf and hard of hearing community. Continue to partner with community groups for increased distribution. Market tipsheet directly to residents as well as through community organizations, senior centers, community clinics, supportive and low-income housing, shelters, navigation centers, youth organizations, and healthcare settings.
- c. Developed a centralized online hub for publicizing information about free or low-cost technology resources.** Explore a partnership with ShelterTech’s “Ask Darcel” online resource directory to expand the list of resources currently available under the Internet section. Residents can access the online resource through a QR code that is publicly displayed in MUNI bus shelters, libraries, community centers, and other public spaces.
- d. Partner with 311 Information Services** to ensure that residents are receiving up-to-date information about free or low-cost internet options, devices, assistive technology, and information about training and technical support.
- e. Develop and support outreach channels** to assist residents with disabilities and older adults sign up for the federal Emergency Broadband Benefit internet subsidy program and other low-cost internet offers.

3. **Develop pipelines to increase funding and distribution of free or low-cost Assistive or Adaptive Technology (AT) devices, repairs, and training. It is also essential to develop greater outreach and education resources to publicize how free or low-cost AT can be accessed in San Francisco.**

Short-Term Approaches

- a. **Develop a plan to increase funding for assistive or adaptive technology (AT) devices and software at public technology labs.** Providing AT is an essential part of ensuring digital equity for San Francisco residents with disabilities and older adults. Expand and build upon the success of programs such as the Independent Living Resource Center of San Francisco’s (ILRCSF) Device Lending Library (DLL) or City College of San Francisco’s Disability Student Programs and Services (DSPS) Computer Access Labs. Provide these organizations with funding to expand AT training workshops, free or low-cost AT distribution, and repairs.
 - b. **Develop digital accessibility trainings for CBOs and service providers** to increase their awareness of the needs of people with disabilities, as well as strategies for ensuring that their digital services and technology solutions are accessible to users with disabilities who rely upon assistive technology.
4. **Launch a citywide digital accessibility program aimed at ensuring that virtual events, information and digital services are fully accessible for people with disabilities.**

Short-Term Approaches

- a. **Create an Accessible Technology Playbook to provide a framework for improving the delivery of accessible information and communication technology (ICT) in the City of County of San Francisco.** In order to ensure equal access to digital content and services, technology must be accessible to people with disabilities and conform to Section 508 standards of the ADA. Work in partnership with the COIT FY 2022-26 Information and Communication Technology (ICT) Plan and other city agencies to support the development of universally accessible services citywide.
- b. **Create an “Access Fund” to support CBOs** in making their online events and services more accessible through providing ASL interpreters, CART real-time captioning, and audio description.

5. **Pilot initiatives aimed at lowering barriers to telehealth access** in partnership with affordable and supportive housing communities to equip residents with internet access, telehealth tools and digital literacy skills.

Short-Term Approaches

- a. **In partnership with affordable housing providers, ILRCSF and the Office on Digital Equity,** launch a pilot program in affordable and supportive housing communities to equip residents with internet access, telehealth tools and digital literacy skills.
- b. **Provide peer-led trainings in access to telehealth services** to residents with disabilities and older adults living in affordable and supportive housing.

Long-Term Approaches

- c. **Partner with the Center for Connected Health Policy,** a digital inclusion and telehealth policy research organization, to measure the impact of these pilot programs.
6. **Create and implement measures to ensure that employment opportunities and workplace technology are available for residents with disabilities.** Additionally, we are proposing to develop new funding models to boost employment and financial pipelines for people with disabilities, including transition-age youth (18-24), youth experiencing chronic homelessness, and multiply-marginalized low-income disabled people who face significant barriers to employment.

According to the US Bureau of Labor Statistics there are 12.1 million people with disabilities 16 and over who are unemployed.⁴¹ Historically, people with disabilities have fought to have remote access to employment, education, and healthcare, and it was routinely denied. With the arrival of COVID-19 remote access suddenly became possible. It is vital to ensure that people with disabilities 16 and over have access to remote employment opportunities. Without internet access, digital technologies and accessibility measures in place to ensure equitable access, people with disabilities are cut out of participation in the workforce.

⁴¹ U.S. Bureau of Labor Statistics, [Unemployment Rate - With a Disability, 16 Years and Over](#) [LNU04074597], retrieved from FRED, Federal Reserve Bank of St. Louis, September 2, 2021.

