IOWA™

FREEDOM TO FLOURISH

State of Iowa Digital Equity Plan

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Executive Summary

1 Executive Summary

The concept of “Digital Equity” covers a lot of ground. It’s one of those terms that impacts our daily life without ever being used in common parlance. From the Ackley resident struggling to find access to high speed internet to the person in Zwingle learning how to create a webpage to launch a small business and everyone in between, achieving Digital Equity represents the process of removing barriers in order for Iowans to fully participate in our society. Iowa’s Digital Equity Plan (the Plan) strives to understand these barriers and how we can work together to achieve success.

To that end, the Plan presents the results of an extensive outreach, data collection, and collaborative planning effort conducted by the Iowa Department of Management (DOM). Thousands of Iowans contributed to the information used to create the Plan, tailoring it to address the needs of Iowans. To better understand the needs associated with Digital Equity in Iowa, DOM worked with the University of Northern Iowa’s Center for Social and Behavioral Research to conduct a statewide survey. Section 2 highlights the most useful results in the body of the plan while the full report is available under Appendix D.

The survey revealed that while Iowans are overwhelmingly performing tasks online, an accessibility gap exists, particularly in rural communities. Many Iowans that do have access may struggle to fit the cost of a broadband internet subscription into their budget. Most Iowans use a smartphone but may not own digital devices more suitable to certain online tasks or have enough digital devices in the home to meet the needs of all individuals. That gap in device ownership may be due to cost, lack of technical assistance to maintain the device, the digital skills to operate the device, or combination thereof. Iowans reported mixed confidence in completing online tasks and understanding of protecting personal information and cybersecurity threats, revealing opportunities to improve the digital skills level of the population.

While the statewide survey provided ample information to understand the digital equity needs, DOM conducted a digital equity assets inventory to better understand the resources currently available. The results of that analysis are also presented in Section 2. When comparing the needs and assets currently available, Iowa stands in a strong position to make significant progress through cooperation and coordination of efforts. As implementation efforts commence, it is likely the state will identify more assets to develop to address emerging issues.

Section 3 details the extensive efforts DOM made in hearing from Iowans across the state over the course of 55 public meetings. Results from the activity conducted during the meetings were compiled and used to inform the Plan on the aspects of Digital Equity most important to Iowans. Additionally, results from an exit survey that provided additional insight into the collective thoughts from attendees of the public meetings are detailed.

Iowans attending the public meetings saw value in investing in the identified facets of Digital Equity that include Accessibility, Affordability, Digital Devices, and Digital Skills. Attendees also wanted attention paid to “reliability,” which speaks to having inconsistent internet service. Additionally, protection of personal information and cybersecurity frequently emerged in conversation as a special set of digital skills. This influenced the Plan to add specific goals around reliability and cybersecurity. Full details of the public engagement effort and the public comment process are explained in Section 3.

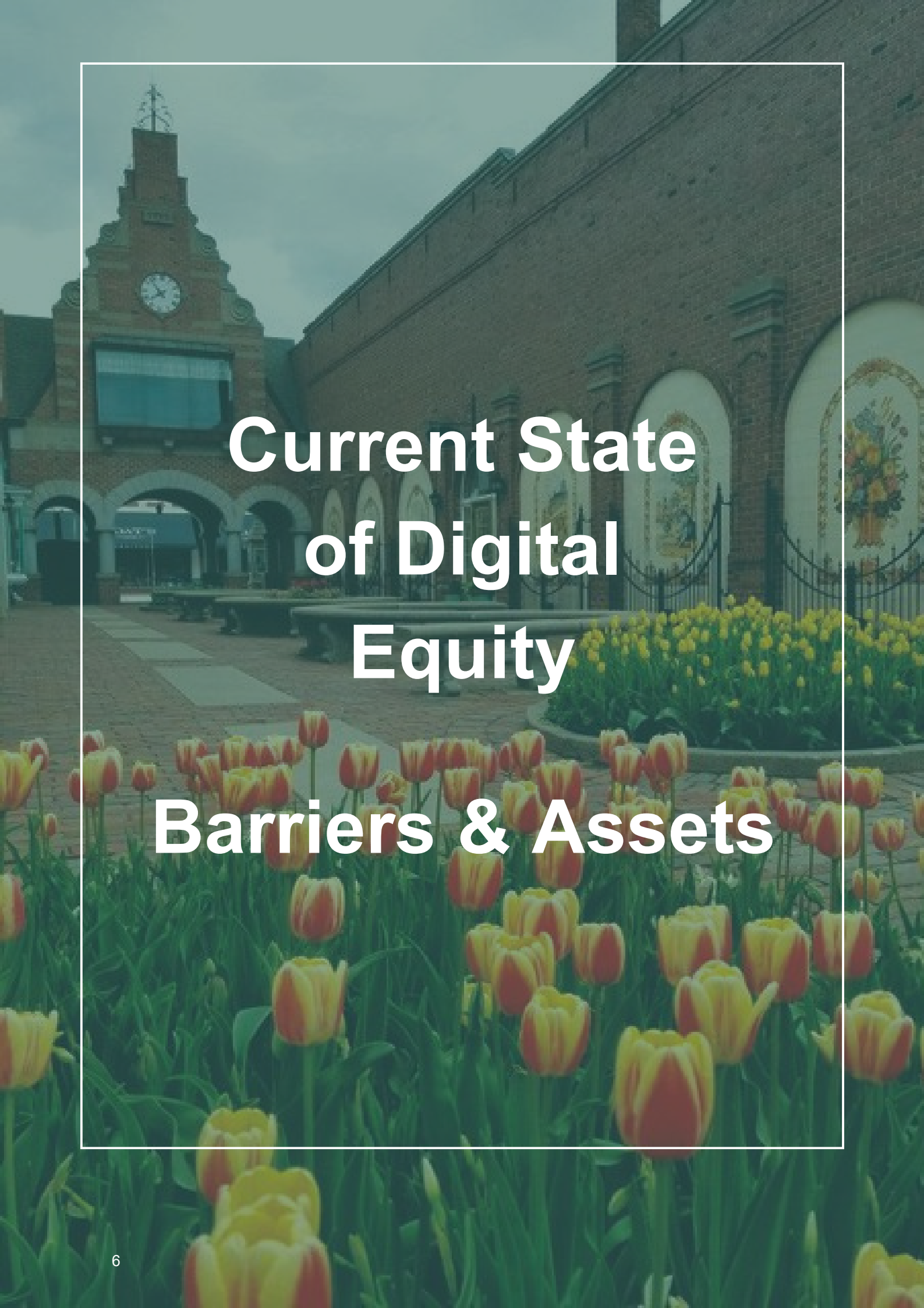
Section 4 of the Plan contains the vision for Digital Equity in Iowa and how the state proposes to get there. The seven goals of the Plan were derived from a collaborative planning process with networks of individuals representing the Covered Populations defined in the Digital Equity Act. Through a series of facilitated meetings, DOM was able to better understand the barriers many Iowans face and gather ideas on how best to serve those residents. These goals each have measurable objectives and strategies associated with them for the State of Iowa and their partners to work towards over the life of the Digital Equity Plan. In some instances, DOM may be in the best position to take the lead on a particular activity or strategy. Other opportunities may be better suited for a sister agency, a non-profit organization, or another invested partner group to deliver solutions to their constituents. The seven goals established through the planning process address: 1) Broadband Availability; 2) Broadband Reliability; 3) Broadband Affordability; 4) Availability and Affordability of Digital Devices and Technical Support; 5) Digital Skills; 6) Online Accessibility & Inclusivity of Essential Public Resources and Services; and 7) Online Privacy and Cybersecurity.

Section 5 details the implementation strategy DOM plans to employ to achieve the goals of the plan and includes a proposed timeline. DOM will place an emphasis on cooperation and coordination to reduce potential duplication of efforts and to align efforts in an attempt to accomplish more. DOM understands that projected funding under the Digital Equity Capacity Grant represents a great opportunity to start working to create solutions to big problems. Taking an approach to create sustainable systems and choosing opportunities with the biggest return in investment will help guide decision making in the future.

Section 6 contains appendices referred to throughout the Plan. Appendix B contains a summary of the public comments received during the public comment period. Appendix D contains the statewide survey as noted above while Appendix C contains research conducted to help answer questions about creating a device ecosystem. There are five statutory requirements and ten programmatic requirements this plan must meet in accordance with the Digital Equity Planning Grant funds used to create the Plan. These are described in Appendix A in full. To help with the review process, a colored symbol will appear to indicate that an element is addressed in that section. Blue stars indicate one or more statutory requirements while a red star indicates one or more programmatic requirements are addressed in that section.

 Statutory Requirement  Programmatic Requirement

The implementation of Iowa's Digital Equity Plan will make significant strides in closing the digital divide and setting up a sustainable infrastructure to address digital equity issues into the future. Digital equity impacts every community in the state, making it an issue that requires cooperation, creativity, and coalition building. This work will require new approaches to solve existing and emerging problems, which will create new partnerships to remove barriers for Iowans to fully participate, contribute, and thrive in society.



Current State of Digital Equity

Barriers & Assets

2 Current State of Digital Equity: Barriers and Assets

2.1 Needs Assessment

In order to gain a better understanding of the baseline conditions in the State of Iowa, DOM worked with the University of Northern Iowa to conduct a statewide survey. Readers can find the full report, including methodology and frequency tables, in Appendix D. The statewide survey asked respondents a series of demographic questions that allows segmenting the data into responses by Covered Populations, with the exception of incarcerated individuals. There were sufficient cases to permit subgroup analysis with most covered populations, however some populations may require additional information in the future to more fully understand baseline conditions of nuanced and diverse populations. DOM considers the following as baseline information useful in understanding the current state of affairs and to measure progress against in future surveys. Other data used to develop this section comes from publicly available data sources such as the US Census and FCC Source Data.


This section satisfies Statutory Requirement #1 and Additional Requirement #2.

2.1.1 Covered Population Needs Assessment

The Digital Equity Act defines eight Covered Populations to consider in digital equity work as follows:

1) Individuals who live in “covered households”
2) Aging individuals
3) Incarcerated individuals other than individuals who are incarcerated in a federal correctional facility
4) Veterans
5) Individuals with disabilities
6) Individuals with a language barrier, including individuals who i) are English learners and ii) have low levels of literacy
7) Individuals who are members of a racial or ethnic minority group
8) Individuals who primarily reside in a rural area

A “covered household” is defined as a household earning not more than 150% of the federal poverty level. That income value changes based on the number of people living in the household. Aging individuals are defined as Iowans aged 65 and older. Rural residents are defined as anyone not living in a city or area with more than 50,000 people.

Almost 80% of Iowans fit the qualifications of one or more of the defined covered populations, slightly below the average from all fifty states of 81.3%. Figure 1 shows Iowa’s Covered Populations relative to the average of all 50 states. Note, the average calculation shown below represents an average of the fifty states and not a national population average, which would require a different calculation. The purpose of choosing that methodology allows DOM to

compare Iowa's challenges with those of other states, which may provide useful case studies from fellow states in closing digital divide challenges.

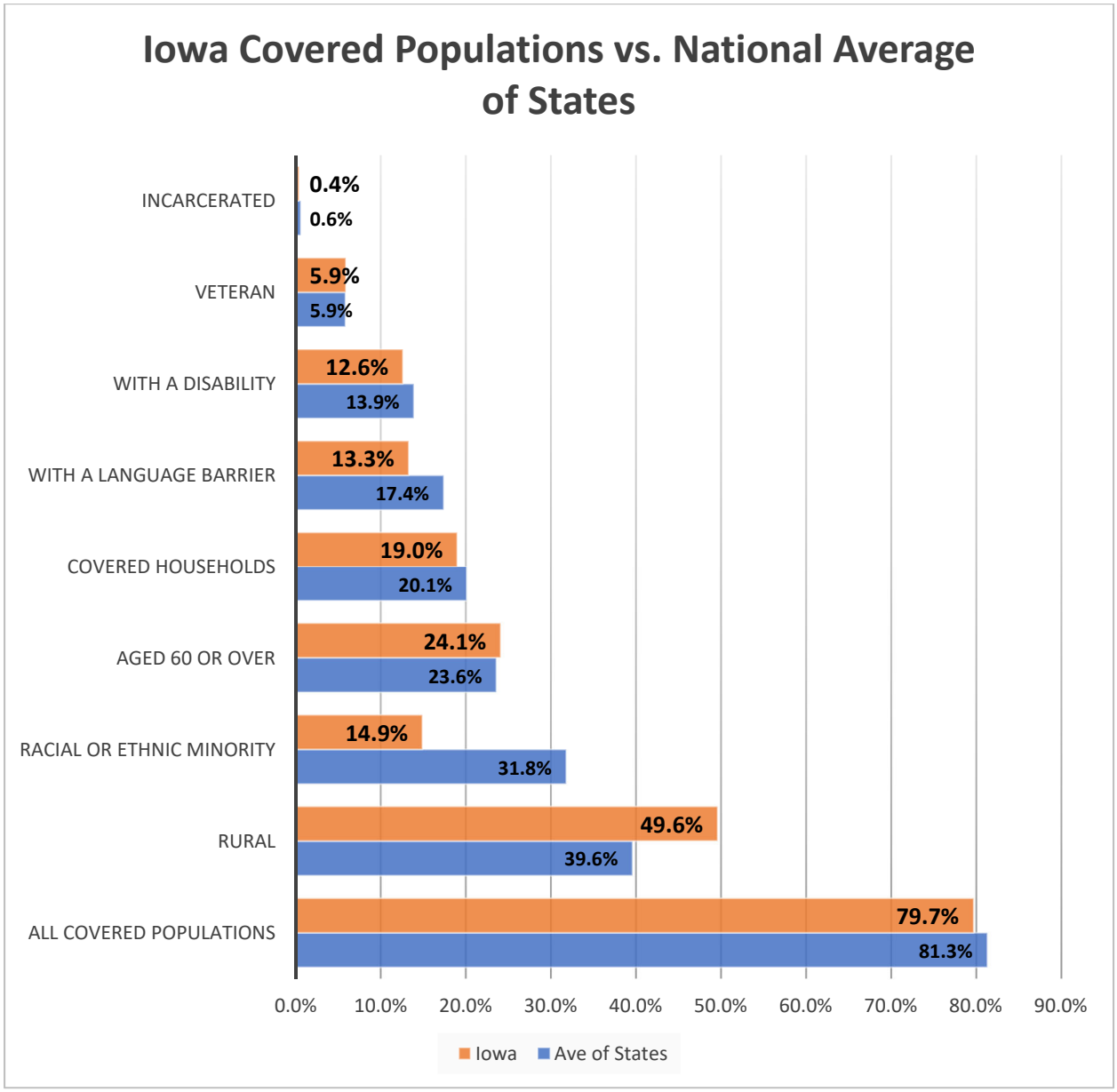


Figure 1 Iowa's Covered Populations vs National Average of States

Figure 2 shows Iowa's percentage of covered population (orange circle) relative to the maximum of all fifty states (black circle), minimum of all fifty states (white circle), and average of all fifty states (blue circle). The states with the maximum and minimum values are identified by the two-letter postal abbreviation next to the percentage value. Iowa's ranking out of fifty states is listed at the bottom of the figure.

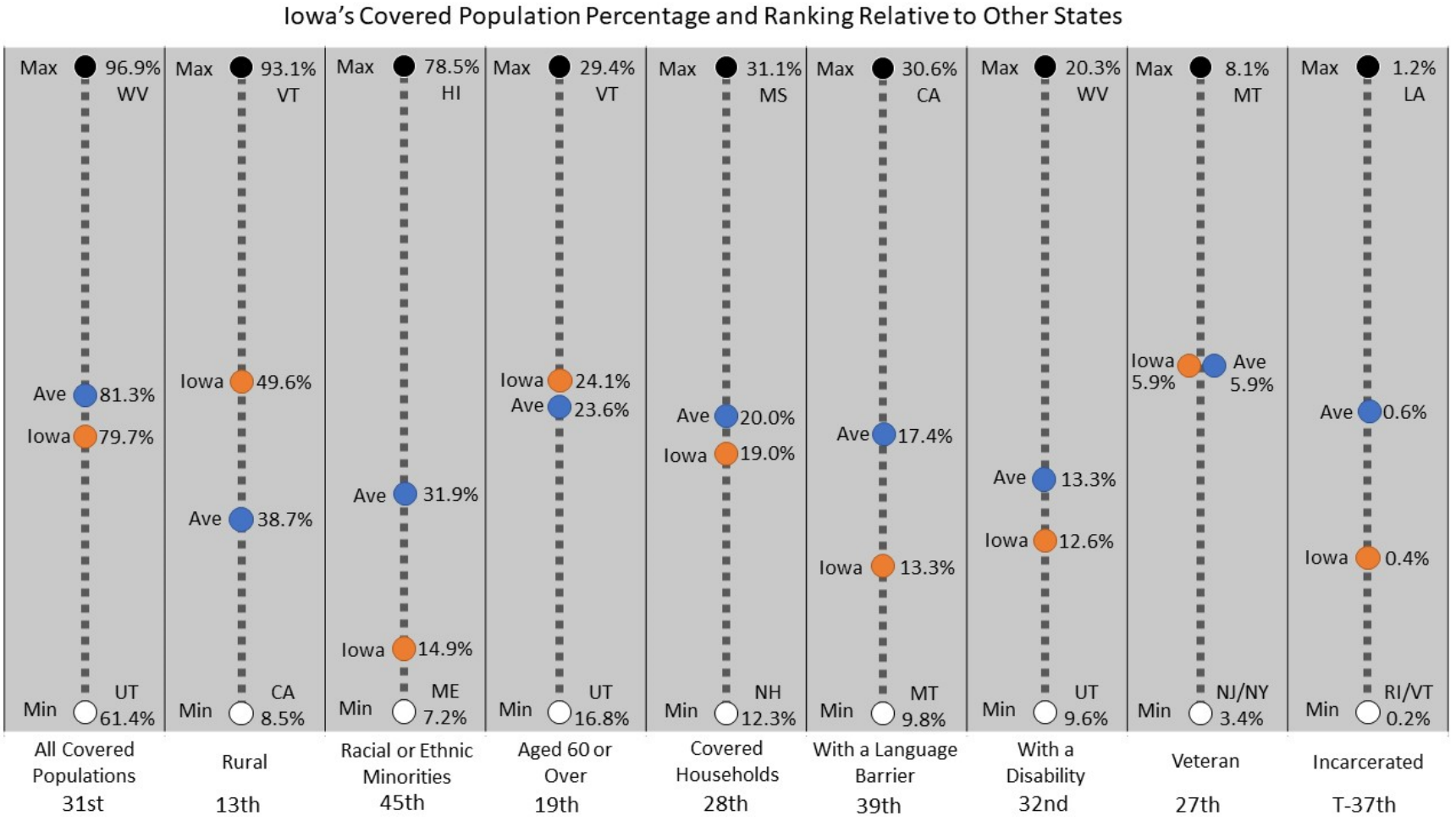


Figure 2 Iowa's Covered Population Percentages Relative to Other States

The statewide survey conducted by the University of Northern Iowa on behalf of DOM received 1683 viable responses. Some of the survey questions were purely demographic to help ascertain the composition of the response pool relative to the whole population of Iowa. The pool of respondents tended to be older, more educated, less racially diverse, and higher income than the state population as a whole. Figure 3 shows females make up over 60% of respondents, well above the 49.8% of the estimated population.

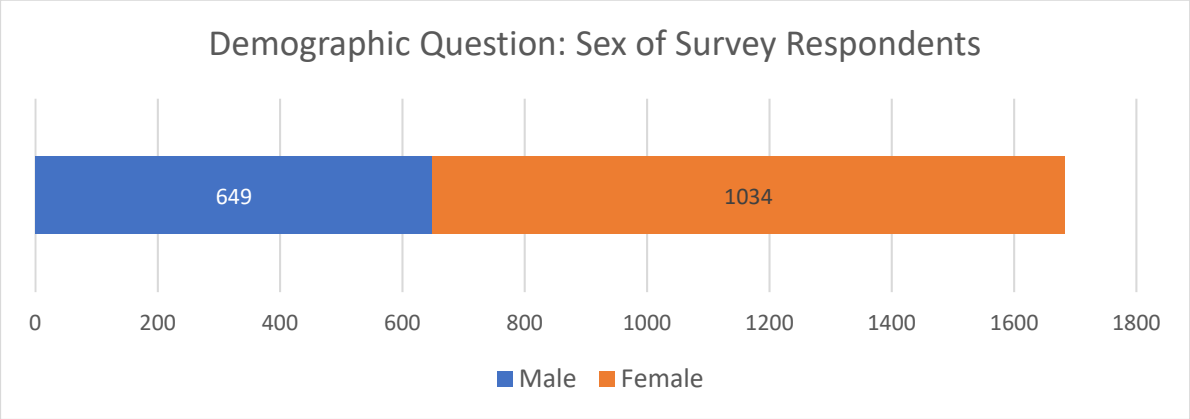


Figure 3 Sex Distribution of Survey Respondents

Figure 4 shows the distribution of education level among the survey respondents. Almost exactly half of survey respondents had at least a bachelor's degree, notably higher than the census estimated 29.7% of the general population of Iowa.