Short-Term Approaches

- a. **Create a Tech Employment Scholarship Fund** to help remove employment barriers for transition-age youth (18-24), and promote more tech employment pipelines for youth with disabilities.
 - b. **Continue to offer remote participation options for disabled residents** to participate in public meetings conducted by the City and County of San Francisco. Historically, people with disabilities and seniors have not been equitably involved in government decision-making, and it is vital to continue to provide ways for residents to access public meetings remotely beyond the COVID-19 pandemic.
7. **Boosting investment in digital literacy programs, with a particular focus on language access, accessibility, and cultural relevancy.**

Short-Term Approaches

- a. **Invest additional funds into expanding language access options for digital literacy trainings.** Work in partnership with disability and aging advocates and residents to develop trainings in American Sign-Language (ASL), Cantonese, Spanish, Samoan, Russian, Vietnamese, and other threshold languages spoken in the City and County of San Francisco. Hire more bilingual trainers with disabilities who are knowledgeable of a diverse cross-section of accessibility needs to facilitate trainings. Seek input and guidance of paid advisors to develop culturally-relevant and age-appropriate digital literacy trainings.

Long-Term Approaches

- b. **Develop a multi-series Digital Literacy training in multiple languages and accessible formats on SFGOV.TV with an emphasis on reaching monolingual communities of color, people with disabilities, and older adults.** Beyond serving as an educational platform for digital literacy, this TV series will also educate and inform the public about the various Digital Inclusion programs, services and solutions being offered in the City and County of San Francisco. Develop these digital literacy trainings in partnership with senior centers, disability organizations, organizations serving TAY youth, veterans, people experiencing homelessness, and citywide digital inclusion programs such as SF Connected, Community Tech Network and SF Tech Council.

8. **Invest in digital equity programs and community-led solutions for transition-age youth with disabilities (18-24), youth experiencing chronic homelessness and youth in the foster care system.**

Short-Term Approaches

- a. **Work in partnership with SFUSD** to ensure that transition-age youth with IEPs and 504 Plans can retain their Chromebooks and assistive technology hardware and software after they graduate or exit the SFUSD district.
- b. **Leverage partnerships with organizations such as Mission Bit and Dev/Mission**, which are organizations working to strengthen tech education pipelines for under-resourced youth. Ensure that the specific needs of youth experiencing chronic homelessness and in the foster care system are included in these tech education efforts.

Long-Term Approaches

- c. **Develop a plan for building a citywide Digital Equity program geared towards increasing digital equity for TAY youth with disabilities (18-24).** Leverage partnerships with organizations serving TAY youth with disabilities, foster care youth, youth experiencing chronic homelessness, LGBTQIA+ youth, justice-involved TAY, and low-income TAY youth of color.

9. **Develop digital stewardship models to include community members with disabilities, older adults and other disproportionately affected people and communities in the designing, building, and evaluating of digital equity solutions for the City and County of San Francisco Digital Equity Strategic Plan 2010-2024 and future plans.**

Short-Term Approaches

- a. **Create a Disability and Aging Taskforce made up of a diverse cross-sections of people with disabilities to advise and lead all aspects of the Digital Equity Strategic Plan 2019-2024.** Develop a diversity, equity, access and inclusion (DEIA) framework to guide the development and evaluation of digital equity work. Center racial and disability equity as a driver of the work, not just an outcome of the work.
- b. **Partner with CBOs hosting free community events such as Bayview LIVE, Tenderloin Streets, and Sunday Streets** to serve as a mechanism to raise tech education awareness and resources for residents in underserved areas of San Francisco to attend digital skills workshops and access free or low-cost devices and internet.

Long-Term Approaches

- c. Develop a citywide Digital Navigator training and employment program for libraries, supportive housing and senior centers.** Digital Navigators provide person-centered assistance to address the entire digital inclusion process – internet connectivity, devices, assistive technology and digital skills – to assess a community member’s needs and guide them towards resources. Ideally, Digital Navigators would be centralized in supportive housing sites (SROs), public libraries, community-based organizations and senior centers. We encourage the City to explore models such as the “Safe Passages” program launched by the Tenderloin Community Business District (TLCBD); the Office of Civic Engagement and Immigration Affairs (OCEIA) Community Ambassador program, and ShelterTech’s Community Outreach Representatives working with people experiencing homelessness.
 - d. Create Tech Kiosks staffed with “Digital Navigators” who provide information, resources on the various digital services available to SF residents.** Work in partnership with the various Community Business Districts (CBDs) and CBOs (such as Safe Passages, TLCDB) to identify placement of the Tech Kiosks, and developing training and curriculum to support navigators.
- 10. Continue to develop the Bay Area Regional Digital Equity Consortium** to advance local, regional and statewide Digital Equity efforts and common alignment of policy recommendations.
- 11. Roll-out recommendations and manage the implementation of urgent initiatives that address the needs and barriers of San Francisco residents with disabilities and older adults.** We are urging policymakers at the city, state and federal level to actively work towards enacting these short- and long-term recommendations proposed by the 2021 Empowered San Francisco Technology Needs Assessment.



Appendix A: Full Dataset

Explore the full data set of the 3,080 San Francisco resident survey responses who completed the 2021 Empowered San Francisco Technology Needs Assessment conducted by Thriving in Place. Data is available to view or download in an excel spreadsheet at www.tipsf.org/digital-equity. Our goal is to encourage use of the results in a manner that is as responsible and accurate as possible. It is our hope that this also results in additional reporting that provides a greater understanding of the current state of the digital divide for San Francisco residents with disabilities and older adults.

Appendix B: Stakeholder Engagement Organizations

Community-Based Organizations	
AccessSFUSD	Greenlining Institute
Aging and Disability Resource Centers (ADRC)	Larkin Street Youth Services
Bayview Senior Services	Lighthouse for the Blind
CCSF Disabled Students' Programs & Services	Openhouse
Community Alliance of Disability Advocates	Ruth's Table Bethany Center
Coalition of Agencies Serving the Elderly	Shanti Project
Community Living Campaign	SOMA Pilipinas
Community Forward SF	Samoan Community Development Center (SCDC)
Creativity Explored	Senior and Disability Action (SDA)
COVIA Well Connected	The Arc of San Francisco
Curry Senior Center	Toolworks
Delivering Innovation in Supportive Housing	TODCO
Depression and Bipolar Support Alliance	UCSF Center for Vulnerable Populations
Dr. George W. Davis Senior Center	WISE Health
Family Caregiver Alliance	Veteran Justice Courts
Felton Institute	LavaMae
Golden Gate Regional Center (GGRC)	
Independent Living Resource Center of SF (ILRCSF)	
Longmore Institute on Disability at San Francisco State University	

City Departments and Agencies

Age and Disability Friendly Taskforce

City College of San Francisco (CCSF) Disabled Students' Programs and Services (DSPS)

Department of Disability and Aging Services (DAS)

Department of Homelessness and Supportive Housing

Human Services Agency (HSA)

Mayor's Office on Disability (MOD)

Mayor's Office on Housing and Community Development (MOHCD)

Office of Civic Engagement and Immigration Affairs (OCEIA)

Office on Digital Equity

San Francisco Public Library (SFPL) Access Services

San Francisco Unified School District Transition Partnership Program (TPP) /
AccessSFUSD

South of Market VA Clinic

San Francisco Dept of Veterans Affairs (SFVA) Psychosocial Rehabilitation and Recovery
Center (PRRC)

Bay Area Digital Inclusion Programs

Alameda Age Friendly Council Digital Needs Assessment

Community Tech Network

SF Tech Council

SF Connected

Marin Digital Equity

St Anthony's Foundation Community Tech Lab

Appendix C: Empowered Cities Technology Survey

SECTION 1: This first section asks about your access to devices (like computers, tablets or smartphones) and the Internet.

What types of devices (like computers, tablets or smartphones) do you have access to? (Check all that apply)

- I do not have access to any devices, I need a computer or smartphone
- Smartphone (like an iPhone or Android)
- Tablet (like an iPad)
- Desktop computer
- Laptop
- School-provided device
- Flip phone
- I borrow a device from a friend or family
- Home phone/landline
- I don't want a device
- Other:

How do you access the Internet? (Check all that apply)

- Through a public WiFi hotspot (outside a library or coffee shop)
- I receive free Internet
- I pay for discounted Internet
- I receive free Internet from my building
- I have a smartphone Internet data plan
- I use a school-provided WiFi hotspot
- I pay for broadband Internet
- I do not have any access to the Internet
- Don't know
- Other:

If you currently do not have Internet, would you be interested in having it?

- Yes
- No
- Doesn't apply, I already have Internet

Prior to COVID-19, did you use a public computer lab as your primary Internet source (like at a library, community center or other tech lab)?

- Yes
- No

How has your need to use technology changed since COVID-19?

- Greatly increased
- Increased
- Not changed
- Decreased
- Greatly decreased

SECTION 2: This section asks about your access to services during the COVID-19 pandemic.

**What are the services that you have needed most during the COVID-19 pandemic?
(Check all that apply)**

- Information about local COVID-response (vaccine access, PPE, stay-at-home guidelines)
- Access to City services or public meetings
- Food access
- Housing assistance
- In-home support services
- Employment assistance
- Healthcare or medical services
- Computer/technology training
- Transportation information
- Disability-related services and programs
- Mental health services
- Legal aid
- Immigration services
- Transition-age youth services and programs
- Family services and programs
- Childcare assistance programs
- Services in my language
- Veterans' services
- Domestic violence services
- Other:

Was technology a barrier to accessing these services?

- Yes
- No

What services have you not been able to receive, but have wanted to access? (Check all that apply).