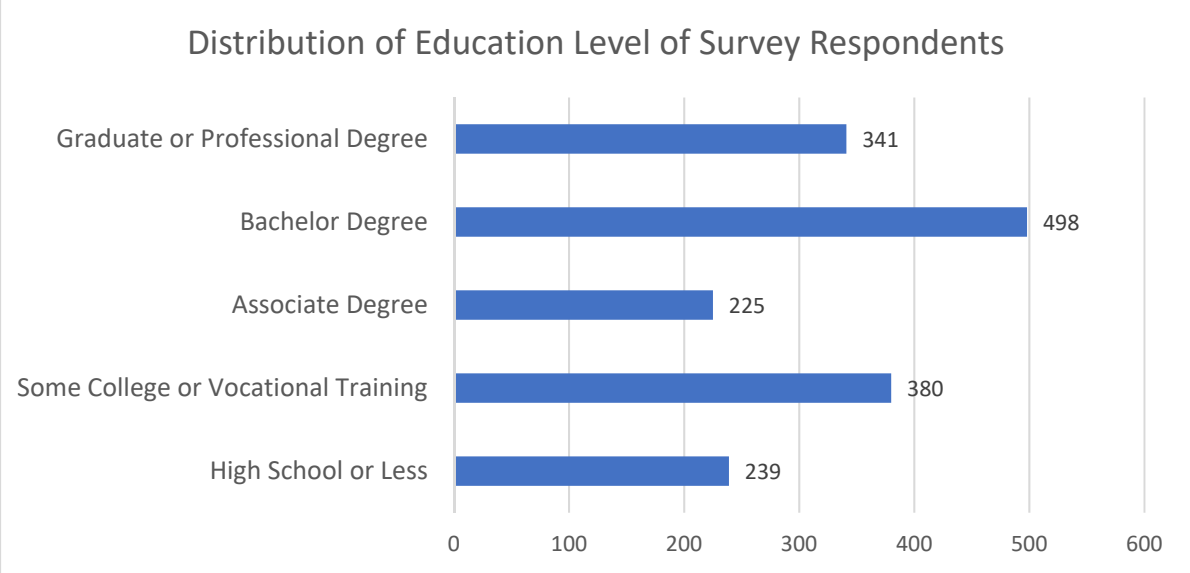


Figure 4 Distribution of Education Level of Survey Respondents

Figure 5 shows the current employment status of survey respondents. Just over half of survey respondents (54.6%) answered "employed for wages" or "self-employed," less than the estimated 66.8% of people estimated in the civilian workforce in Iowa. This difference is likely due to the higher percentage of retirees responding to the survey, consistent with Figure 6. Just

over 40% of respondents were over the age of 65, notably higher than the estimated 18.3% of the general population of Iowa (~23.5% of the estimated adult population).

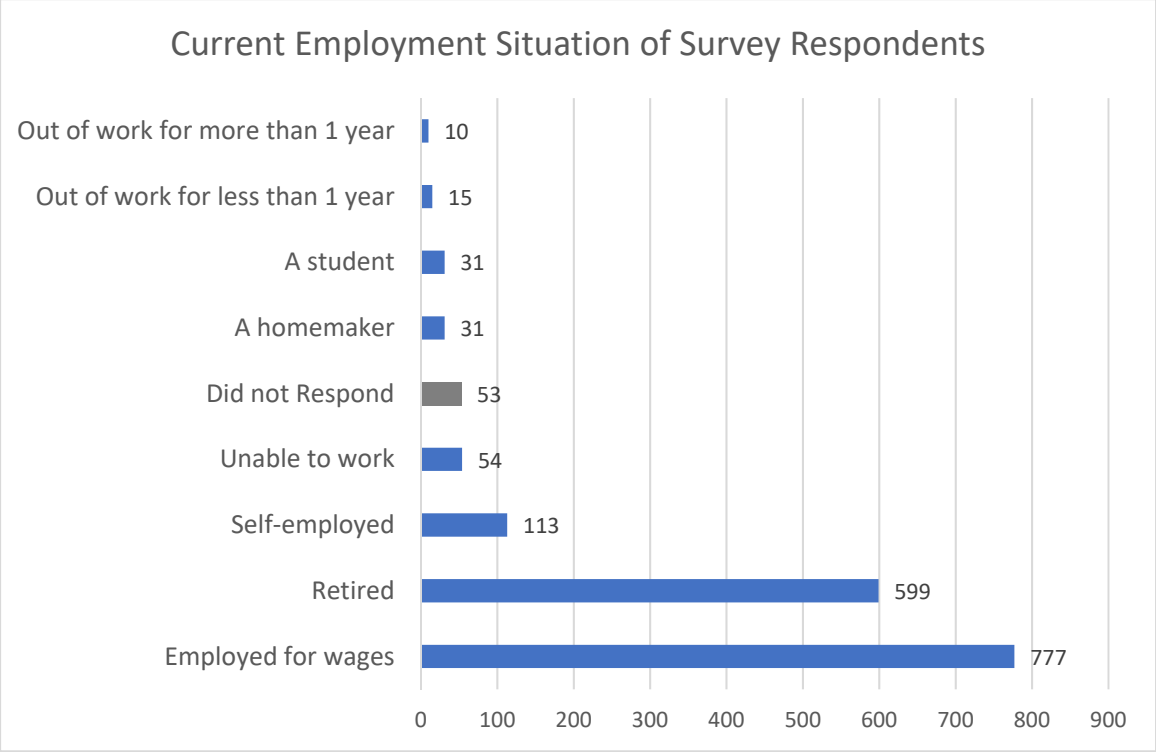


Figure 5 Current Employment Status of Survey Respondents

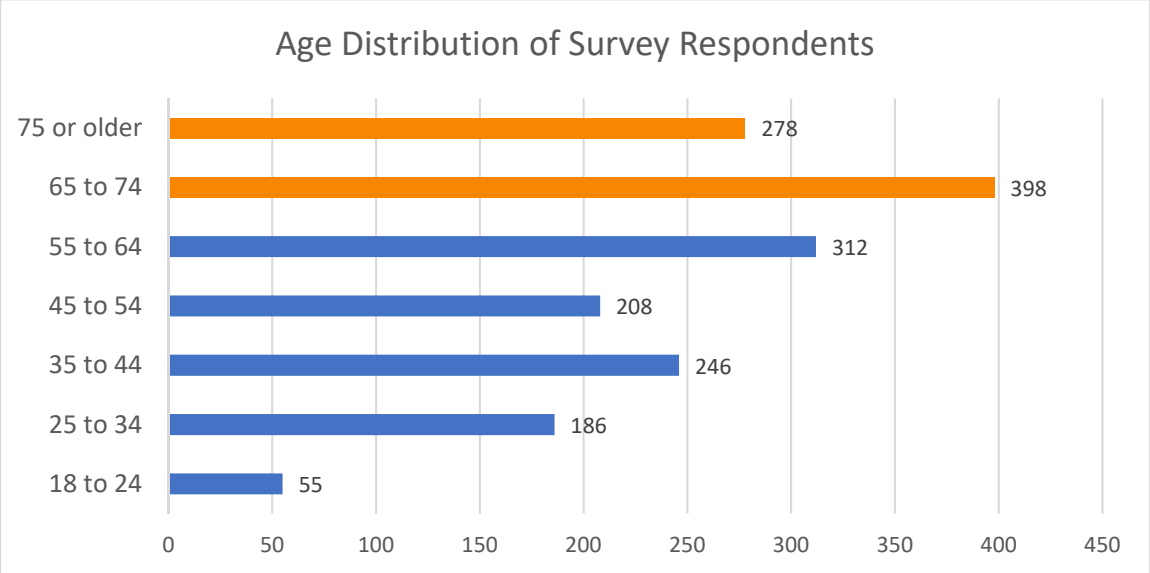


Figure 6 Age Distribution of Survey Respondents

Figure 7 and Figure 8 show the minority status of survey respondents as lower than the general population of Iowa. Only 2.6% of survey respondents identified as Hispanic, Latino/a, or Spanish, below the estimated 6.9% of the general population. Only 3.8% of survey respondents

identified as a race other than white, well below the estimated 10.2% of the state's minority population.

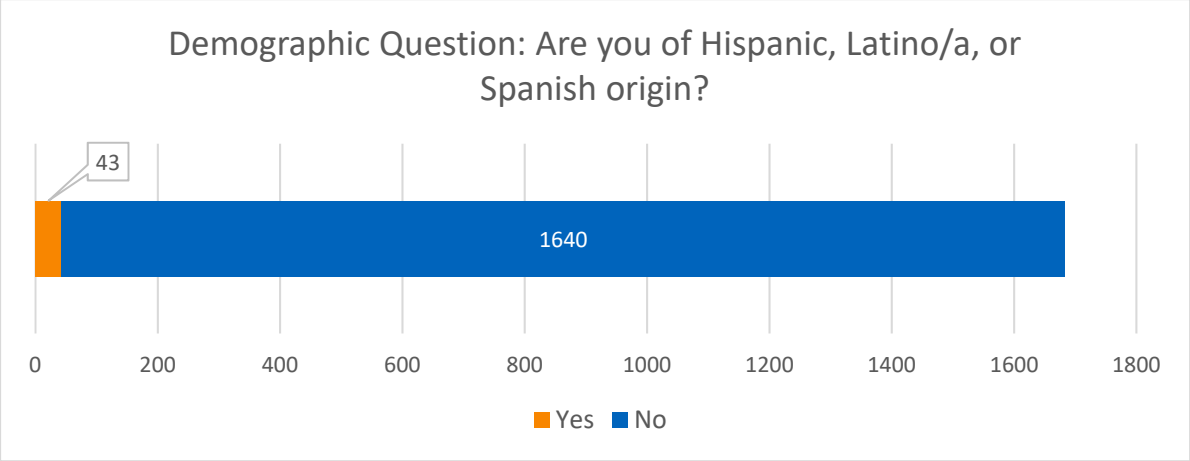


Figure 7 Hispanic, Latino/a, Spanish Survey Respondents

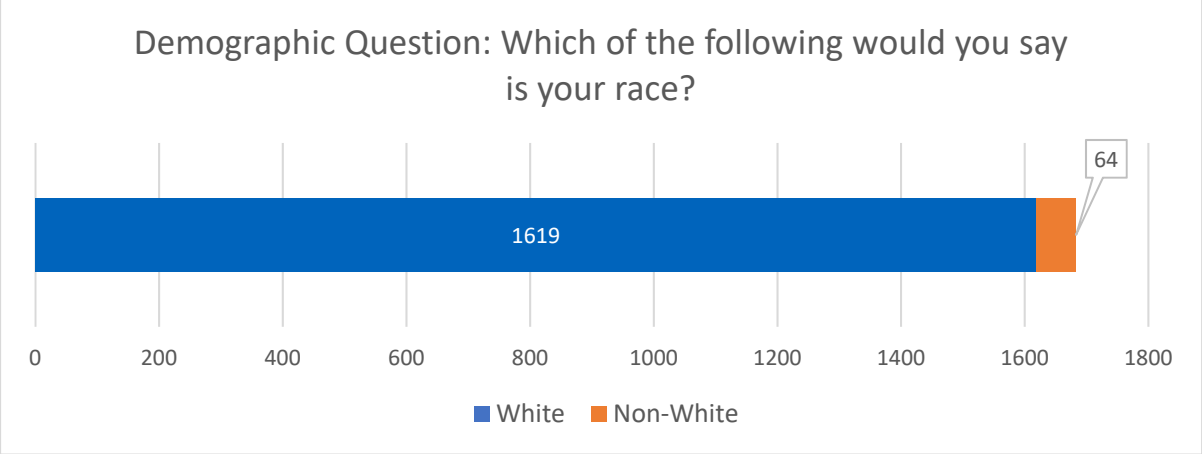


Figure 8 Race of Survey Respondents

The Digital Equity Act defines a rural resident as someone not living in urban areas. Urban areas are defined as population centers with at least 50,000 residents. This definition can be tricky when people self-identify with smaller towns and cities that border a larger city. For example, the City of Des Moines claims 211,034 residents while Windsor Heights, a small suburb, registers only 5,109. Residents of Windsor Heights are most certainly urban residents because they live in the Des Moines Metropolitan Statistical Area, but they may identify as residents of a "small city" when responding to a survey question depicted in Figure 9. To account for this, respondents that live in urban counties (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury) were automatically categorized as urban residents by survey analysis. Survey respondents who answered "farm or rural," "small town," "larger town," or "small city" (defined as 25,000-50,000 residents) in other counties likely live in a rural community. Figure 9 shows the raw count before the urban county assumption was applied (69.4% rural). After the assumption was applied, the percentage of rural resident respondents was assumed to be 45% compared to an estimated 49.6% of the population as a whole.

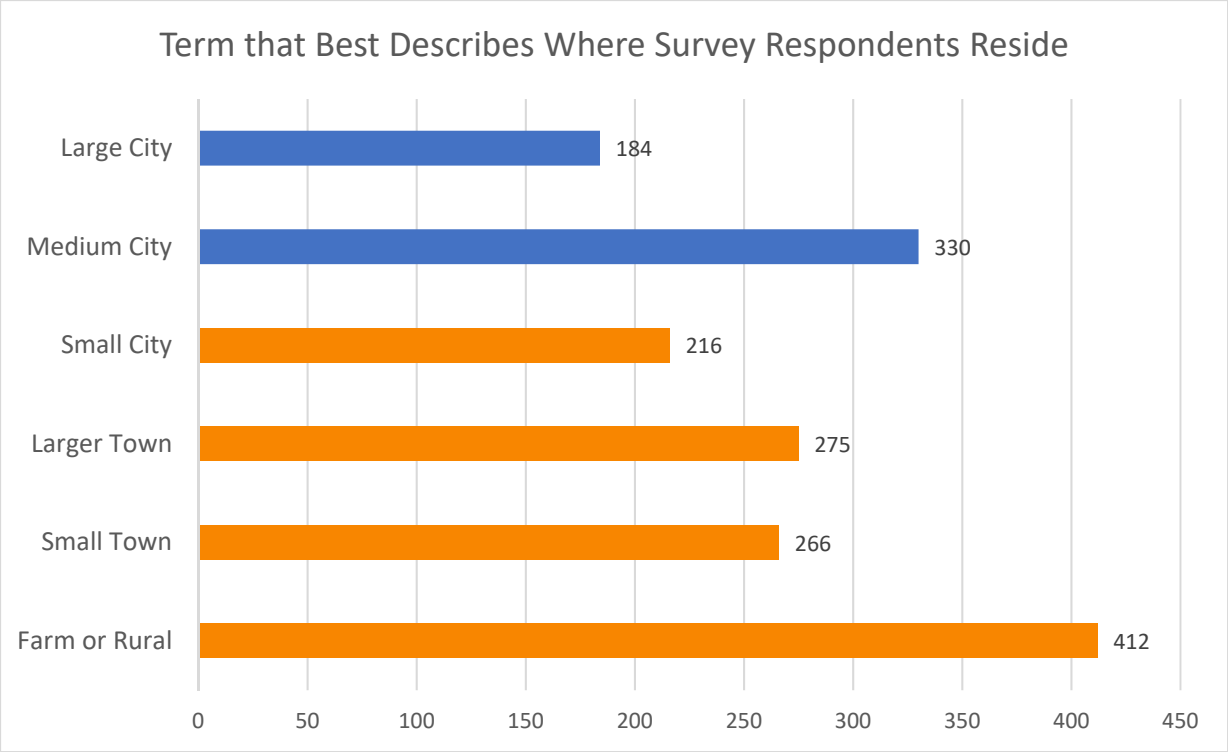


Figure 9 Residential Identity of Survey Respondents

Figure 10 shows approximately 7.8% of survey respondents served in the military, similar to the general population figure of 5.9%.

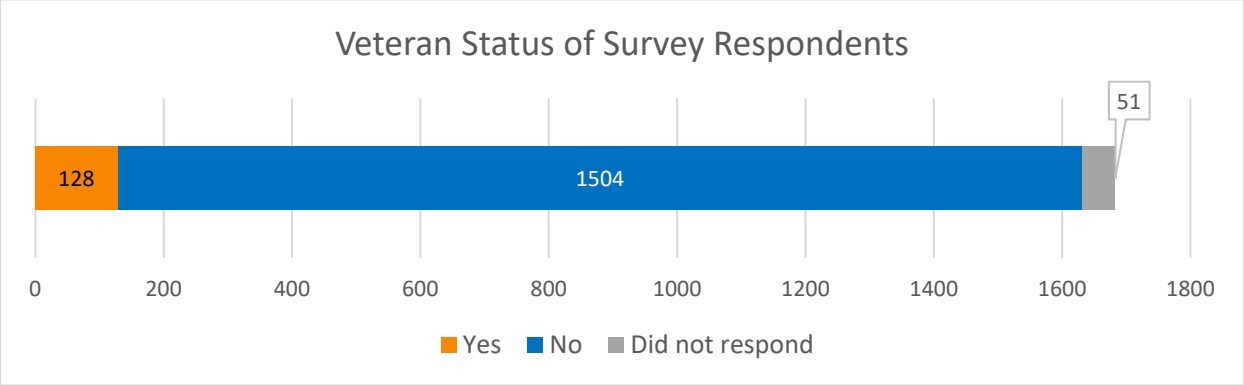


Figure 10 Veteran Status of Survey Respondents

Figure 11 shows the number of people who identified a specific challenge or disability. Note that this question allowed respondents to select all that apply. A total of 1,380 respondents marked that they do not have any difficulty with any of the identified challenges, leaving 303 people who did check at least one box. A total of 370 selection were checked below, implying some number of respondents checked two or more boxes. Overall, an estimated 12.6% of Iowans live with a disability according to the US Census and 18% of survey respondents identified one or more challenge or disability.

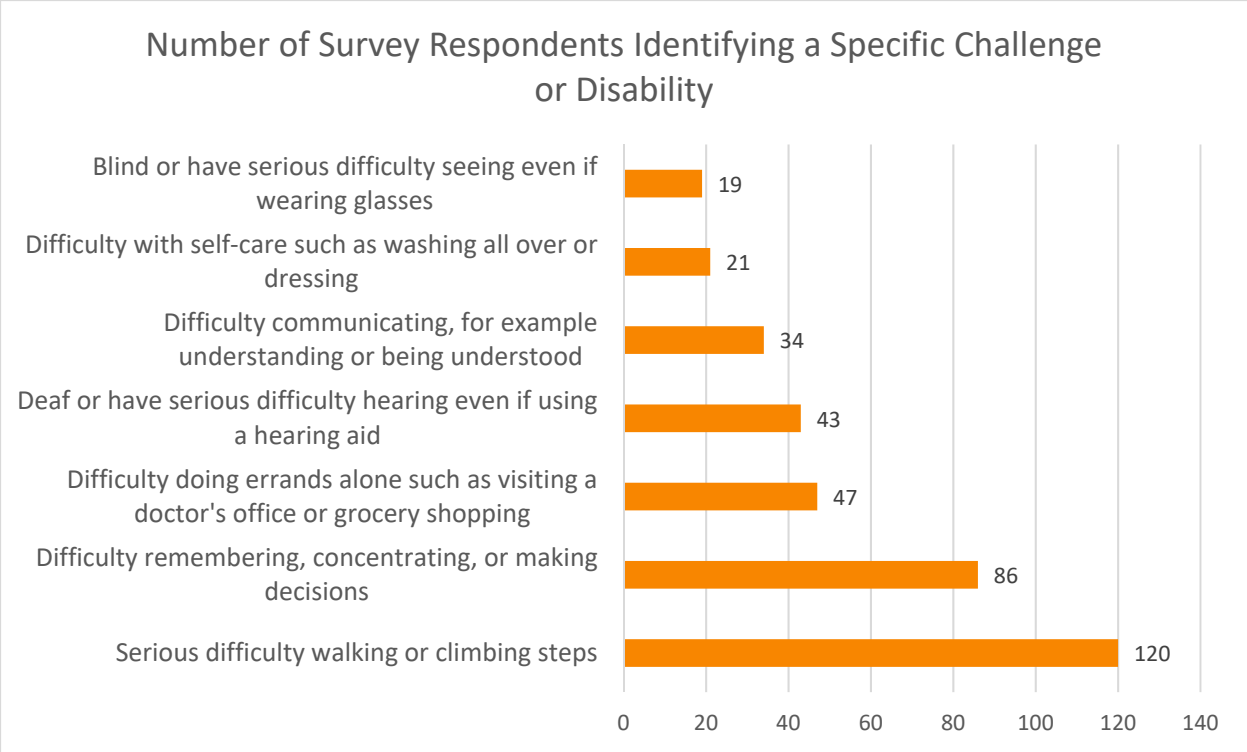


Figure 11 Survey Respondents Identifying Specific Challenges or Disabilities

An estimated 19% of Iowans live in a Covered Household, defined as those living in a home with an annual gross income of 150% or less than the federal poverty line. The federal poverty line is defined by annual gross household income and the number of individuals living in the household. Because of that, determining the likelihood a respondent would be from a Covered Household requires a calculation based on responses to Figure 12 and responses to other questions regarding the size of the household. All individuals who responded with a household income of less than $15,000 (orange bar) live in a Covered Household while those answering with incomes between $15,000 to less than $75,000 (green bars) may live in a Covered Household depending on the calculation. Those making at least $75,000 and above would have little pathway to being included in the Covered Household calculation. According to calculations from a combination of survey responses, a likely 258 respondents (15%) live in a Covered Household.

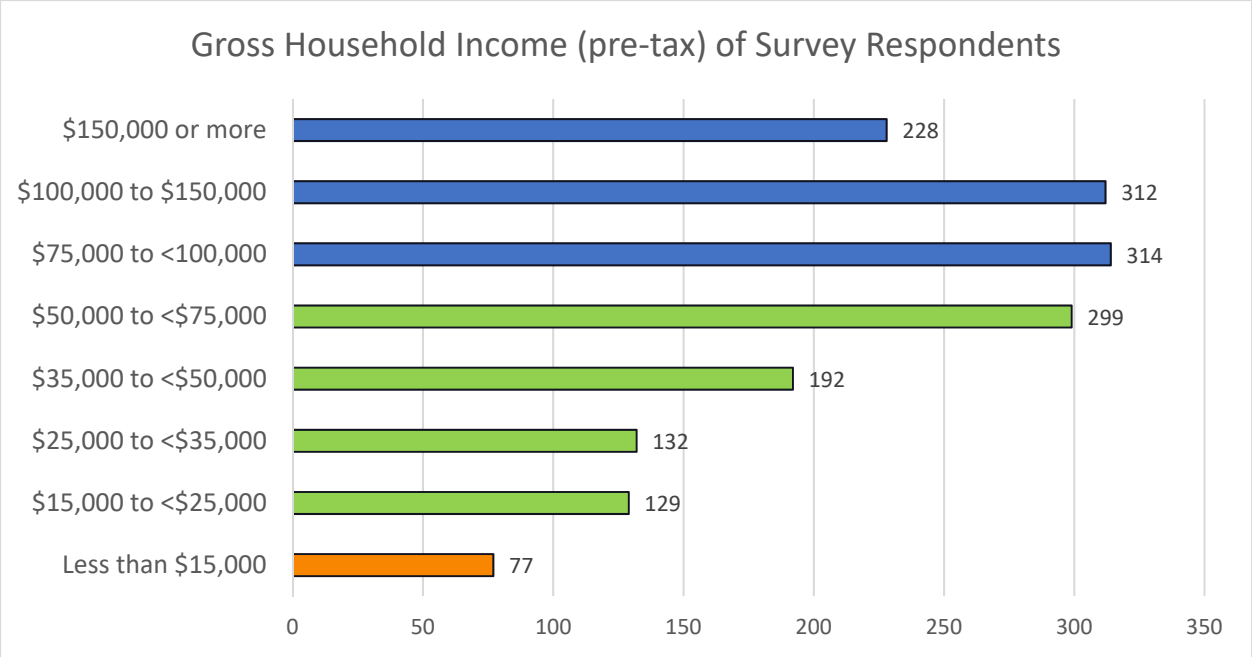


Figure 12 Gross Household Income (pre-tax) of Survey Respondents

Of the eight Covered Populations, the statewide survey includes responses from individuals who identify with at least six of those categories. Given the above breakdown, the survey achieved sufficient survey completion from aging individuals, covered households, veterans, individuals with disabilities, and rural residents. The respondent pool appears underrepresented by racial and ethnic minorities, however the adult population (18+) survey completion percentage is more closely aligned to the state average than the overall population numbers used above. The respondent pool is likely under representative of English Language Learners as there were no questions asked that would allow specific identification for categorization, however the survey was administered in both English and Spanish online with a note in Spanish on the printed packet with instructions on how to fill out the survey electronically. For purposes of the survey, an affirmative response to the demographic question asking if the individual identifies as Hispanic was assumed to be an affirmative response for English Learners as many individuals who identify as Hispanic in Iowa live in a household with individuals that speak English as a second language. DOM focused on Spanish language speakers as the majority of individuals speaking a non-English language at home speak Spanish. While only an estimated 4% of Iowans speak Spanish in the home, Spanish is the predominant non-English language spoken in the home in Iowa. In fact, according to the US Census Bureau, more Iowans speak Spanish in the home than all other non-English languages combined as illustrated in Figure 13. DOM recognizes that Spanish speakers are the largest group within this covered population. Reliable data for other groups, including those with low literacy rates, was not readily available or obtained through the survey, however Iowa was still able to identify likely barriers for all elements of the covered population. For this reason, DOM primarily focused data collection and baselines on Spanish speakers, representing the largest segment of English learners in the state.

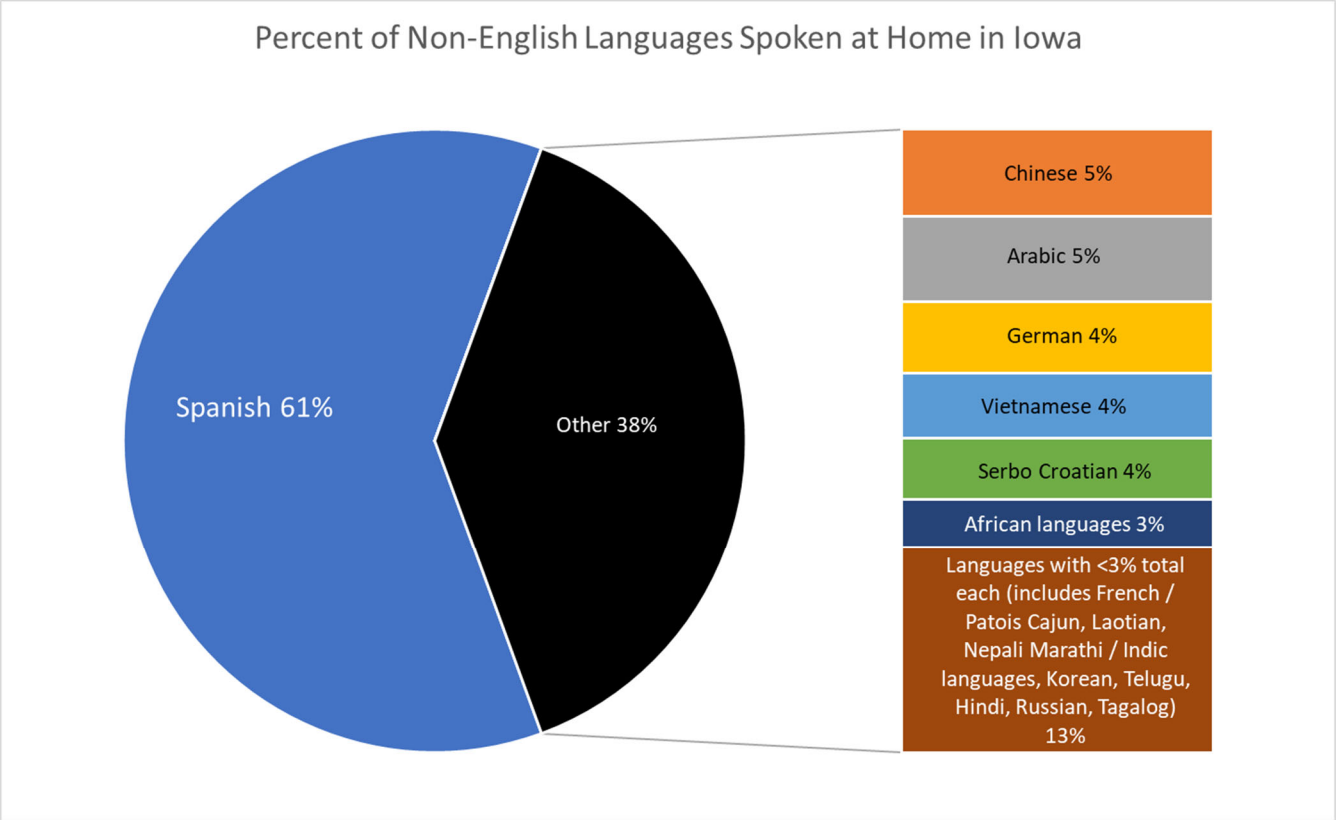


Figure 13 Percent of Non-English Languages Spoken at Home in Iowa. Spanish is the most frequently used language at 61%

Finally, no individuals who were incarcerated at the time of the survey had the opportunity to respond. To account for this variation, the survey uses a weighted approach to account for differences, where possible, in the respondent pool and the overall population. The main body of this report uses the unweighted response numbers in graphs to show the full accounting of responses and the weighted average when comparing Covered Population breakout data against the state average. Both numbers are available, along with the weighted methodology, in the survey write up in Appendix D.

Focus sessions were held with certain Covered Populations in order to gain better insight into that population's Digital Equity needs. To address two of the Covered Populations that were the most difficult to reach, the University of Northern Iowa conducted focus groups with individuals with a language barrier as well as the incarcerated community. Two focus group sessions were conducted with individuals with a language barrier. Four sessions were conducted with the incarcerated community – two sessions with incarcerated individuals and two sessions with those that work with that population. Additionally, two focus group sessions were conducted with aging individuals to gain enhanced understanding of the needs of that population in addition to the robust response rate from that demographic in the survey. The full reports for focus group methodology and conclusions start on Page 40 of the Statewide Survey in Appendix D. Below includes the summary conclusions from the focus groups.

The summary conclusions from the English Language Learners focus group from the full report below in italics:

The findings of the focus groups suggest that, in general, English Language Learners would benefit from more accessible and enhanced internet services (with faster speed and stability). They emphasized the importance of having at least fundamental digital skills. Across all focus groups, the consensus was that digital skills related to getting information and communicating on the internet are crucial. They highlighted regular struggles in getting information from the internet due to limited language proficiency, lack of familiarity with digital devices and services, and/or the high price of quality internet. These obstacles can reinforce digital inequalities and potentially prevent the benefits of quality internet from reaching English Language Learners and their communities.

Participants expressed interest in receiving training that is engaging and focusing on real-world scenarios that they may encounter. Thus, providing training through online tutorials, in-person walkthrough, and instructor-led sessions is desirable. At the same time, participants noted that with the growing prevalence of digital technology in daily life, issues around privacy and safety have become a concern for many.

The summary conclusions from the aging Iowans focus group from the full report below in italics:

Overall, the findings shed light on aging Iowan's experiences, needs, and perceptions regarding internet usage, highlighting both the benefits and challenges they encounter in the use of the internet and digital devices. Aging Iowans engaged in a wide range of activities, including remote work, entertainment, and communication by accessing the internet through smartphones, laptops, or personal computers. Digital skills were considered adequate or acceptable by some participants, although others acknowledged the need to learn new digital skills. Challenges related to getting information, such as remembering usernames and passwords were highlighted.

Participants sought various resources for support and learning digital skills. Training programs tailored for aging individuals were considered beneficial. In general, participants were satisfied with the overall internet access quality and reliability, although concerns were raised about high pricing, technical, and safety issues.

The positive value of the internet at both the societal and personal level was recognized for its convenience, ease of access to information and communication, and remote support capabilities. Safety and security concerns regarding online activities were expressed, with a specific emphasis on protecting younger family members when using the internet.

The summary conclusions from the incarcerated individuals focus groups from the full report is shared below in italics. Note that "II" stands for Incarcerated Individuals:

Overall, there was notable consistency in the views expressed in the discussion groups – in both the II groups and the Administrator/Staff groups. In the II groups, strong consensus emerged regarding limited/no access to the internet. While the IIs recognized the enhanced need for security, there was a strong desire to have some ability to access the internet in narrow and controlled ways. Additional concerns were raised by the IIs regarding the limited availability of fully-functioning computer hardware and software and the difficulty this poses for meeting

educational requirements like paper deadlines. Another major concern expressed was the lack of access to up-to-date information resources which do not require internet access. Access to broad information resources like Encyclopedia Britannica or training videos which can be downloaded and stored locally or DVD libraries which could be available through the library.

Related, there was a consensus that training in digital skills is critical for functioning in the current society and hence, the IIs expressed a strong desire for more structured, in-depth training beginning with typing and moving through Microsoft Office applications for word processing, spreadsheets, and internet search skills. There was no single mode that was suggested for the training but there was support for formal training in classes run by staff or professors, self-paced training via local videos or peer-to-peer training within the facility. There were also strongly held views in both groups that access to educational information was important to lower the risk of recidivism after release but also important to support the general dignity of those serving longer sentences to allow for self-improvement and education generally.

The administrator/staff discussions were also aligned regarding reported policies as well as the rationale for those policies. Safety and security were paramount as a key reason for restricting access to the internet. The NCF staff pointed to several examples of security risks related to the high proportion of sex offenders – many of whom committed crimes using technology/internet – and noted the key goal of protecting victims. The ICIW staff also noted the importance of reducing risks including risks to staff.

Both of the administrator/staff groups noted the importance of digital skill training for IIs but acknowledged the limited opportunities provided for structured, in-depth training. ICIW staff noted that IIs choosing to participate in a 6-week Life Skills course get some word processing and spreadsheet exposure (over 2 weeks) but there is no available in-depth training beyond that. Administrators and staff at both facilities also noted that there is limited hardware and software available to the IIs on a regular basis. Those enrolled in college classes have some additional access on occasion when/if the computer labs are open. The staff also noted that additional hardware and software also requires additional resources for both the equipment as well as the personnel to maintain it and ensure it meets the security requirements.

Lastly, individuals in the facility administrator/staff groups expressed support for digital access, and increasing digital skills. They viewed these as important foundations for preparing IIs for a successful return to their communities upon release. They also lamented the fact that they were not in a position to do more to effectively facilitate such training at the current time.

2.1.2 Broadband Adoption

Iowans overwhelmingly subscribe to broadband internet, demonstrated by the survey question below showing use of Wi-Fi internet at home according with over a 90% adoption rate. Only about 8% say they have no access as shown in Figure 14.

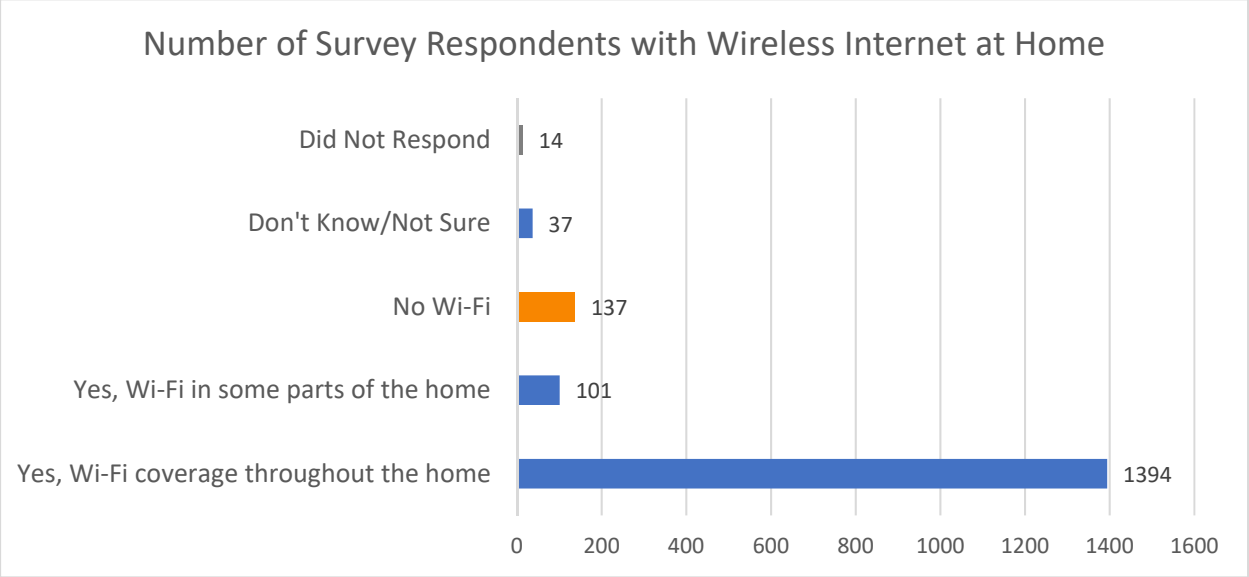


Figure 14 Number of Survey Respondents with Wireless Internet at Home

Sorting respondents into different covered populations based on the demographic questions asked in the statewide survey allows for a more nuanced analysis. Due to the number of responses per population group and the relative difficulty of reaching certain populations, some of the covered populations will have sufficient cases for subgroup analyses while others may contain more useful anecdotal evidence moving forward. Each chart will list covered populations top to bottom in simple charts or left to right in more complex charts in the same order as follows:

- "Rural" - Individuals who primarily reside in a rural area
- Aging individuals – divided into two subgroups of
  - "Age 65-74"
  - "Age 75+"
- "Covered HH" or "Cov. HH" – Individuals who live in covered households
- "Veterans" or "Vets" - Veterans
- "Minority" – Individuals who are members of a racial or ethnic minority group
- "English Learners" or "ELL" – Individuals with a language barrier. For purposes of data collection, DOM focused on Spanish speakers as primary non-English language spoken in Iowa
- "Disabilities" – Individuals with disabilities

Each of the tables like the below uses conditional formatting to help show the relative difference between the covered population's percentage and the statewide average. The midpoint of the chart will be without color (white) and equal to the statewide percentage response. If a covered population has a more favorable percentage relative to the statewide percentage, that number will be shaded in blue, with the darker the shade indicating a more favorable percentage than a lighter shade. If a covered population has a less favorable percentage, that number will be shaded in red, with the darker the shade indicating a less favorable percentage than a lighter shade. Each will correspond with the figure directly above the table. The statewide percentage number is the weighted average.

Statewide %	**91**
Rural	88
Age 65-74	88
Age 75+	78
Covered HH	86
Veterans	92
Minority	86
English Learners	91
Disabilities	76

The percent of survey respondents with wireless internet at home (throughout the home or in some parts of the home) have been broken out by Covered Population.

Rural area respondents had slightly less broadband adoption (88%) than the statewide average, which would be consistent with DOM's statewide availability of broadband maps that show remaining need for access in part of rural Iowa. Other Covered Populations reporting lower broadband internet adoption rate appear in the aging population, particularly aged 75+ (78%), and those with disabilities (76%).

Figure 15 shows the variety of internet technology used at home, including those that use more than one means of connection. These two figures together tell us that the majority of Iowans have Wi-Fi technology, but Iowans have not achieved universal usage at this point.