- Information about local COVID-response (vaccine access, PPE, stay-at-home guidelines)
- Access to City services or public meetings
- Food access
- Housing assistance
- In-home support services
- Employment assistance
- Healthcare or medical services
- Computer/technology training
- Transportation information
- Disability-related services and programs
- Mental health services
- Legal aid
- Immigration services
- Transition-age youth services and programs
- Family services and programs
- Childcare assistance programs
- Services in my language
- Veterans' services
- Domestic violence services
- Other:

SECTION 3: This section asks about any technology barriers or challenges that you've faced during the COVID-19 pandemic.

What barriers or challenges have you faced in getting Internet? (Check all that apply):

- I do not have a device (computer, tablet or smartphone)
- I don't know how to use the Internet
- Cost of a device is too expensive
- I cannot afford \$10 a month home Internet service (like AT&T or Comcast)
- High-speed Internet is too expensive
- I don't have enough data on my smartphone
- Unreliable Internet connection (not fast enough)
- I don't know how to set-up a subscription for an Internet Provider
- Language barriers (not enough services in my language)
- Concerns about online safety/security
- I have a device, but it doesn't work for me
- I have a disability and the web is not accessible to me
- I don't have the Assistive or Adaptive hardware and/or software to access the Internet
- I don't know what Assistive or Adaptive technology options are available
- I do not want Internet
- I don't experience barriers
- Other:

SECTION 4: This section asks about your familiarity using the Internet and devices (like computers, tablets or smartphones).

Please tell us how you use the Internet (Check all that apply):

- I don't know how to get online using the Internet
- I have an email address
- I am comfortable reading and sending emails
- I know how to search for information online (like on Google, Bing or Safari)
- I can join a video call or event (like on Zoom or Google Chat)
- I use social media (like Facebook, What'sApp or WeChat)
- I can fill out online forms or pay bills online

Do you have someone who can provide help if you have a question about how to use your computer (a family member, friend or service provider)?

- Yes, I have someone available to help me
- No, I don't have anyone available to help me
- Don't Know
- Other:

SECTION 5: This section asks about how you've stayed connected to family, friends and online social activities and services during the COVID-19 pandemic.

How do you get information about the services you need during COVID-19 (like information about vaccines, housing or food access) (Check all that apply):

- Telephone calls
- Text messages
- Newspaper
- Through Friends or Family
- Through a City agency or public meeting
- Through a community organization
- Through a mutual aid network
- Radio
- Television
- Email
- Social media (like Facebook, Instagram or WeChat)
- Mail
- Other:

In the last year during COVID-19, have you participated in any online social activities (like virtual art classes, online events or group activities online)?

- Never
- Once a month
- Once a week
- More than once a week
- Other:

Have you used video conferencing platforms like Zoom or Google Meet to connect with others? (Check all that apply)

- Yes, I use it by calling-in on my telephone
- Yes, I use it with video on my computer, tablet or smartphone
- No, I have never used video conferencing platforms
- No, and I would like training on how to use
- I am not interested in video conferencing platforms
- Other:

SECTION 6: This next section asks about your access to health information and services during the COVID-19 pandemic.

During the COVID-19 pandemic have you missed any important medical appointments or delayed care or treatments?

- Yes
- No
- Don't Know

Have you received any healthcare or mental health services through appointments over the phone or video (telehealth) during COVID-19?

- Yes
- No
- Prefer not to say

What challenges do you have in accessing medical services using video or phone visits (telehealth)?

- If I had access to a device (computer or smartphone), I would use telehealth
- If I had access to assistive or adaptive software, I would use telehealth
- I need more training on using telehealth
- If telehealth were more accessible to me, I would use it
- Language barriers (not enough services in my language)
- I have no concerns with using telehealth
- Other:

SECTION 7: This section asks about your use of Assistive or Adaptive Technology.

Are you familiar with the term Assistive Technology? (Assistive Technology, or AT refers to the materials, equipment, tools, objects, or devices that allow individuals to live with greater independence)

- Yes
- No
- Not sure

Do you currently use any Assistive Technology (like screen-readers, ZoomText, Braille displays, or accessible apps on your phone)?

- Yes
- No

If you use Assistive or Adaptive Technology, are there any other services that you would like? (Check all that apply)

- Information about Assistive Technology options available to me
- Assistive Technology trainings
- Free or low-cost Assistive Technology equipment
- Free or low-cost repairs
- Other:

SECTION 8: This section invites you to share additional perspectives or thoughts.

Is there anything else you would like to share about your challenges with technology during COVID-19?

Please provide any suggestions or ideas you may have for technology programs or services for older adults and adults with disabilities in San Francisco.

SECTION 9: Demographic Information

In this section we are asking for you to share a few personal details so we can ensure that we learn from a broad diversity of San Francisco's disability and aging communities. Please remember that this survey is completely confidential.