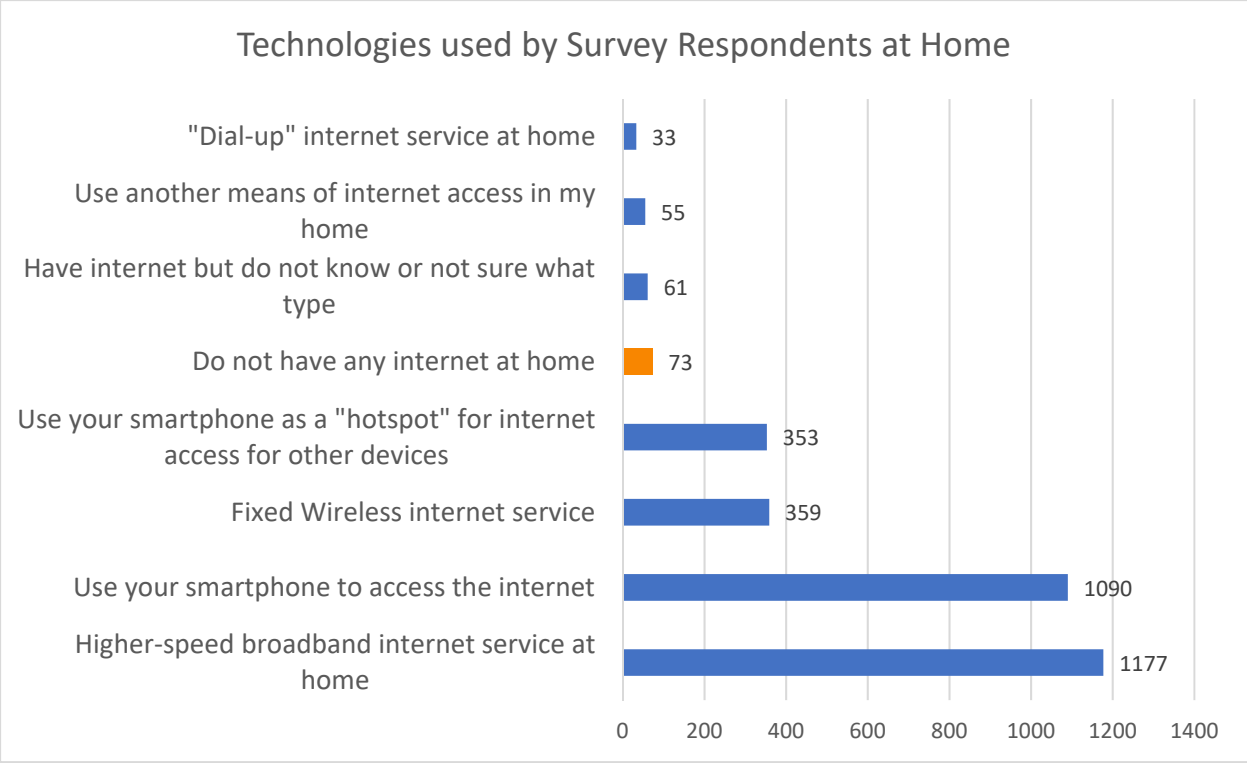


Figure 15 Types of Internet Technology Used by Survey Respondents at Home

Figure 16 charts the satisfaction of respondents with the quality of their home internet service. Approximately 29% of respondents said they were somewhat dissatisfied or very dissatisfied with their internet service. That result may speak to the issue of “reliability” of internet service, which is a term that can be used to catch many potential user complaints like upload/download time, buffering, or service interruptions. In some instances, Iowans may have a provider available in their area but may experience poor service that leaves them frustrated. This was consistent with anecdotal evidence gathered during the town hall meetings, described in the following section of the report. Note that the category “Did not respond” includes individuals who were asked not asked on the web version and who were instructed to skip on the paper version of the survey because they reported they did not have home internet access on an earlier item.

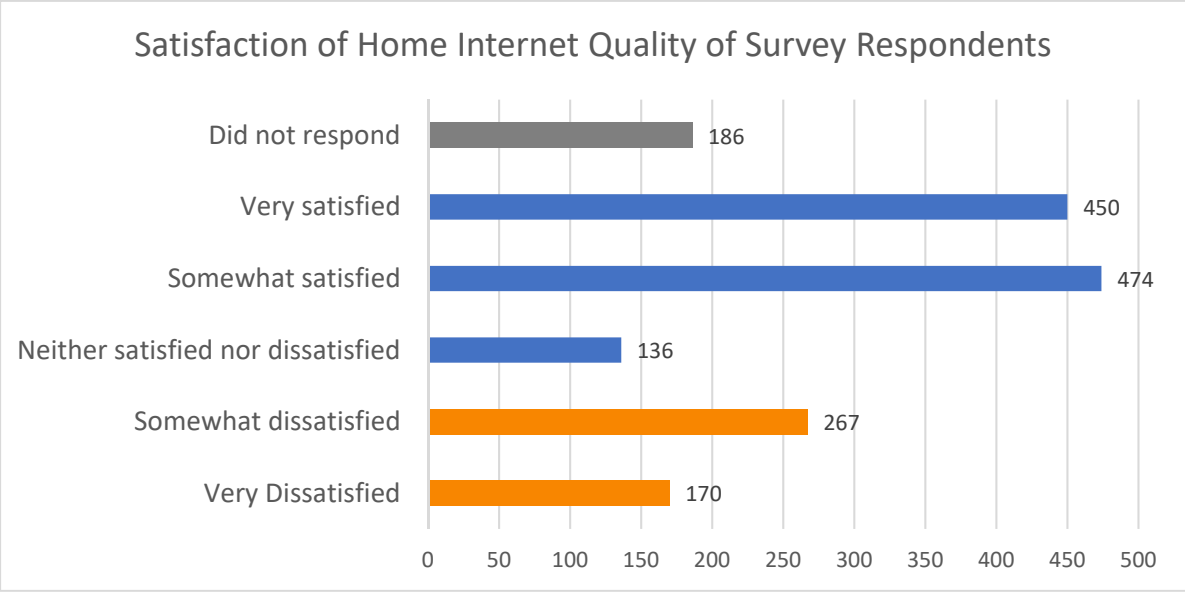


Figure 16 Satisfaction of Home Internet Quality of Survey Respondents

Statewide %	**30**
Rural	33
Age 65-74	34
Age 75+	40
Covered HH	32
Veterans	34
Minority	23
English Learner	30
Disabilities	48

Percent of survey respondents who responded “somewhat dissatisfied” or “very dissatisfied” with their home internet quality, broken out by Covered Population.

Most of the Covered Populations had a slightly higher rate of dissatisfaction than the statewide population at large. However, the aging population, particularly those in the 75+ demographic, and individuals with disabilities, had a substantially higher than average dissatisfaction rate of 40% and 48% respectively.

A little over half of respondents routinely accessed the internet for employment or for work outside the home, as illustrated in Figure 17. Note that a notable percentage of respondents were not employed as many were of retirement age.

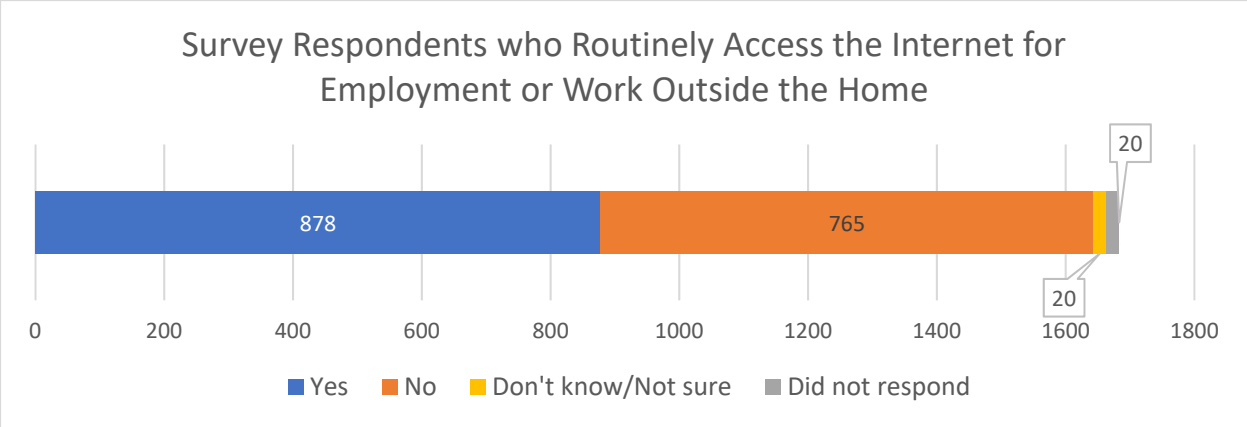


Figure 17 Survey Respondents who Routinely Access the Internet for Employment Outside the Home

Statewide %	**58**
Rural	50
Age 65-74	30
Age 75+	11
Covered HH	44
Veterans	59
Minority	49
English Learner	58
Disabilities	38

Percent of survey respondents who routinely access the internet for employment outside the home, broken out by Covered Population.

The rates for aging populations accessing the internet for employment outside the home are expectedly low, as many Iowans are retired that fit in that demographic. There is a strong urban / rural split in this question, with 50% of rural resident respondents saying they access the internet outside the home for work against 64% of urban residents. Individuals who live in Covered Households (44%), Individuals from Racial and Ethnic Minorities (49%), and Individuals with Disabilities (38%) all responded at a notably lower rate than the statewide average.

2.1.3 Broadband Affordability

According to the US Census1, the median household income in Iowa was $65,429 in 2021, just below the national mark of $69,021. Respondents to the statewide survey tended to be from households with a higher income, with 854 respondents in gross household incomes over $75,000 compared to 530 respondents from households making less than $50,000 (299 respondents identified a household income of $50,000 - <$75,000). Figure 18 shows the distribution of household income of survey respondents.

1 *https://www.census.gov/quickfacts/fact/table/IA,US/INC910221*

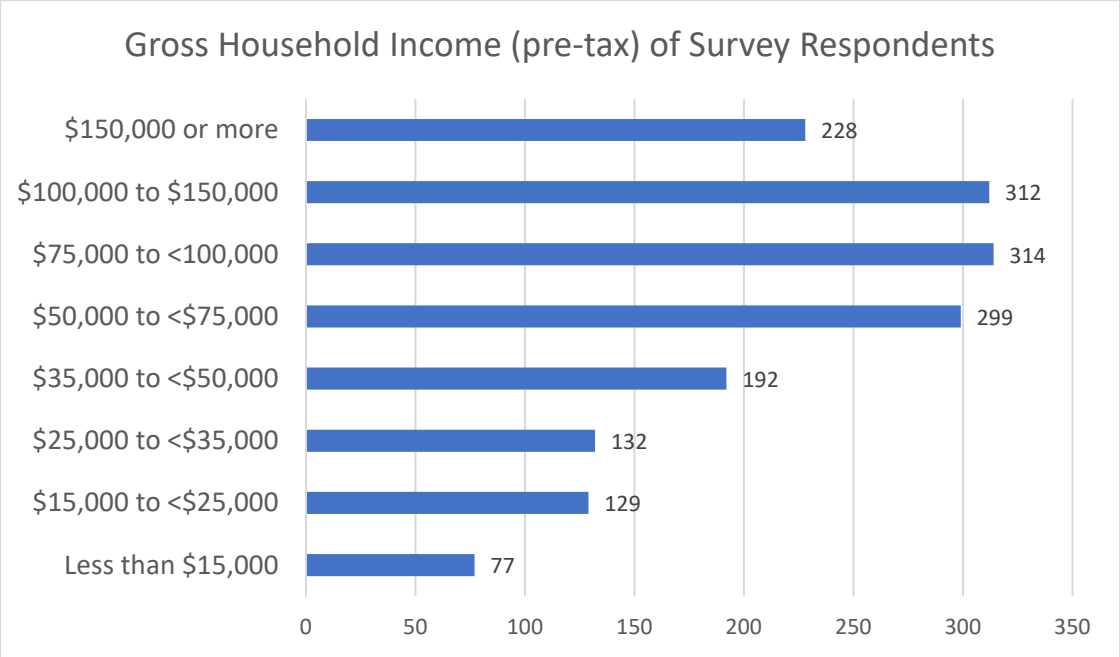


Figure 18 Gross Household Income (pre-tax) of Survey Respondents

With the income distribution of survey respondents in mind, consider Figure 19. A total of 377 respondents said it was somewhat or very difficult to fit a monthly internet bill into their household budget versus 1,092 people who claim it was not too difficult or not at all difficult. That's just over 25% of respondents that provided a response that believes it is a challenge.

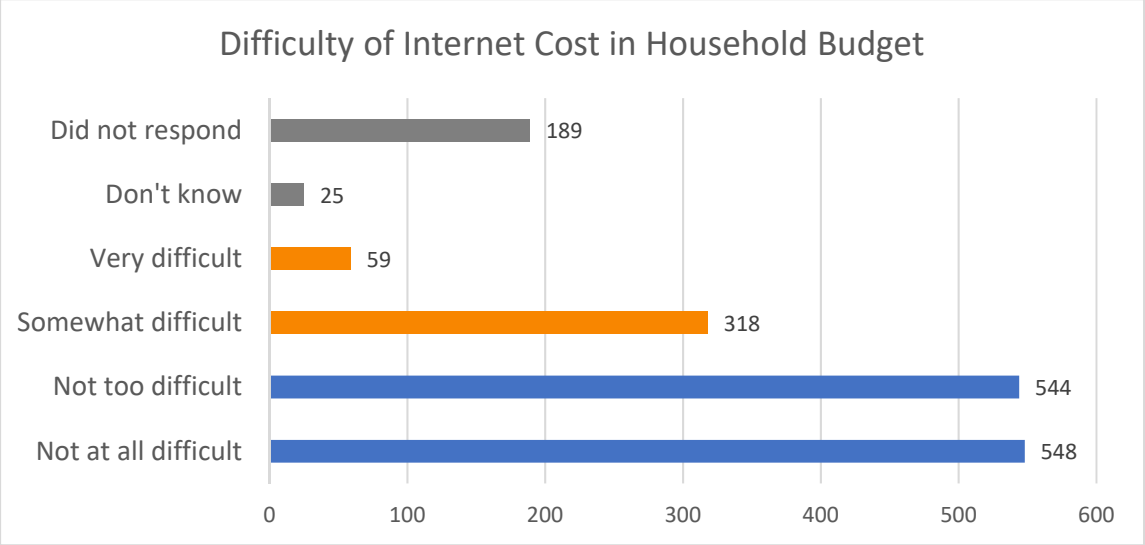


Figure 19 Difficulty of Fitting in the Cost of Internet Subscription in Household Budget According to Survey Respondents

Statewide %	25
Rural	29
Age 65-74	22
Age 75+	23
Covered HH	32
Veterans	29
Minority	44
English Learner	40
Disabilities	59

Percent of survey respondents reporting it is “somewhat difficult” or “very difficult” to fit their monthly internet bill into their household’s budget, broken out by Covered Population.

Rural residents and Veterans showed a modest difference in the difficulty of affording home internet compared to the state average. Interestingly, Individuals in Covered Households indicated difficulty at a 32% rate, notably lower than Individuals in Racial and Ethnic minorities (44%) and the English Learners demographic (40%). The highest percentage by far was received from Individuals with Disabilities with 59%, more than double the statewide average, indicating a disproportionate number of Individuals with Disabilities have difficulty affording a broadband internet subscription.

While the cost of internet service can vary widely depending on the service’s speed and reliability, it can be useful to see the distribution of monthly costs identified. Figure 20 shows the approximate cost of monthly internet service, which may influence the responses in Figure 19. The responses from those that pay for broadband service break out roughly into three main categories: greater than $80 (531, 38%), from $61-$80 (403, 29%), and $60 or less (446, 32%). There were no notable differences in cost of broadband between the Covered Populations.

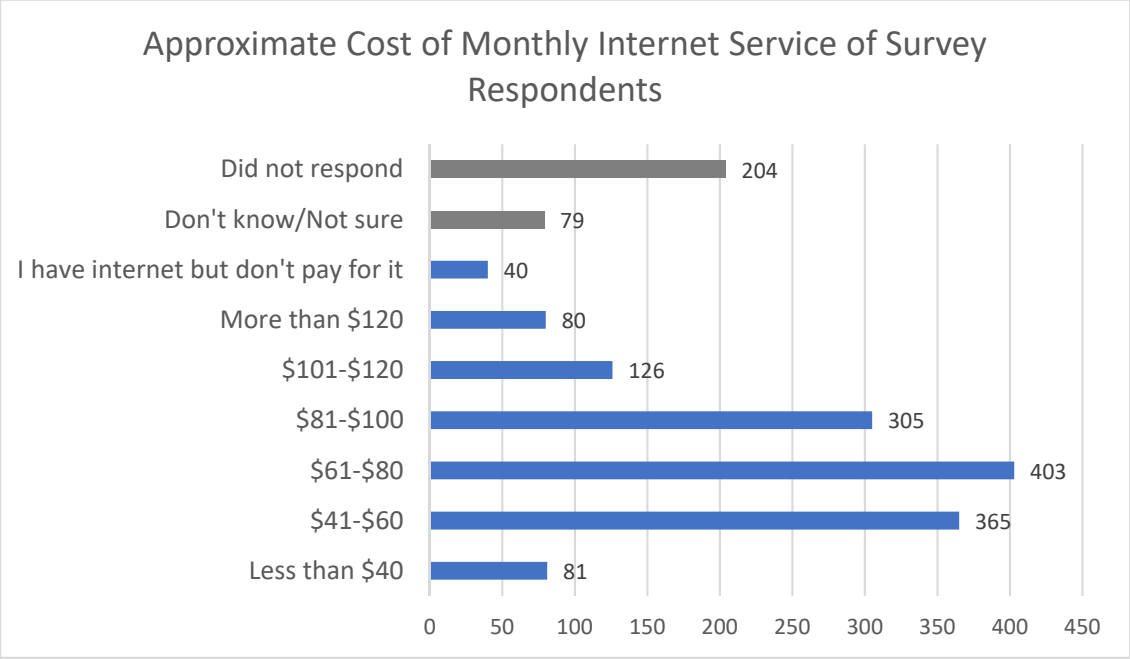


Figure 20 Approximate Cost of Monthly Internet Service of Survey Respondents

2.1.4 Digital Devices

A vast majority of survey respondents reported having a smartphone with an internet connection. Over half of respondents reported having a tablet and/or laptop computer with just under half of respondents with a desktop computer, as illustrated in Figure 21.

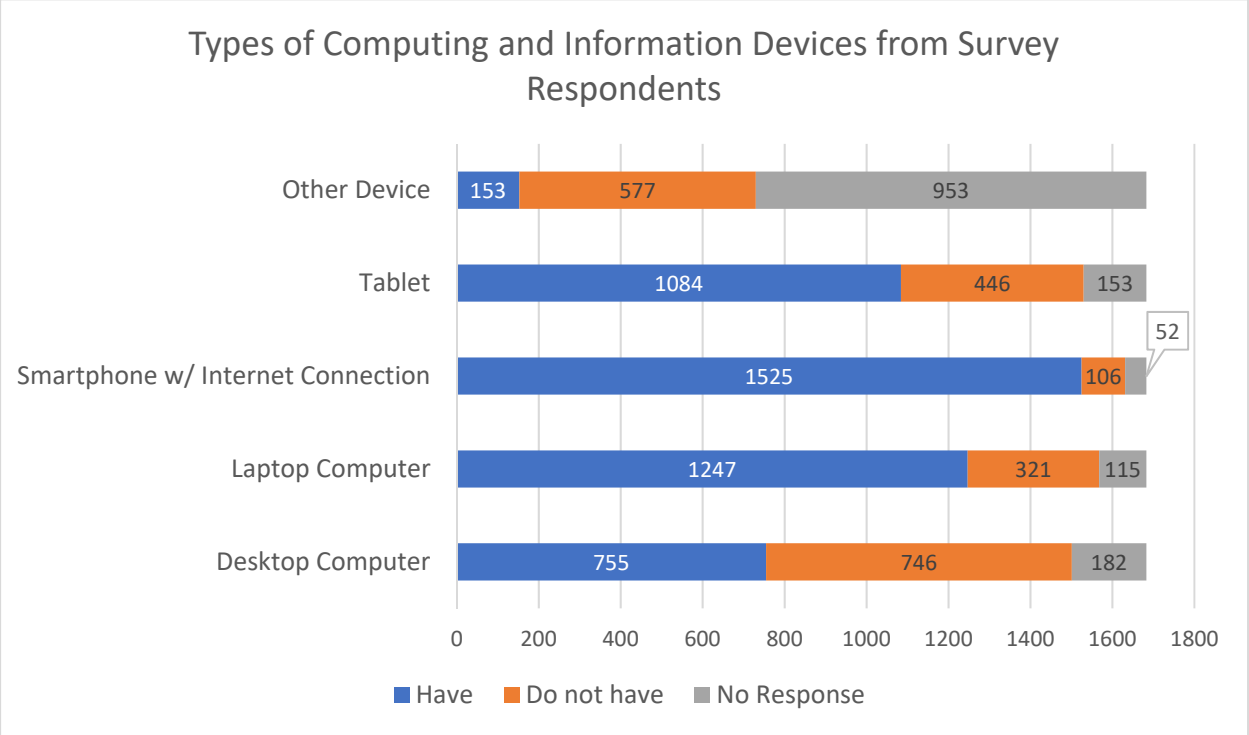


Figure 21 Types of Computing and Information Devices Available to Survey Respondents

Percent of respondents with different types of computing and information device(s) the home					
	Desktop Computer	Laptop Computer	Smartphone w/ Internet Connection	Tablet	Other Device
Statewide %	**50**	**78**	**94**	**68**	**19**
Rural	46	76	92	65	20
Age 65-74	61	67	88	61	24
Age 75+	55	70	79	57	10
Covered HH	41	80	93	67	12
Veterans	55	82	88	69	18
Minority	39	59	100	61	4
English Learner	17	60	98	53	4
Disabilities	42	55	85	46	9

Percent of survey respondents that report having different types of computing and information devices in the home, broken out by Covered Population.