Please select the statement that best describes you. (Check all that apply)

- I am an older adult (age 60 and over)
- I am an adult with a disability (age 18 and over)
- I am a transition-age youth (age 18-24)
- I am a veteran
- I am a disability or aging service professional
- I am a caregiver or home care attendant
- I am a family member or friend of a person with a disability or older adult
- I am a parent of a child / youth with a disability
- I am currently NOT disabled
- Prefer not to say
- Other, please specify:

What best describes your race or ethnic identity?

- American Indian/Native American/Alaska Native
- Black or African-American
- Asian/East Asian/South Asian/Asian-American
- Latinx/Hispanic/Latin-American
- Native Hawaiian or Pacific Islander
- White/Caucasian/European-American
- Middle Eastern or North African
- Multi-racial or multi-ethnic
- Prefer not to say
- Other, please specify:

What is your preferred language?

- American Sign Language
- Arabic
- Cantonese
- English
- Japanese
- Korean
- Mandarin
- Russian
- Spanish
- Tagalog
- Taishanese or Toishanese
- Vietnamese
- Prefer not to answer
- Other, please specify:

Do you identify as lesbian, gay, bisexual, transgender, queer or questioning, intersex, or asexual?

- Yes
- No
- Questioning, unsure
- Prefer not to say
- Other, please specify:

What gender do you identify with?

- Male
- Female
- Transgender
- Transgender female
- Transgender male
- Genderqueer/Gender non-conforming
- Non-binary
- Two Spirit
- Intersex
- I am not sure about my gender/gender identity
- Prefer not to say
- Other, please specify:

Have you ever served on active duty in the United States Armed Forces, National Guard or in a military reserve unit?

- Yes
- No
- Prefer not to say

What is your Age?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-59
- 60+
- Prefer not to say

What is your Current Annual Household Income before taxes?

- Less than \$20,000
- \$30,000 - \$39,999
- \$40,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 - \$159,999
- \$160,000 or more
- Don't Know
- Prefer not to say

What type of residence do you live in?

- Single family home
- Apartment rental
- Supportive housing
- Assisted living or board and care home
- I am currently experiencing homelessness, or unhoused
- Single-Room Occupancy (SRO) hotel
- Affordable housing
- Navigation center
- Overnight shelter
- I am living with family or friends
- Prefer not to say
- Other, please specify:

Zip Code (Enter 5-digit zip code. If experiencing homelessness, list 00000):

We want to make sure we are reaching as many people as possible within San Francisco's disability communities. Which of the following types of disability do you personally experience? (Check all that apply)

- Mobility disability
- Blind or low-vision
- Deaf or hard of hearing
- Neurodivergent (Autism, TBI, OCD, ect.)
- I have an IEP or 504 Plan
- Mental health disability (PTSD, depression, anxiety)
- Developmental or intellectual disability
- Learning disability (dyslexia, dyscalculia, ect.)
- ADHD/ADD
- Alzheimer's, dementia, memory loss
- Chronic Pain
- Chronic illness (AIDS/HIV, MS, Cancer)
- Little person/person of short stature
- Trauma survivor
- Non disabled/accomplice or ally
- Prefer not to say
- Questioning
- Other, please specify:

What is your employment status? (Check all that apply)

- Employed full-time
- Employed part-time
- Student
- Unemployed, looking for work
- Unemployed, not looking for work
- Unemployed, unable to work
- Self-employed/contractor/consultant
- Retired
- Prefer not to answer

Spanish Survey

<https://www.tipsf.org/digital-equity/pdf/digital-equity-survey-printable-spanish-revB-032321-web.pdf>

Chinese Survey

<https://www.tipsf.org/digital-equity/pdf/digital-equity-survey-printable-chinese-revB-032321-web.pdf>

Vietnamese Survey

<https://www.tipsf.org/digital-equity/pdf/digital-equity-survey-printable-vietnamese-revB-032321-web.pdf>

Russian Survey

<https://www.tipsf.org/digital-equity/pdf/digital-equity-survey-printable-russian-revB-032321-web.pdf>

Tagalog Survey

<https://www.tipsf.org/digital-equity/pdf/digital-equity-survey-printable-tagalog-revB-032321-web.pdf>

Appendix D: Community Stakeholder Focus Group Questions

Focus Group Questions

1. What kinds of devices (like computers, tablets, smartphones or landline) do you use on a regular basis?

[Note to interviewer to ask questions 3 and 4 for Assistive or Adaptive technology users]

2. Do any of you use Assistive or Adaptive Technology (AT)? Assistive Technology refers to the materials, equipment, tools, objects, or devices that allow individuals to live with greater independence. For instance things like screen-readers, ZoomText, Braille displays, TTY services and transcripts or captions in readings, or do you ever adjust the preference so that the text is larger?
3. Are there any tools that you use to make your devices more accessible? Please share.
4. What do you need to make virtual programs or activities accessible to you? For instance, do you need more information in your language, more training on how to use Zoom, or do you need American Sign Language, or captioning)?
5. How do you access the Internet? For instance, do you use a public WiFi hotspot, free internet from your apartment building or do you pay for broadband internet? (Probe: Are you satisfied with your internet's speed?)
6. When you do have access to the internet, how frequently do you have issues? Follow-up: What are these issues? (Probe: Are you able to participate in online meetings, go on social media, or use your internet or stream videos?)