Focusing in on the Covered Population breakdown, aging individuals tended to have more desktops than average but fewer laptops, tablets, and smartphones. Of particular note with

aging individuals was the notable drop between Age 65-74 and Age 75+ with smartphone usage (88% to 79% compared to 94% statewide average). Individuals in a Racial and Ethnic Minority and English Learners respondents had near-universal usage of a smartphone but lower than average rates of ownership of desktops, laptops, and tablets. The English Learners population in particular had only 17% ownership rate of desktop computers relative to the statewide average of 50%. Individuals with disabilities had consistently lower than average usage of all device types.

Figure 22 shows the number of survey respondents who believe they have enough digital devices available to meet the needs of those living in the home. Over 10% of respondents indicated that they did not have enough digital devices in the home or did not respond to the question.

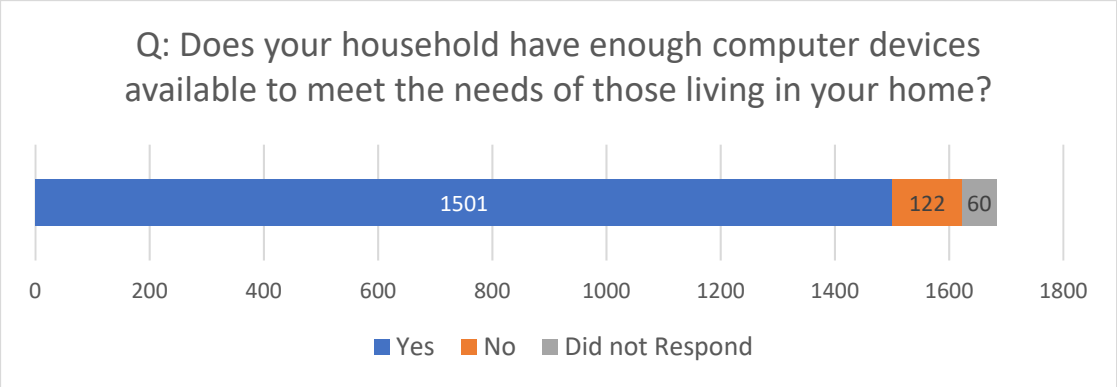


Figure 22 Are there Enough Computing Devices to Meet the Needs of Those Living in your Home

Statewide %	**88**
Rural	87
Age 65-74	95
Age 75+	91
Covered HH	77
Veterans	90
Minority	59
English Learner	54
Disabilities	73

Percent of survey respondents that report having enough computer devices available to meet the needs of those living in their home, broken out by Covered Population.

When breaking the responses out by Covered Population, respondents from Racial and Ethnic Minority groups and English Learners individuals had the widest gap – 59% and 54% respectively compared to the average of 88%. Individuals in Covered Households (77%) and Individuals with Disabilities (73%) similarly responded with a lower than average rate.

One issue that comes with all technology and computer devices is maintenance and troubleshooting. The series of questions illustrated in the following figures tries to investigate how people are troubleshooting their technology issues. Figure 23 establishes the subset of

individuals that have had an electronic device fail in the last six months. Figure 24 illustrates the type of digital device the respondent had issues with and Figure 25 explores the resources used to help fix the issue.

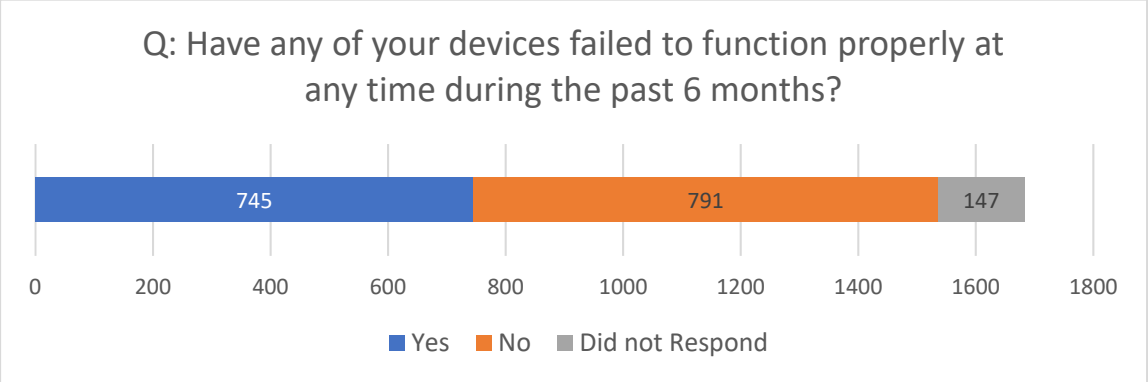


Figure 23 Device Failure

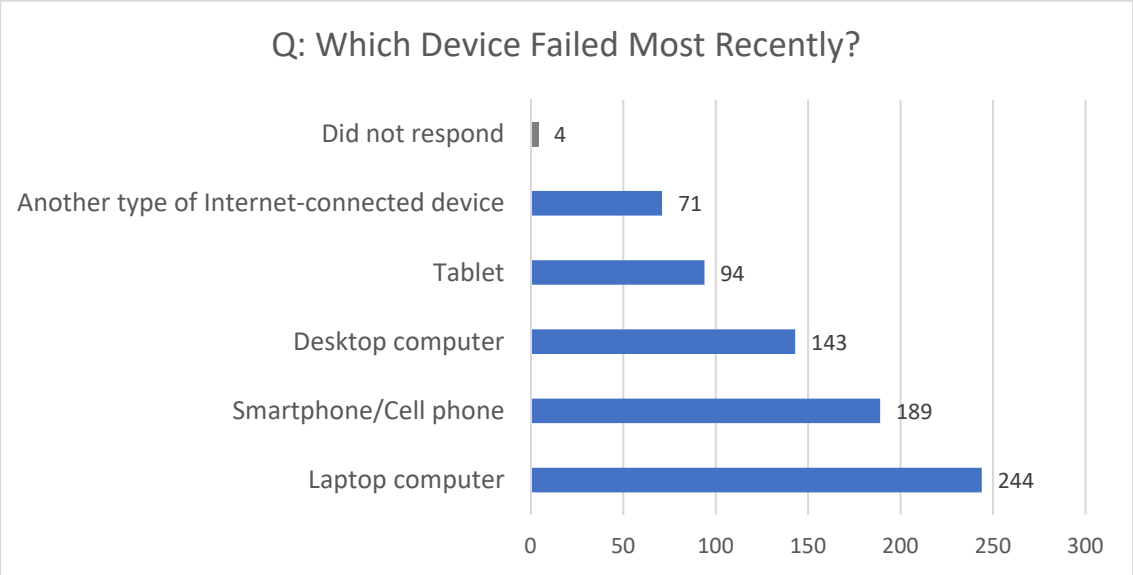


Figure 24 Type of Device that Failed

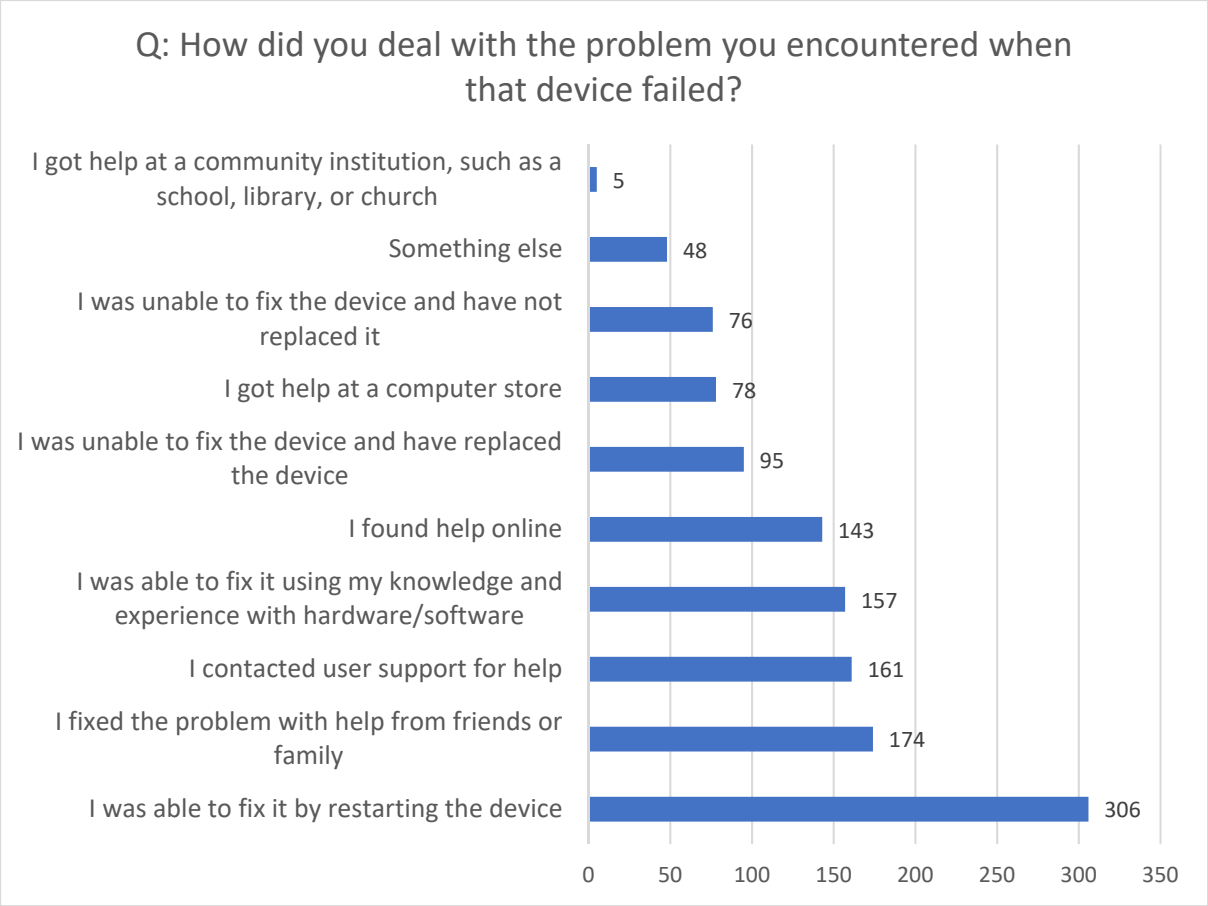


Figure 25 How Survey Respondents Dealt with Device Failure

Finally, Figure 26 asks respondents to identify if they use special equipment or software to help use an electronic device because of a disability. A total of 23 respondents indicated that they did use some kind of special equipment or software.

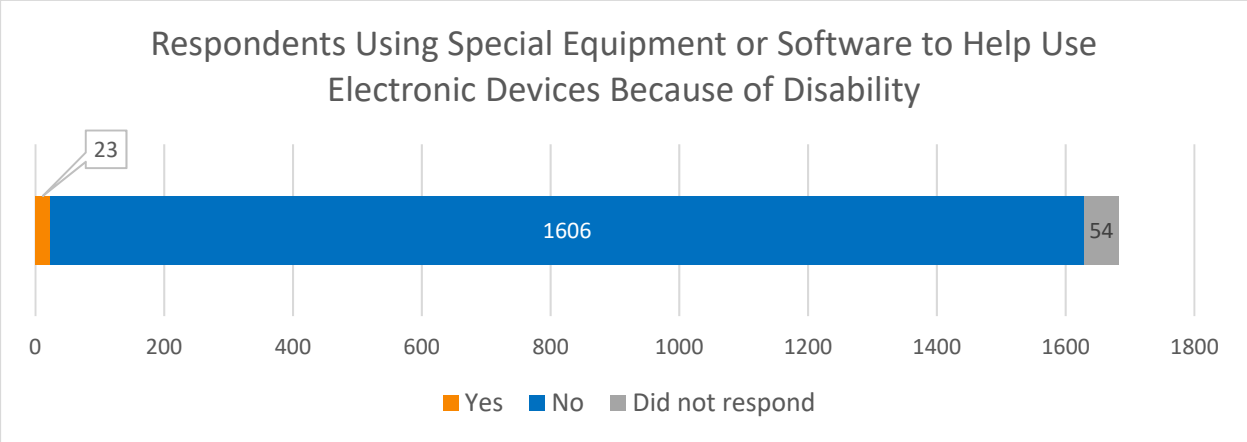


Figure 26 Special Equipment to Overcome Disability Used by Survey Respondents

Important to note, the State of Iowa is unaware of a certified entity within the borders of the state that refurbishes devices that can serve statewide needs. In order to close the gap with regards

to digital devices in the state, the refurbishment of devices stands as a critical piece to connect potential supply of devices from private business and public entities to the demand of Iowans in need of support.

2.1.5 Digital Skills

Digital skills are vast in number and breadth. All Iowans sit somewhere on a spectrum of digital skill abilities and how to apply those skills in online settings. As the number of activities online increases, the number and variety of digital skills required to successfully navigate those activities must also increase. This results in a lifetime learning challenge for all Iowans to be able to keep up with the skills needed to navigate daily life. The statewide survey attempted to gain a baseline understanding of Iowan's comfort level in completing a variety of online activities. Figure 27 illustrates respondent's confidence in using devices to accomplish online tasks. Just over half of respondents reported they were "very confident," leaving a notable portion of respondents with room to grow in their abilities.

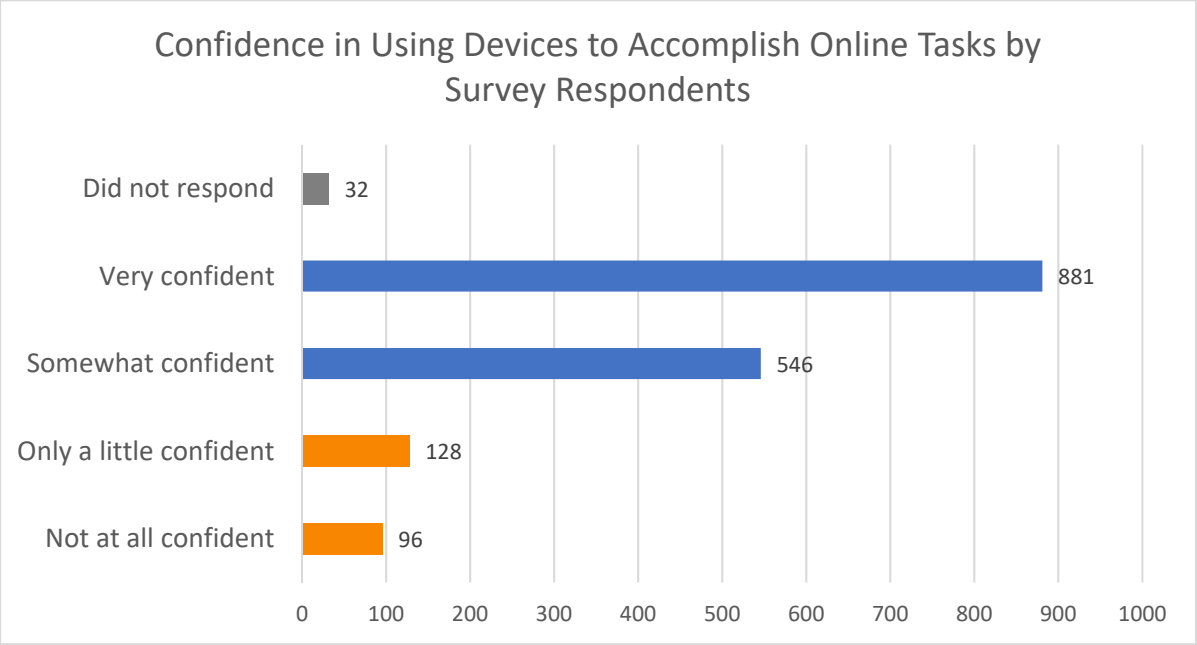


Figure 27 Confidence in Using Devices to Accomplish Online Tasks by Survey Respondents

Statewide %	**13**
Rural	15
Age 65-74	21
Age 75+	38
Covered HH	14
Veterans	17
Minority	13
English Learner	7
Disabilities	29

Percent of survey respondents that report feeling "not at all confident" or "only a little confident" using computers, smartphones, or other electronic devices to do things they need to do online, broken out by Covered Population.

When looking at the breakdown by Covered Population, confidence decreases notably with aging individuals, particularly pronounced by the difference between the two aging categories. Additionally, Individuals with Disabilities reported a much lower rate of confidence in completing online activities. Respondents identifying as English Learners had a notably higher confidence rate compared to the statewide average.

Figure 28 illustrates how survey respondents deal with information and communication technology. Respondents were asked to select how well the prompt described them. The results are shown left to right as “not well at all” (blue), “not too well” (orange), “somewhat well” (green), and “very well” (yellow). Those that did not respond are tallied and recorded in the last segment in grey. The questions themselves are stacked top to bottom based on the number of “not well at all” responses. Overall, most Iowans feel that they deal with too much information in their daily lives. Furthermore, most Iowans find it difficult to know whether the information they find online is trustworthy. A little more than a third of respondents often feel frustrated when using technology while a similar percentage of respondents need help setting up a new device they receive. Those two answers combined are important to understand the importance of establishing the basics of use for people when receiving new technologies if end usage goals are expected to be met.

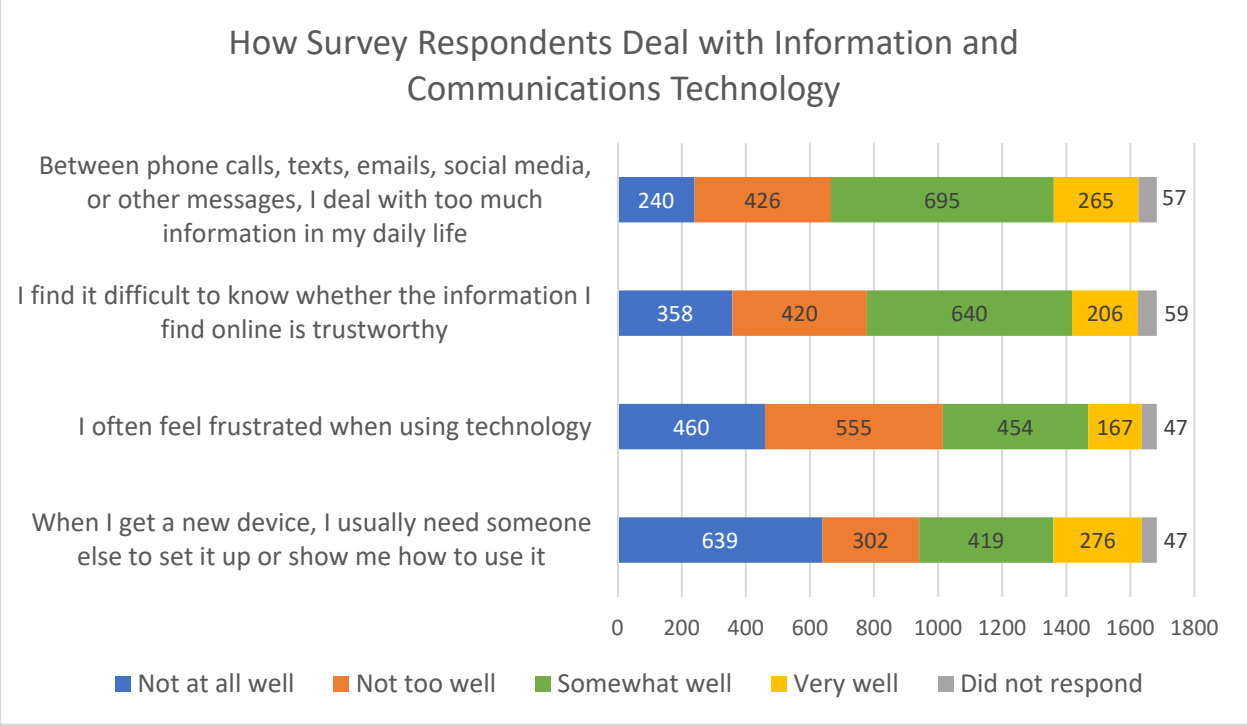


Figure 28 How Survey Respondents Deal with Information and Communications Technology

	Too Much Info	Is online information trustworthy?	Frustrated when using technology	Need help setting up new tech
Statewide %	**57**	**52**	**37**	**41**
Rural	57	57	42	49
Age 65-74	57	64	47	63
Age 75+	62	65	66	63
Covered HH	64	58	44	47
Veterans	59	52	41	46
Minority	51	51	42	60
English Learner	68	63	33	65
Disabilities	55	58	49	57

Percent of survey respondents that the following statements describe them “very well” or “somewhat well,” broken out by Covered Population.