7. How much would you be willing and able to pay for internet? Follow-up: Do you ever have issues affording the internet?
8. How satisfied are you with the device that you have (smartphone, computer or assistive or adaptive technology), does it meet your needs?
9. Could you think of a time during the last year, when you found it difficult to use a computer, smartphone, or internet. What made it difficult to use?
10. In the past year, did you have any challenges making online health appointments, getting information about vaccines, or getting food because you didn't have access to the internet or a computer?
11. During the pandemic, did you use Zoom, Facebook, Whats App, WeChat, or video or audio calls to stay connected? Is everyone familiar with these technology features that I just mentioned? (Probing question: Were there any problems or positive experiences using these ways of connecting with people?)
12. Can you share any positive experiences you've had with technology?
13. What can the City do to help ensure that all residents with disabilities and older adults (60+) have access to technology?

Appendix D: Disability and Aging Service Provider Focus Group Questions

Focus Group Questions

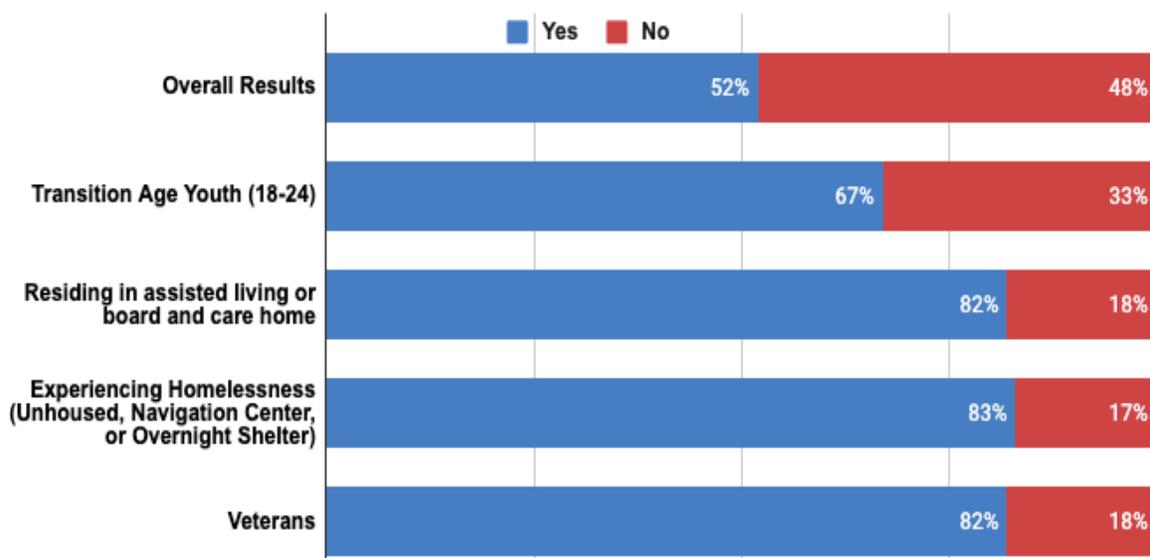
1. Can you share what organization you work with, and what communities you serve through your programs and services?
2. What have been the biggest technology or accessibility barriers for community members with disabilities and older adults during the COVID-19 pandemic? (for instance, using platforms like Zoom, availability of devices, lack of digital skills training, not enough accessibility, access to adaptive or assistive technology or equipment...)
3. If your organization is currently relying heavily on digital engagement (via laptops, smartphones, tablets) to stay connected with community members, how have you continued to also serve those without devices/internet/or digital skills? Please share some strategies that have worked for you.
4. How have your community engagement strategies changed during the COVID-19 pandemic? What role has technology played?
5. In the past year, what have you noticed around community members' access to making online health appointments, getting information about vaccines, or getting food?

6. While there have been numerous challenges to transitioning to virtual programming and content during the pandemic, please share any unexpected benefits or positive experiences that you have observed with community members?
7. What resources have you needed most to conduct accessible virtual programming during the pandemic?
8. Do you anticipate that virtual access will remain part of permanent programming/content in your organization? Why or why not?
9. In your opinion what could City agencies do to make communications and information-sharing more accessible to people with disabilities and older adults?
10. During COVID-19, have new conversations around access, inclusion, equity, and diversity been brought up within your organization? If so, has this led to expanded access and inclusion for disabled communities in your organization?
11. What do staff at your organization need in terms of technology access and resources?
12. What can the City of San Francisco do to help ensure that all residents with disabilities and older adults (60+) have access to technology? Please expand, and share 1-2 recommendations or priorities that you would like to see included in a Final Report.