Aging individuals showed a notably higher than average rate in identifying with the above statements relative to the statewide average. Individuals that identified as English Learners needed additional help setting up tech to start, but reported the lowest rates of frustration using technology among Covered Population groups.

Despite challenges with digital devices, the majority of survey respondents feel that electronic devices do make them more productive. Figure 29 shows that more than three quarters of survey respondents felt the statement “I am more productive because of my electronic information devices” described them “somewhat well” or “very well.”

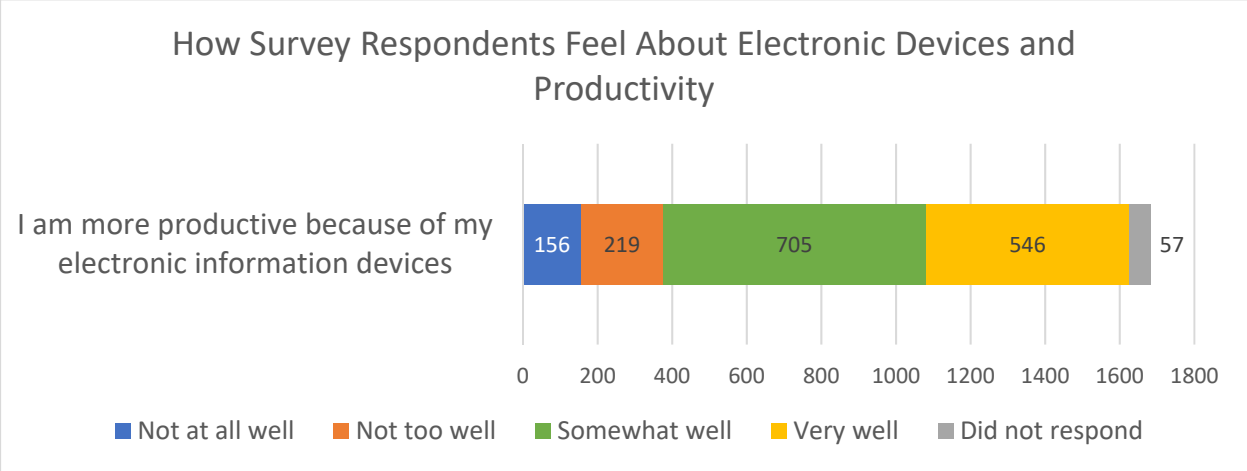


Figure 29 How Survey Respondents Feel About Electronic Devices and Productivity

Statewide %	77
Rural	73
Age 65-74	72
Age 75+	56
Covered HH	65
Veterans	69
Minority	77
English Learner	80
Disabilities	52

Percent of survey respondents that feel the statement "I am more productive because of my electronic information devices" describes them "very well" or "somewhat well," broken out by Covered Population.

Aging individuals 75+ and Individuals with Disabilities fell far below the statewide average for feeling as though electronic devices make them more productive. Conversely, individuals that identify as English Learners had a higher than average percentage response to the question.

The next two figures tie together with Figure 30 illustrating what respondents have searched for online while Figure 31 gauges the difficulty the respondents have in navigating those topics. What survey respondents searched for varied somewhat by covered population, particularly a consistent, notable difference in the aging individuals, individuals with disabilities, and veterans populations.

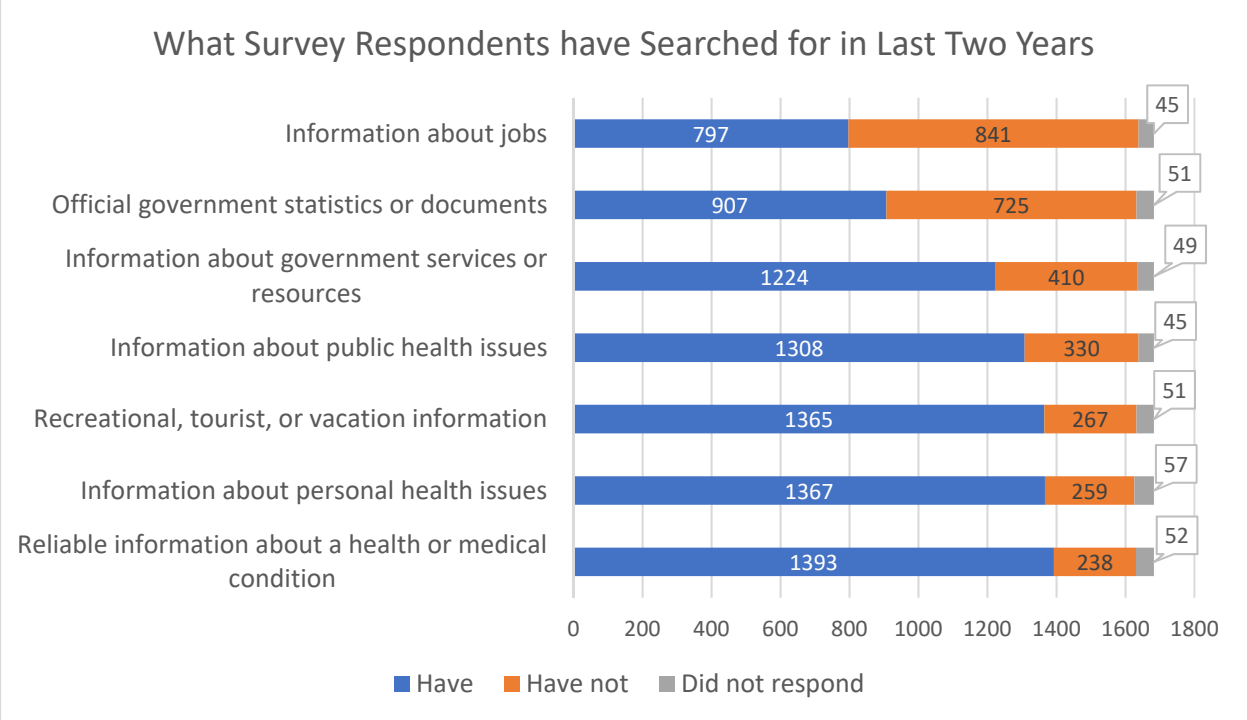


Figure 30 What Survey Respondents have Searched for in Last Two Years

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Information about jobs	**55**	45	19	9	57	27	74	75	38
Information about government services or resources	**75**	67	66	41	65	52	75	61	58
Official government statistics or documents	**57**	51	49	37	52	51	55	28	50
Information about public health issues	**79**	77	71	56	79	77	87	74	71
Recreational, tourist, or vacation information	**84**	81	78	61	78	77	75	73	66
Information about personal health issues	**85**	81	80	66	82	82	89	76	79
Reliable information about a health or medical condition	**85**	82	80	65	81	74	80	88	73

Percent of survey respondents that searched for the following information, broken out by Covered Population.

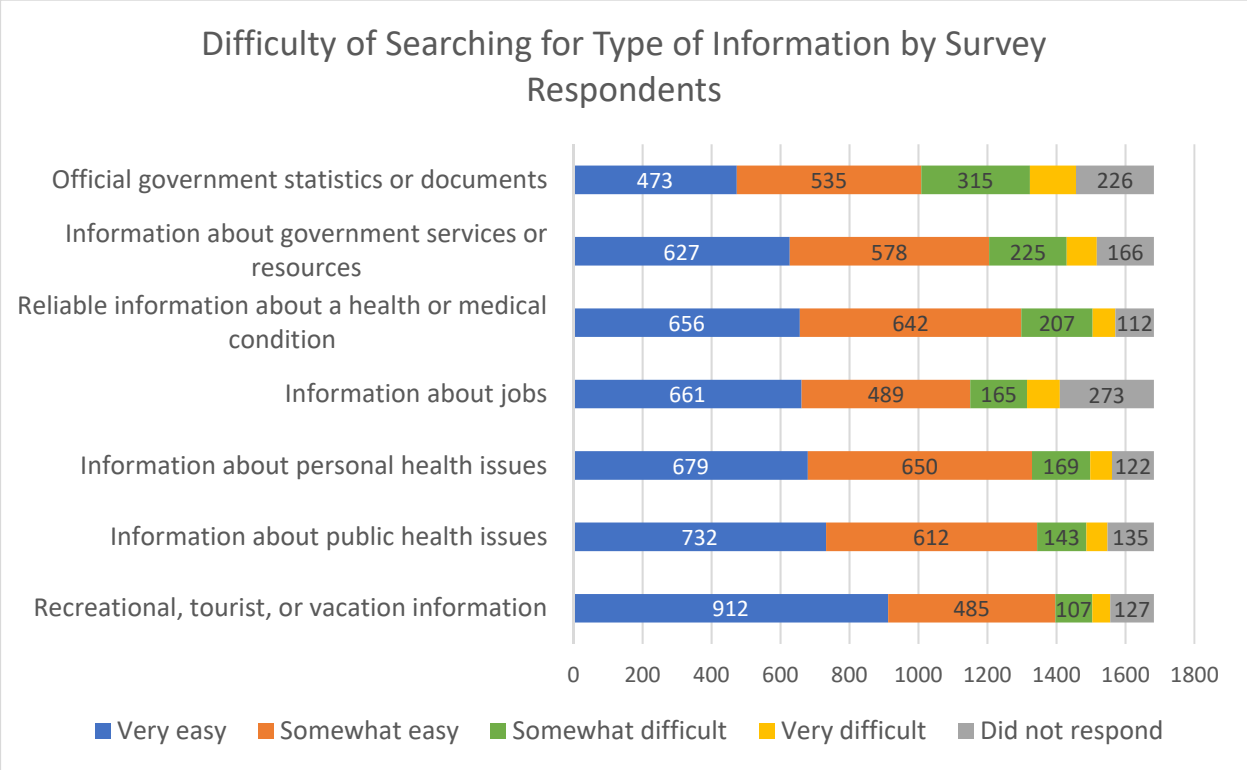


Figure 31 Difficulty of Searching for Type of Information According to Survey Respondents

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Information about jobs	**16**	14	25	53	19	20	28	21	38
Information about government services or resources	**21**	18	24	37	22	22	41	25	48
Reliable information about a health or medical condition	**18**	17	18	28	25	16	31	18	36
Official government statistics or documents	**31**	28	31	45	32	28	36	29	55
Information about public health issues	**13**	11	19	26	16	8	19	18	29
Information about personal health issues	**16**	15	20	23	16	10	21	10	37
Recreational, tourist, or vacation information	**11**	8	15	27	13	9	13	9	31

Percent of survey respondents that found searching for the following information “very difficult” or “somewhat difficult,” broken out by Covered Population.

Overall, respondents found online navigation “somewhat easy” or “very easy” for most topics. Notably, the lowest scoring topics that respondents thought was at least somewhat easy to navigate was “official government statistics or documents” and “information about government services or resources.” This underscores the importance of the digital equity goal of investigating the usability of essential services.

Notably, individuals living in rural areas had consistently reported less difficulty in searching for different types of information than the state average. On the other hand, aging individuals, individuals with disabilities, individuals in minority populations, and individuals living in a covered household all had consistently more difficulty searching for different types of information.

The following two figures are also linked together with Figure 32 illustrating the online activity of respondents while Figure 33 shows the difficulty in completing those tasks. At least 80% of respondents had used email, shopped online, used online banking services, and/or used some form of social media. Less than one third of respondents had enrolled in an internet subsidy program, applied for or accessed government benefits or services, or applied for a job. The difficulty in completing the tasks tracked fairly consistently with the frequency those tasks were completed by the respondents.

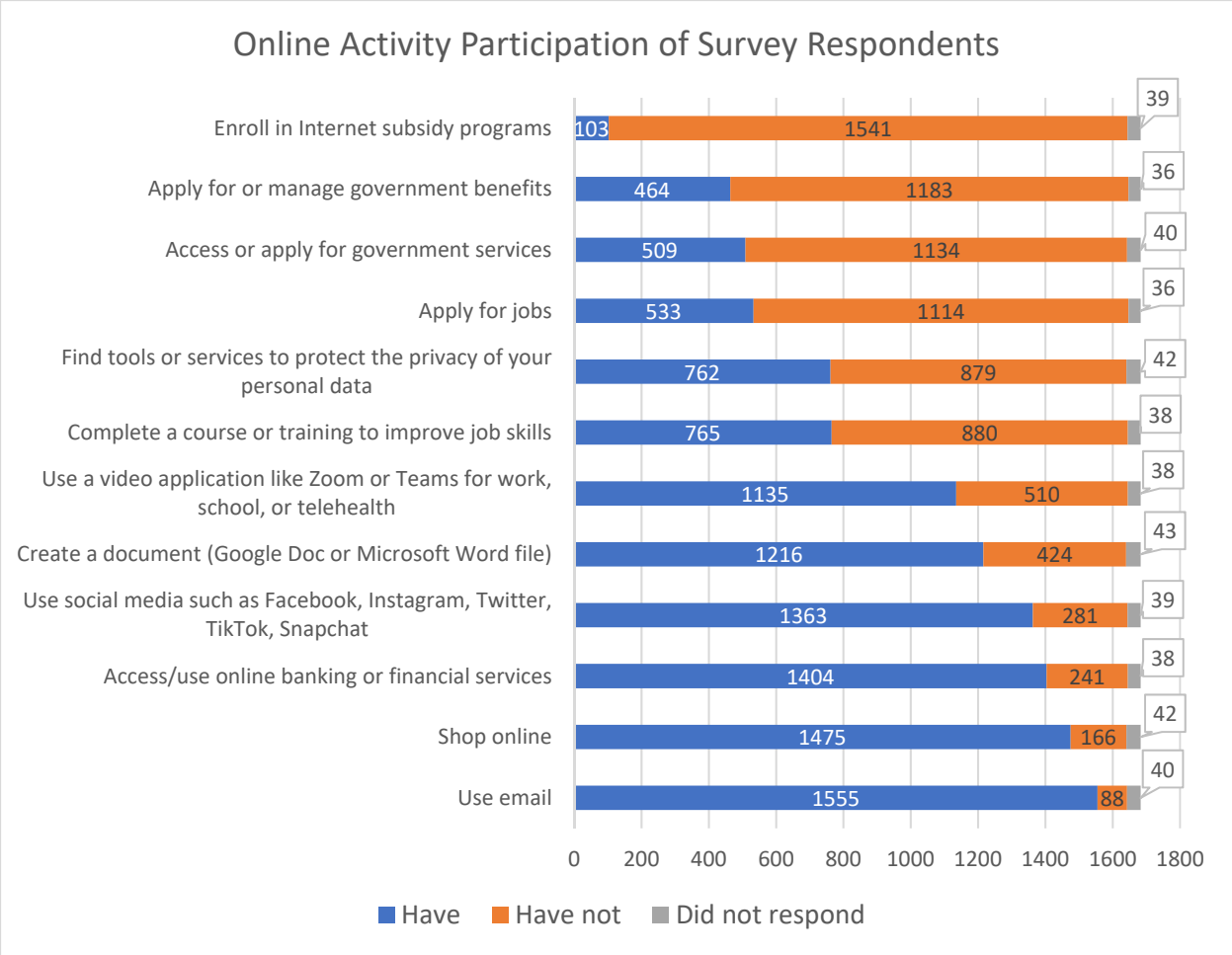


Figure 32 Online Activities of Survey Respondents

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Enroll in Internet subsidy programs	**7**	6	2	1	8	0	22	11	14
Apply for or manage government benefits	**28**	28	47	9	34	31	44	36	36
Access or apply for government services	**33**	31	38	11	37	34	39	21	35
Apply for jobs	**41**	33	9	3	45	25	64	71	32
Find tools or services to protect the privacy of your personal data	**45**	41	39	25	34	37	53	31	36
Complete a course or training to improve job skills	**52**	43	18	6	46	33	74	72	29
Use a video application like Zoom or Teams for work, school, or telehealth	**70**	61	48	25	61	53	74	72	53
Create a document (Google Doc or Microsoft Word file)	**73**	64	48	39	58	55	83	75	48
Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat	**86**	88	74	61	84	79	86	90	77
Access/use online banking or financial services	**85**	81	78	55	80	78	82	78	70
Shop online	**90**	88	87	65	86	90	82	74	74
Use email	**95**	94	96	83	89	92	95	78	85

Percent of survey respondents that participated in different online activities in the last two years, broken out by Covered Population.

Comparing online activity of different Covered Populations shows diverging results based on the activity. Iowans aged 65-74 had a notably higher rate of applying for or managing government benefits and services than the statewide average whereas individuals aged 75+ had a notably lower rate of usage on that same activity. Individuals in racial and ethnic minority groups and English Learners respondents had applied for jobs, completed a course or training to improve job skills, and enrolled in internet subsidy programs at a notably higher rate than the state average.

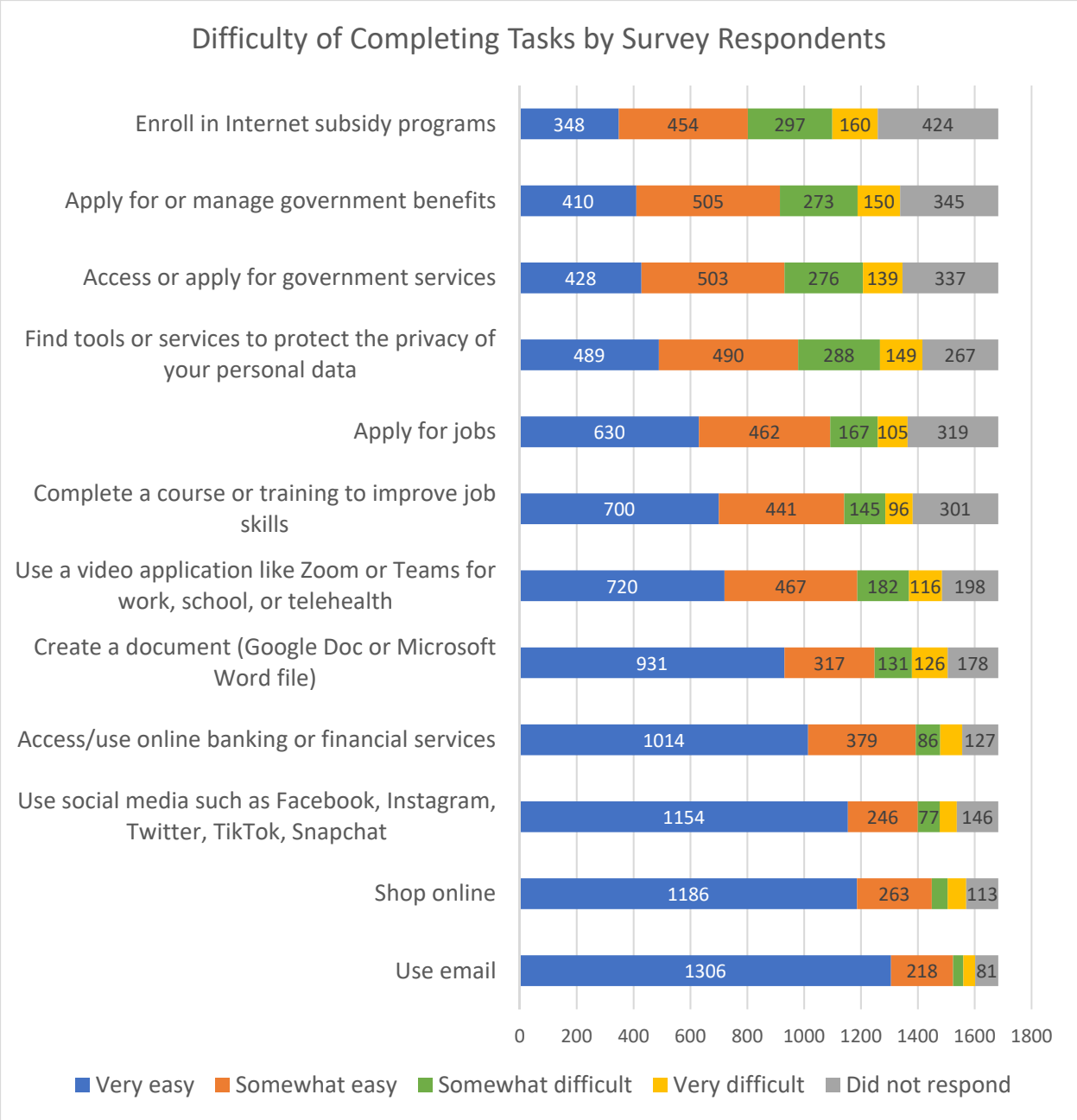


Figure 33 Difficulty of Completing Tasks by Survey Respondents

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Enroll in Internet subsidy programs	**35**	38	42	58	36	27	36	27	51
Apply for or manage government benefits	**31**	33	31	60	31	27	20	25	47
Access or apply for government services	**31**	33	35	50	35	24	33	38	45
Find tools or services to protect the privacy of your personal data	**30**	34	40	54	27	22	37	27	52
Apply for jobs	**16**	20	28	45	20	16	7	9	41
Complete a course or training to improve job skills	**16**	20	29	49	16	22	7	21	42
Use a video application like Zoom or Teams for work, school, or telehealth	**18**	23	35	52	20	18	10	13	35
Create a document (Google Doc or Microsoft Word file)	**17**	24	30	44	22	19	11	12	40
Access/use online banking or financial services	**10**	15	17	25	14	11	7	15	28
Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat	**8**	7	17	26	11	9	11	3	19
Shop online	**6**	8	12	27	9	4	12	2	17
Use email	**5**	6	7	13	6	1	0	9	18

Percent of survey respondents that found the following activities “somewhat difficult” or “very difficult,” broken out by Covered Population.

Comparing the difficulty of online activities as reported by survey respondents shows consistently notable differences in the aging individuals population, particularly those over the age of 75, and individuals with disabilities. Individuals in racial and ethnic minority groups, English Learners respondents, and, in many cases, Veterans, showed lower levels of difficulty in completing online activities than the state average.

Finally, the following figures illustrate the digital skills of survey respondents. For each skill, the respondent was asked to describe how well they could complete each task from left to right as “can do well/easily” (blue), “can do but not well” (orange), “don’t know how to do this” (green), or “not familiar with the terms or task” (yellow). Those that did not answer are represented in the grey segment. The responses are stacked from least able to complete the task at the top to most confident in the skill level at the bottom.

Sending a text, email, and searching for information on a browser were the highest scoring digital skills. Some of the advanced areas like designing a website, editing photos and videos, and producing digital content left plenty of room to grow.

Digital skills responses were broken out into three different figures. Figure 34 illustrates "introductory" digital skills, Figure 35 shows "intermediate" digital skills, while Figure 36 maps survey responses to "advanced" digital skills. The determination between introductory, intermediate, and advanced skills were made solely to present the data in an easier to digest manner by finding natural breaks in the data and does not represent a determination of difficulty of the digital skill itself.

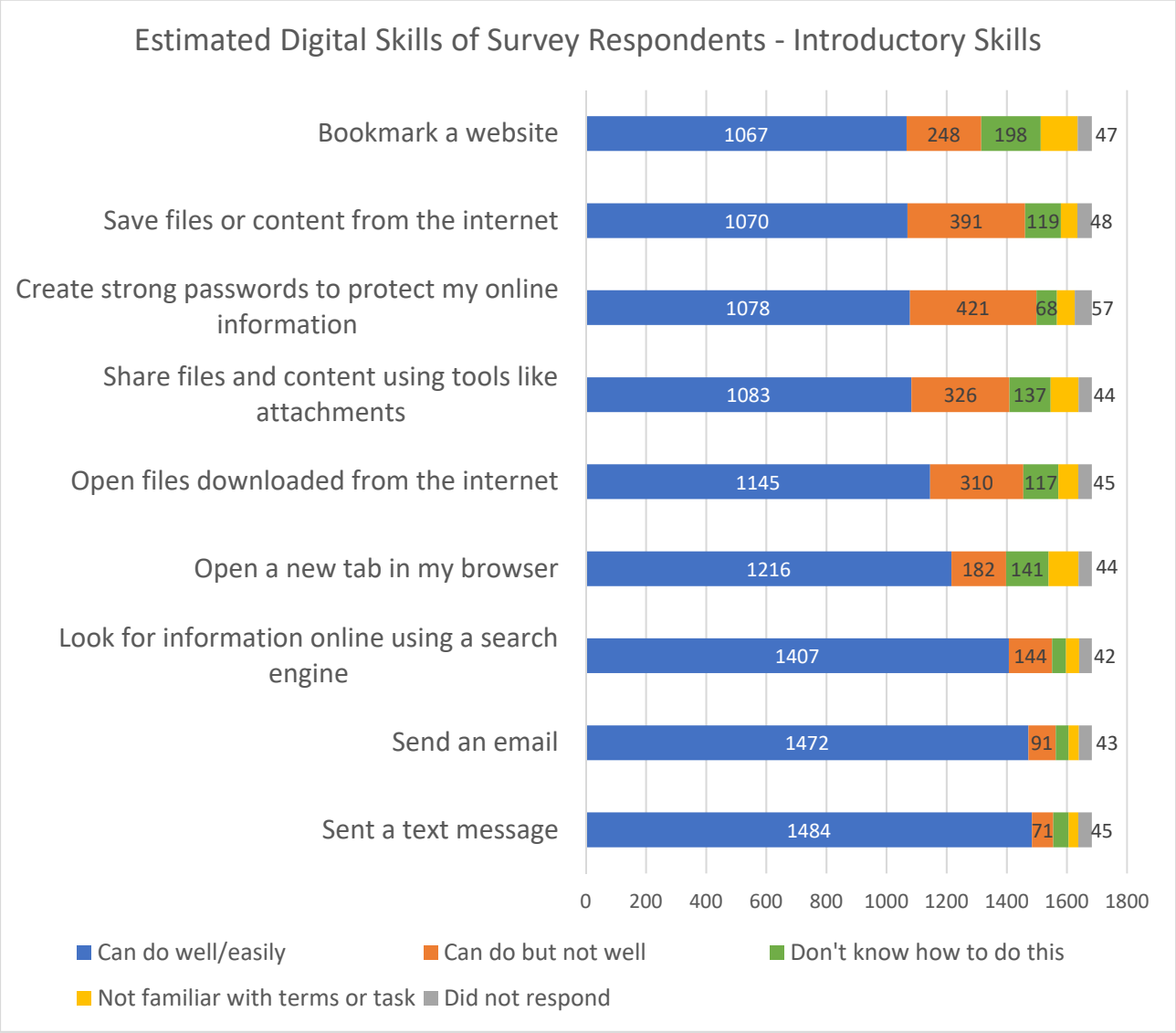


Figure 34 Estimated Digital Skills of Survey Respondents for Introductory Skills

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Bookmark a website	**84**	80	71	50	77	78	88	86	70
Save files or content from the internet	**89**	85	84	64	84	84	89	88	73
Create strong passwords to protect my online information	**92**	91	87	71	83	87	91	93	77
Share files and content using tools like attachments	**86**	84	72	56	79	77	90	90	64
Open files downloaded from the internet	**90**	87	84	61	83	84	88	88	72
Open a new tab in my browser	**87**	83	78	60	78	74	89	85	68
Look for information online using a search engine	**94**	94	95	74	92	90	93	94	82
Send an email	**95**	94	96	81	91	91	95	97	84
Sent a text message	**96**	95	95	79	93	89	95	94	87

Percent of survey respondents that reported they could perform the following introductory digital skills activities either “well/easily” or “can do but not well,” broken out by Covered Population.

Aging individuals, particularly those over the age of 75, and individuals with disabilities showed consistent, notable differences in reported abilities on introductory digital skills relative to the state average. Individuals that live in Covered Households and Veterans reported slightly lower percentages, while individuals in racial and ethnic minorities and English Learners individuals average similar to or above the statewide average.

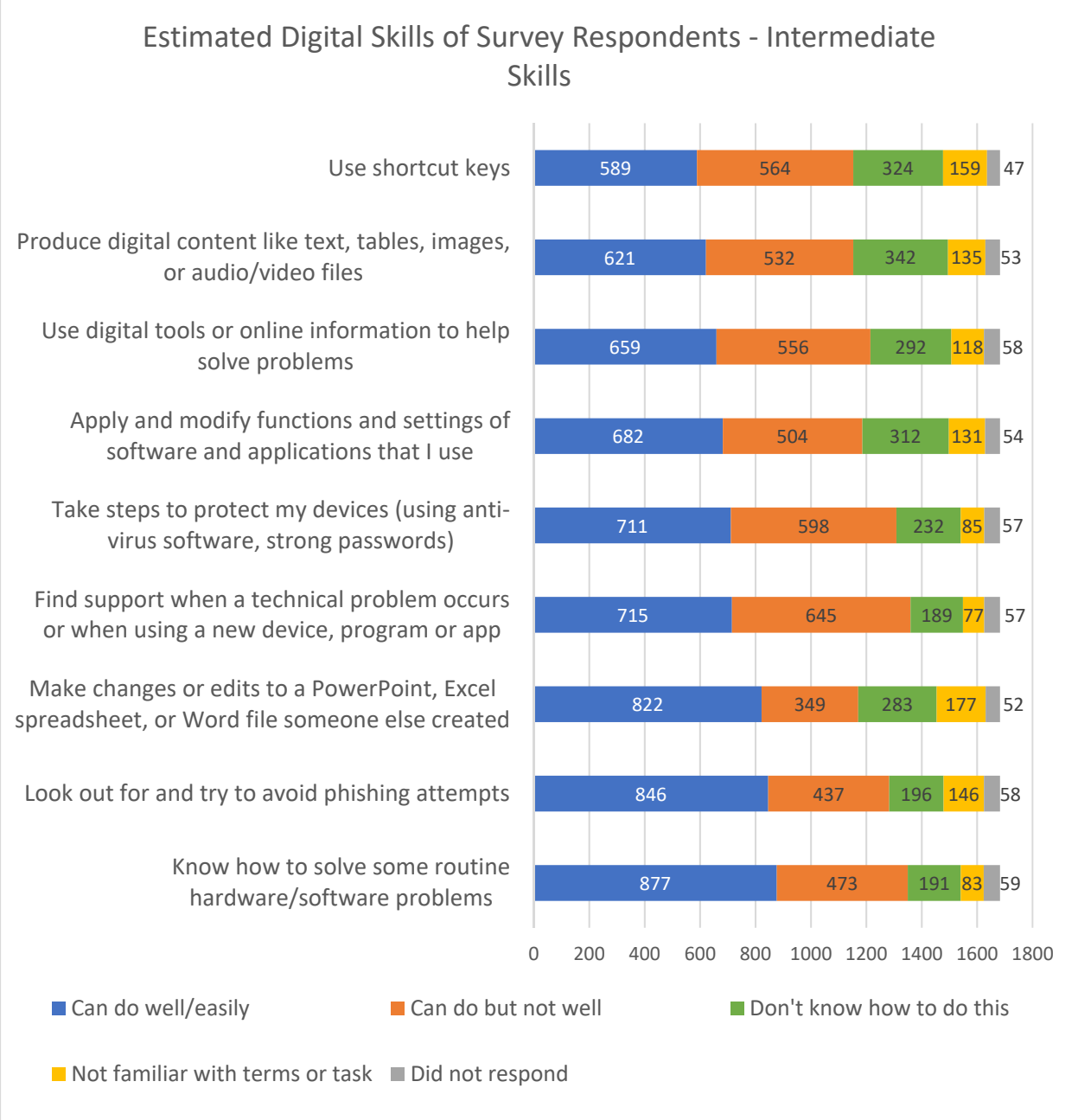


Figure 35 Estimated Digital Skills of Survey Respondents for Intermediate Skills

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Use shortcut keys	**73**	68	57	40	66	64	71	72	50
Produce digital content like text, tables, images, or audio/video files	**73**	70	50	38	61	64	79	76	54
Use digital tools or online information to help solve problems	**75**	68	65	31	66	62	76	70	50
Apply and modify functions and settings of software and applications that I use	**74**	68	60	48	59	69	77	73	43
Take steps to protect my devices (using anti-virus software, strong passwords)	**81**	75	75	59	65	76	83	77	57
Find support when a technical problem occurs or when using a new device, program or app	**83**	78	76	63	71	72	82	76	62
Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created	**73**	65	50	38	60	56	79	81	45
Look out for and try to avoid phishing attempts	**78**	72	65	59	61	67	77	82	47
Know how to solve some routine hardware/software problems	**81**	76	74	64	66	78	80	71	59

Percent of survey respondents that reported they could perform the following intermediate digital skills activities either “well/easily” or “can do but not well,” broken out by Covered Population.

As we look at the intermediate digital skills, the gap between most of the covered populations and the statewide average start to widen with the exception of individuals in racial and ethnic minorities and English Learners individuals. The disparity is most pronounced in aging individuals, particularly those over the age of 75, and individuals with disabilities.

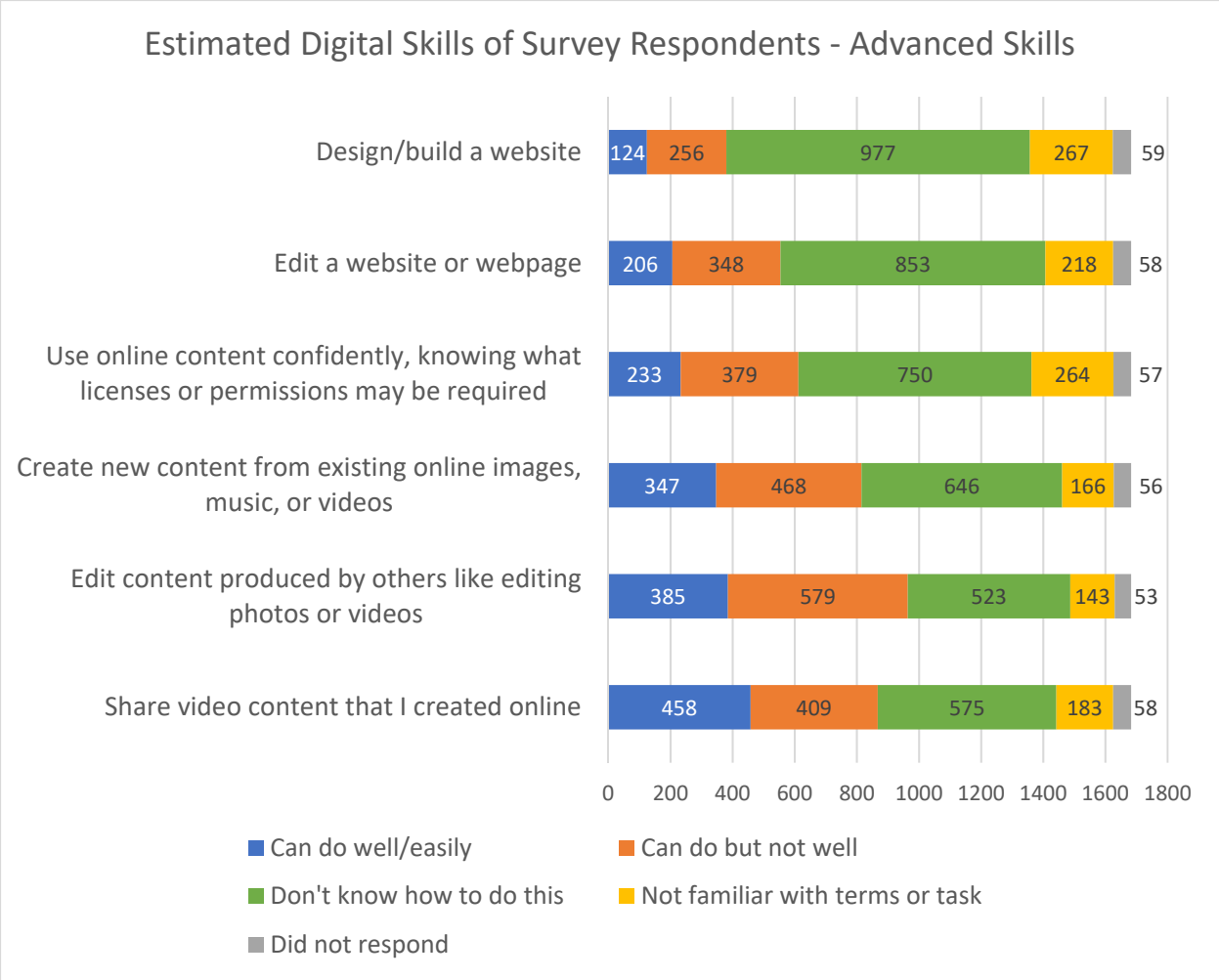


Figure 36 Estimated Digital Skills of Survey Respondents for Advanced Skills

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Design/build a website	**29**	22	7	4	21	28	47	44	20
Edit a website or webpage	**39**	33	22	11	29	34	60	43	26
Use online content confidently, knowing what licenses or permissions may be required	**42**	35	24	10	26	32	52	45	26
Create new content from existing online images, music, or videos	**55**	50	30	23	50	49	72	67	38
Edit content produced by others like editing photos or videos	**65**	61	42	37	53	58	74	79	50
Share video content that I created online	**61**	54	30	21	52	39	74	70	47

Percent of survey respondents that reported they could perform the following advanced digital skills activities either “well/easily” or “can do but not well,” broken out by Covered Population.

The advanced digital skills responses look similar to the intermediate skills responses with most of the covered populations showing notable differences in abilities when compared to the statewide average with the exception of members of a racial and ethnic minority and English Learners individuals. Aging individuals, particularly those over the age of 75, had the lowest reported advanced digital skills abilities.

Some of the digital skills above are specific to safe online activity, specifically “taking steps to protect my devices,” “avoiding phishing attempts,” and “creating strong passwords.” Figure 37 illustrates the need to expand cybersecurity efforts for safe online participation for Iowans.