Appendix E: Data Visualization

Figure 1

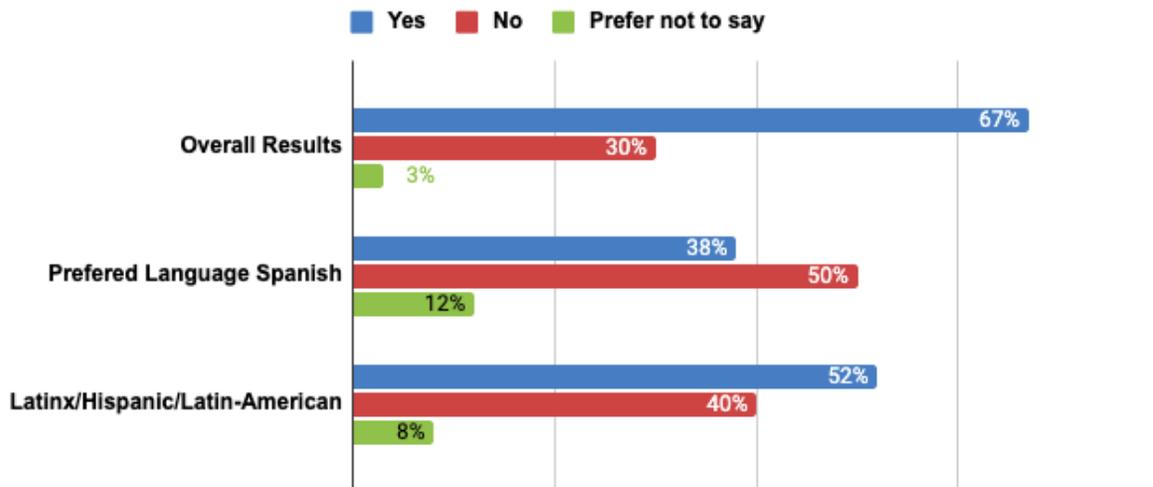
Prior to COVID-19, did you use a public computer lab as your primary Internet source (like at a library, community center or other tech lab)? By Selected Subgroups with Disabilities



Subgroups	Number of Respondents		
	Yes	No	Total Respondents
Transition Aged Youth (18-24)	89	44	133
Residing in assisted living or board and care home	50	11	61
Experiencing Homelessness (Unhoused, Navigation Center, or Overnight Shelter)	57	12	69
Veterans	277	61	338
Overall Results	775	703	1,478

Figure 2

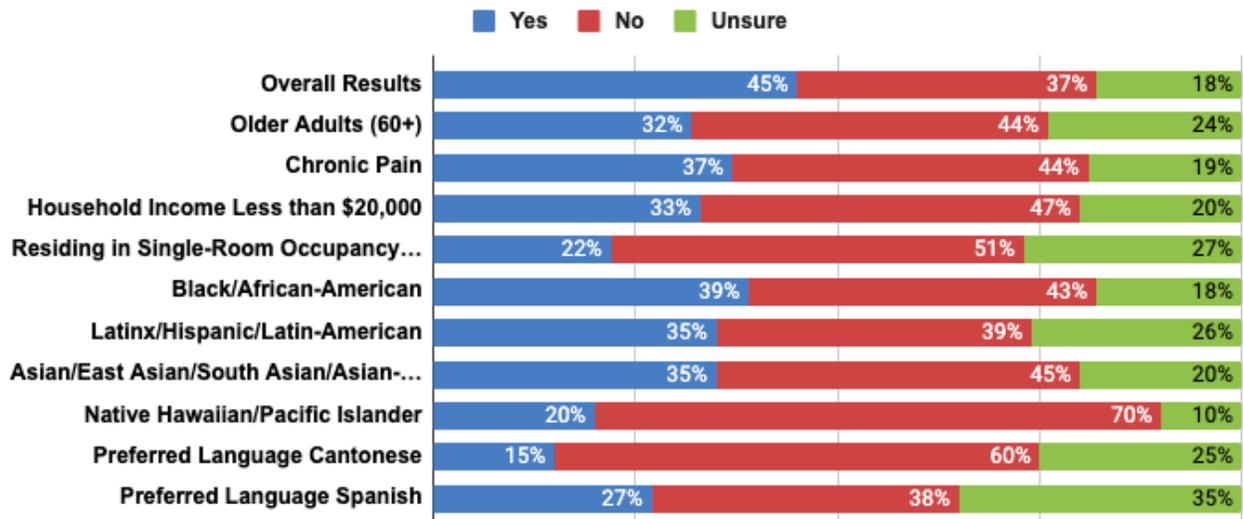
Have you received any healthcare or mental health services through appointments over the phone or video (telehealth) during COVID-19? By Latinx Community



Subgroups	Number of Respondents			Total Respondents
	Yes	No	Prefer Not to Say	
Preferred Language Spanish	42	55	13	110
Latinx/Hispanic/Latin-American	87	68	13	168
Overall Results	999	441	43	1,483

Figure 3.

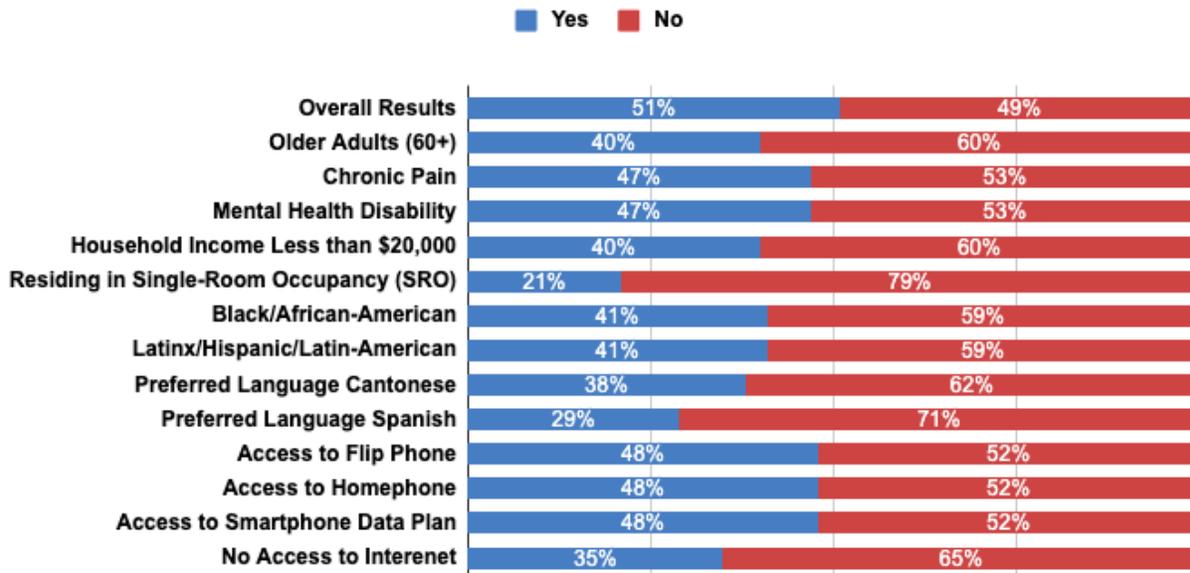
Are you familiar with the term Assistive Technology? By Selected Subgroups with Disabilities



Subgroups	Number of Respondents			Total Respondents
	Yes	No	Unsure	
Older Adults (60+)	259	356	186	801
Chronic Pain	136	162	73	371
Household Income Less than \$20,000	160	228	94	482
Residing in Single-Room Occupancy (SRO)	19	44	24	87
Black/African-American	44	49	20	113
Latinx/Hispanic/Latin-American	58	65	44	167
Asian/East Asian/South Asian/Asian-American	191	242	109	542
Native Hawaiian/Pacific Islander	10	35	5	50
Preferred Language Cantonese	43	168	70	281
Preferred Language Spanish	29	41	38	108
Overall Results	661	545	258	1,464

Figure 4

Do you currently use any Assistive Technology (like screen-readers, ZoomText, Braille displays, or accessible apps on your phone)? By Selected Subgroups with Disabilities



Subgroups	Number of Respondents		
	Yes	No	Total Respondents
Older Adults (60+)	313	469	782
Chronic Pain	169	191	360
Mental Health Disability	114	129	243
Household Income Less than \$20,000	186	282	468
Residing in Single-Room Occupancy (SRO)	16	60	76
Black/African-American	42	61	103
Latinx/Hispanic/Latin-American	67	97	164
Preferred Language Cantonese	104	172	276
Preferred Language Spanish	31	77	108
Access to Flip Phone	46	49	95
Access to Homephone	90	99	189
Access to Smartphone Data Plan	154	168	322
No Access to Internet	46	87	133
Overall Results	721	704	1,425



[TIPSF.ORG/DIGITAL-EQUITY](https://tipsf.org/digital-equity)

Front cover photo and description provided by Disabled and Here of four individuals in a series celebrating disabled Black, Indigenous, people of color (BIPOC). One person is holding a chalkboard board that says, "Digital Equity!".

Graphic design by Jon Morato Creative.
www.JonMorato.com