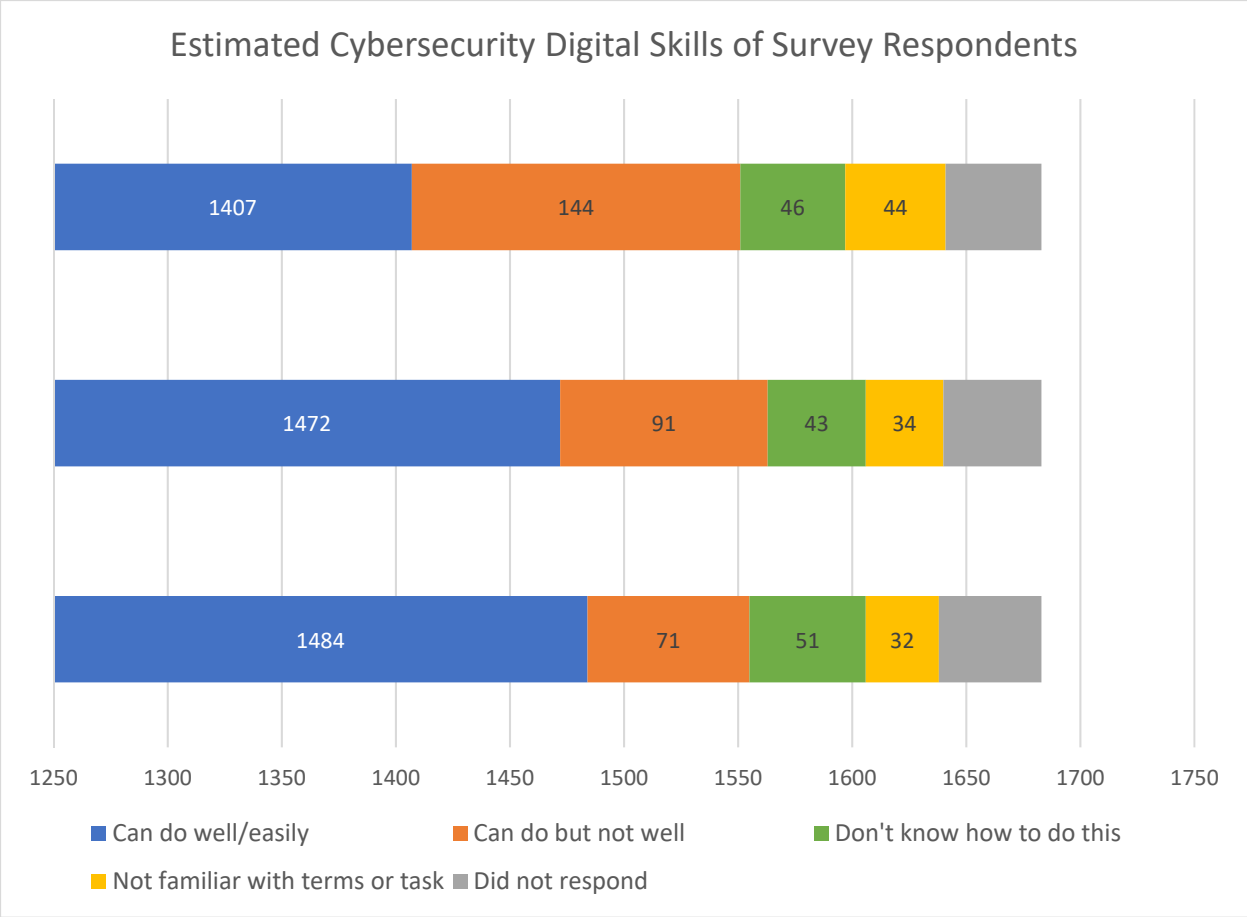


Figure 37 Estimated Cybersecurity Digital Skills of Survey Respondents

	State-wide %	Rural	Age 65-74	Age 75+	Cov. HH	Vets	Min-ority	ELL	Dis-abilities
Take steps to protect my devices (using anti-virus software, strong passwords)	**81**	75	75	59	65	76	83	77	57
Create strong passwords to protect my online information	**92**	91	87	71	83	87	91	93	77
Look out for and try to avoid phishing attempts	**78**	72	65	59	61	67	77	82	47

Percent of Survey Respondents estimated their skill level in completing the following tasks as "I can do this well/easily" or "I can do this but not well" broken out by covered population.

2.2 Asset Inventory

The State of Iowa, through contracted work with Connected Nation, distributed a survey to solicit feedback on digital equity assets. Responses received during this initial solicitation formed the baseline dataset to create an idea of what digital assets are available in the state. An asset in this context can be any organization or group that help Iowans navigate the challenges associated with things like obtaining broadband access, affordability issues, owning and operating digital devices, and learning the digital skills required to reach positive outcomes. The

State of Iowa recognizes that a digital asset inventory like this will likely always remain incomplete as we discover initiatives new and old that help meet the needs of Iowans. As such, the asset inventory will remain a living tool throughout the life of this plan with the ability to include additional assets moving forward.

The initial approach utilized established relationships with organizations in the extended network of DOM and members of the Core Planning Team as described further in Section 4.2. An asset inventory tool was created to identify digital equity resources quickly and efficiently from respondents. Iowa's inventory tool allowed for the submission of information related to the services and resources offered to Iowans. The tool was also designed to collect information related to the geographic area, population, and in which languages those resources are available.

DOM staff conducted initial outreach to stakeholders to leverage existing relationships and introduce Connected Nation staff. Connected Nation followed up these initial outreach messages by a minimum of two additional outreach cycles. Additionally, DOM and Connected Nation conducted a webinar to provide stakeholders with an update on the progress of the state's work in the Broadband Equity Access and Deployment Program (BEAD) and Digital Equity programs along with a request for participation in the asset inventory initiative. Attendees were further encouraged to send the inventory tool to other relevant organizations.

Desktop research was performed to supplement information for as many resources and assets as possible where organizations did not provide a response during the asset inventory collection period. All responses were compiled, reviewed, and categorized. Below are descriptions of identified assets collected as of December, 2023. The inventory will continue to expand as new stakeholders and assets are identified.


This section satisfies Additional Requirement #3

2.2.1 Digital Inclusion Assets by Covered Population

AARP Iowa: AARP Iowa offers OATS (Older Adults Technology Services) Classes and helps identify local OATS licensees. AARP Iowa also engages in statewide fraud education programming through AARP Fraud Watch. Additional services include help enrolling in the Affordable Connectivity Program (ACP), general digital literacy training, cybersecurity or online safety training, and internet usage training. *Covered Population: Aging*

Access 2 Independence: Access 2 Independence provides independent living services to individuals with disabilities. Access 2 Independence offers a free iPad lending library, general digital literacy training, and technical support. Access 2 Independence also assists consumers in purchasing digital assistive technologies such as screen magnifiers and screen readers. Additionally, Access 2 Independence provides assistance in applying to the Affordable Connectivity Program (ACP). *Covered Population: Individuals with Disabilities*

Boys & Girls Clubs of Central Iowa: Boys & Girls Clubs of Central Iowa provides high-quality programs in a safe environment, with caring staff and volunteers, dedicated to serving as positive role models. Club members can overcome barriers to success because Boys & Girls Clubs of Central Iowa are willing to do whatever it takes to help them achieve great futures. Boys & Girls Clubs of Central Iowa provides STEM resources, as well as education and career development. *Covered Population: Covered Households*

Bremer County MHDD: Bremer County Mental Health and Developmental Disabilities (MHDD) seeks to improve health, hope, and successful outcomes for the adults in our region who have mental health and/or intellectual/developmental disabilities, including those with multi-occurring substance use issues, health issues, physical disabilities, brain injuries, and other complex human service needs. Bremer County MHDD offers Telehealth services and help to enroll in the Affordable Connectivity Program (ACP). *Covered Population: Individuals with Disabilities*

Community Action Agencies HHS: The Division of Community Action Agencies (DCAA) addresses issues facing low-income families by bringing resources to the community level. DCAA links state and federal programs with 16 existing Community Action Agencies and other community-based organizations across the state to serve elderly, disabled, and low-income Iowans effectively. DCAA offers many online resources available to the public across its many agencies. *Covered Populations: Covered Households, Aging, Individuals with Disabilities*

Community Broadband Action Network: Community Broadband Action Network works with communities to understand their assets and meet their digital equity needs by providing help with acquiring internet-enabled devices, help to enroll in the Affordable Connectivity Program (ACP), assistance from Digital Navigators, general digital literacy training, college readiness training, cybersecurity or online safety training, help with subscribing to home internet, internet usage training, tech support assisting with electronic devices, and career readiness assistance. In southern Iowa, Community Broadband Action Network also provides direct services: one-on-one skills training, free devices, and support with existing devices. *Covered Population: Covered Households*

Computer Science Teacher Association (CSTA): CSTA Iowa supports and connects educators across Iowa by teaching computer science in many ways. CSTA helps computer science teachers with resources to support their practice and connects them with computer science educators across Iowa. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Council Bluffs Area Wi-Fi Consortium: The Council Bluffs Area Wi-Fi Consortium offers Blink, a free and open Wi-Fi network that boosts connectivity in many Council Bluffs neighborhoods, all the Council Bluffs Community School District buildings, and many outdoor spaces. Blink is available for students, residents, and visitors. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

CultureALL: CultureALL is developing a Digital Storytelling model to support rural Iowans in building community from a distance. This program will not just teach participants how to use storytelling software but also train them on crafting messages and effectively communicating their personal narratives to bridge differences and build a deeper understanding of community members. *Covered Population: Rural Residents*

Des Moines, City of: City of Des Moines Community Recreation Centers, located on opposite sides of the city, offers many services, including public Wi-Fi and computer access. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Easterseals Iowa: The Easterseals Iowa Assistive Technology Program works with Iowans to learn about and access the assistive technology they need to learn, work, play, and participate in community life safely and independently. The Easterseals Iowa assistive technology team serves Iowans of all ages with all types of disabilities, including persons who are aging. Easterseals Iowa Assistive Technology Program operates a lending library that allows individuals with disabilities to borrow and try relevant devices before determining if they should purchase. Easterseals Iowa Assistive Technology Program offers various services to support awareness and education of assistive technology statewide. Easterseals Iowa Assistive Technology Program team members provide periodic virtual training covering various topics, from assistive technology devices to do-it-yourself (DIY) assistive technology ideas and Q&A sessions. *Covered Population: Individuals with Disabilities*

Goodwill of the Heartland Career Centers: Goodwill of the Heartland has eight career centers across the state of Iowa that are open to the public. At these centers, people can get assistance learning digital literacy skills and job search. Goodwill of the Heartland offers computer refurbishing services, help to enroll in the Affordable Connectivity Program (ACP), general digital literacy training, training with specific software, workforce development skills, cybersecurity, or online safety training, help with public assistance portals, help with subscribing to home internet, internet usage training, tech support providing assistance with electronic devices, career readiness assistance, and public access to computers. *Covered Population: Covered Households*

Iowa City Senior Center: The Iowa City Senior Center (ICSC) is a community center offering programs, services, and facilities geared toward older adults. Services are offered throughout Johnson County and include online cybersecurity classes. *Covered Population: Aging*

Iowa City Tech: Iowa City Tech offers various technology services, such as device setup and repair. Additionally, Iowa City Tech provides extensive online resources to assist with computer, device, and overall technology needs. *Covered Population: Aging Individuals, Individuals with*

Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities

Iowa Connections Academy: Iowa Connections Academy is a fully accredited virtual school that makes earning a tuition-free K–12 education possible for parents and students looking for an alternative to traditional brick-and-mortar public schools. In partnership with the CAM Community School District, Iowa Connections Academy is state certified and open to students located throughout Iowa, including Dallas County, Story County, and Johnson County. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Iowa Department for the Blind: Iowa Department for the Blind seeks to empower blind Iowans to be gainfully employed and live independently. Iowa Department for the Blind provides help with acquiring internet-enabled devices, training with specific software, college readiness training, internet usage training, and career readiness assistance to those they serve. *Covered Population: Individuals with Disabilities*

Iowa Department of Corrections: The Iowa Department of Corrections (IDOC) is responsible for nine correctional facilities across the state and seeks to assist individuals in becoming productive members of their communities as they reenter society. The IDOC offers online training to case managers through their DRAOR training. *Covered Population: Incarcerated Individuals*

Iowa Department of Education: The Iowa Department of Education provides schools and teachers with several resources and guidance on teaching digital literacy, specific software, and coding. Many online resources also focus on helping schools, parents, and students related to digital literacy issues and needs. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Iowa Department of Management: The Iowa Department of Management is dedicated to offering government and citizens information technology and business solutions through guidance, service delivery, and partnerships. The Department of Management, Division of Information Technology provides excellent resources for Internet services and cybersecurity. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Iowa Department of Transportation: The Iowa Department of Transportation offers public Wi-Fi access at all the state's full-service rest areas and helps with public assistance portals. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Iowa Department of Veterans Affairs: Iowa Department of Veterans Affairs users without the internet can work face-to-face with their county VSOs to submit claims, assistance requests, and other access to state and federal veterans' benefits and programs. Iowa Department of Veterans Affairs provides workforce development skills training, help with public assistance portals, telehealth services, and career readiness assistance. *Covered Population: Veterans*

Iowa Farm Bureau: Iowa Farm Bureau remains committed to the people, progress, and pride of Iowa. As an organization, they "… cherish and represent the values Iowans embody: dedication to hard work, passion for the land, and character rooted in faith and family." Iowa Farm Bureau offers online documents related to cybersecurity or online security training. *Covered Population: Rural*

Iowa Hospital Association: The Iowa Hospital Association makes some of their training available online to those health care professionals associated with the organization and who are seeking training in various areas. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Iowa Law Enforcement Academy: The purpose of the Iowa Law Enforcement Academy is to provide training for Iowa's law enforcement professionals. By offering online training, Law Enforcement Academy ensures that Iowa's law enforcement community has ample opportunities to stay current and receive the necessary training for their jobs. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Iowa Primary Care Association: Iowa Primary Care Association is the voice and safety net for underserved/under-resourced patients in the state, providing direct patient care through telehealth and digital patient engagement through patient portals and smartphone apps. Iowa Primary Care Association's mission is "health equity for all," which means engaging with patients and supporting them in adopting digital tools to help them own their health care journey. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Iowa Vocational Rehabilitation Services IWD: Iowa Vocational Rehabilitation Services (IVRS) works with individual clients based on their needs. If an individual needs assistance with digital inclusion, IVRS will work through a Community Resource Partner to assist with public Wi-Fi access, training with specific software, college readiness training, workforce development skills, help with public assistance portals, internet usage training, and career readiness assistance. *Covered Population: Individuals with Disabilities*

Knight Moves: Knight Moves works to empower Native American, rural, and urban underserved communities to break through barriers blocking socio-economic inclusion. Knight Moves provides training with specific software, college readiness training, workforce development skills training, computer coding education, and career readiness assistance. *Covered Populations: Rural, Individuals from Racial or Ethnic Minorities, Covered Households*

Muscatine, City of: The City of Muscatine has received a grant and is partnering with Lead for America to conduct outreach events, ACP enrollment assistance, internet and computer use, and safety education. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

New Horizons: New Horizons provides training for every member of an organization focusing on Leadership & Development, Information Technology, Project & Service Management, Cloud & Big Data, and everyday Business Applications. Services include computer classes, software training, and computer coding certificate courses. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Partnership for a Healthy Iowa: Partnership for a Healthy Iowa's mission is "Connecting young Iowans, and those who care for them, with the resources they need to live free of alcohol, nicotine, drugs, substance abuse, and other high-risk behaviors." Among their various services, Partnership for a Healthy Iowa also provide general digital lit training and online resources on cybersecurity and media literacy. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Polk County Behavioral Health and Disability Services: Polk County Behavioral Health & Disability Services Department exists to support improved access to health care and to promote full citizenship for people with mental illness, intellectual disability, or developmental disabilities. Polk County Behavioral Health & Disability Services offers online training and webinar materials for those needing such support. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Prison Industries Enhancement (PIE) Program (also known as Private Sector Work Program): Allows private businesses to hire incarcerated individuals when the business is unable to find enough qualified civilian employees. Private businesses utilizing the PIE program supplement their workforce with incarcerated individuals working inside Iowa Prison Industries shops within Iowa's correctional facilities. The majority of men and women in Iowa's prisons are scheduled to be released back into the community. Those working in the PIE program gain valuable work experience and are better equipped to obtain employment after release. The stability provided by steady employment is an essential element of success for formerly incarcerated individuals. *Covered Population: Incarcerated Individuals*

Returning Citizen Initiative, Iowa Workforce Development: The Returning Citizen Initiative, is focused on supporting reentry populations in returning to the workforce after incarceration or, for many, entering it for the first time. The goal of this initiative is to connect people to employment prior to release, which may mean a scheduled job interview or even a job offer for those who are able to apply and interview while still incarcerated. Through this voluntary program, anyone in the six participating Iowa prisons who wants career or employment support is welcome to join. Reentry career planners work with incarcerated individuals to build or revise their resumes, engage in career exploration programming using the O*NET Online career exploration tool, and connect to education (e.g., high school equivalency test or community college) that will help them get the jobs of their choice. *Covered Population: Incarcerated Individuals*

Sac and Fox Tribe of Iowa: The Sac and Fox Tribe of Iowa provides internet access to those who request service currently residing in all Tribal homes in the Meskwaki Settlement. The Sac

and Fox Tribe of Iowa also provides public Wi-Fi and access to computers. *Covered Population: Racial and Ethnic Minorities*

School Administrators of Iowa: The School Administrators of Iowa provides support to more than 2,000 educational administrators in Iowa. They offer a range of resources that cater specifically to education professionals and schools, students, and parents. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Senior Care of Iowa 211Iowa: 211 Iowa/Senior Care of Iowa provides computer education and access to computer technologies to individuals 55 years of age and older to enhance their lives and enable them to share their knowledge and wisdom. Services offered include general digital literacy training, training with specific software, workforce development skills training, and career readiness assistance. *Covered Population: Aging*

Iowa State Library: The State Library provides a variety of online resources for Iowans. These resources are for several different user types, including all online users, state library card holders, law library users, and specific online resources focused on local libraries and their needs. These resources include career training, workforce development, library continuing education, law resources as well as public access to Wi-Fi. The State Library also offers tools for local libraries to help support Wi-Fi access in local libraries. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

Tech4Impact: Tech4Impact offers various consulting services to individuals with and without disabilities and businesses in the areas of assistive technology and accessible digital materials, including assistive technology, smart home technology, accessible gaming, accessible websites, and general technology training. Tech4Impact also travels to Iowan's homes or completes virtual - one-on-one assessments, setup, and training. *Covered Population: Individuals with Disabilities*

The Lonely Entrepreneur: The Lonely Entrepreneur Learning Community is a one-stop shop for the knowledge, tools, and support a current or aspiring entrepreneur needs to start or grow a business. *Covered Population: Aging Individuals, Individuals with Disabilities, Veterans, Covered Households, Rural Iowans, English Learners, Racial and Ethnic Minorities*

T-Mobile: T-Mobile is a national wireless telecommunications company, offering both mobile and home internet services. T-Mobile also participates in the Affordable Connectivity Program and offers other low-cost internet and device services. *Covered Population: Covered Households*

UScellular: UScellular is dedicated to promoting widespread access to Information and Communication Technologies (ICTs), recognizing the significance of providing high-speed wireless technology access to all individuals and communities, especially those facing disadvantages. UScellular promotes Digital Equity, where everyone has the necessary technology capacity to engage in society, democracy, and the economy. UScellular is focused on Availability, Affordability, and Digital Literacy. UScellular offers help with acquiring internet-

enabled devices, enrolling in the Affordable Connectivity Program (ACP), accessing public assistance portals, subscribing to home internet, and tech support providing assistance with electronic devices. *Covered Population: Covered Households*

U.S. Department of Veterans Affairs: The U.S. Department of Veterans Affairs offers career readiness training and workforce development through several online programs. These include programs like the VET TEC program, which is designed to help prepare qualifying individuals for jobs in the high-technology industry. *Covered Population: Veterans*

Veterans Tech Support: Veterans Tech Support provides computer equipment to veteran organizations for use by veterans and their families on an on-demand basis. Veterans Tech Support also provides monthly classes ranging from cybersecurity, basic computer skills, specific software usage, telehealth portal usage, online safety, virtual meetings, and more. The aim is to provide digital literacy and self-sufficiency to veterans and their families. Individual technical help is also provided on an as-needed basis. All classes are free of charge, and the equipment is funded by donations and grants received from Veterans Tech Support, a 501(c)(3) organization based in Iowa. *Covered Population: Veterans*

2.2.2 Existing Digital Equity Plans and Programs

DOM did not find any existing Digital Equity Plans or programs in the state of Iowa during the asset inventory research process. This is not necessarily a surprise as most of the local Digital Equity Plans in existence around the country are for large metropolitan areas. However, DOM will link to any plans created and document any programs identified in the future on the digital equity website and coordinate with interested parties on a case-by-case basis.

2.2.3 Broadband Access

According to the most recently available NTIA (published December 12, 2023) unserved and underserved counts, 130,814 locations in Iowa do not have access to 100 mbps upload/20 mbps download service, with approximately 66,000 of those locations scheduled to receive service in in the future under federal and state grants previously awarded. Furthermore, the Census Bureau estimates that 14.3% of the population is not using the internet at all, 11.9% of Iowans live in a household that lacks a computer or broadband subscription, and nearly 30% of the population is not using a PC or tablet computer. While the BEAD program primarily focuses on closing the digital divide with regards to providing all Iowans with the availability of broadband, this plan is crafted to coordinate with and support BEAD while focusing on the factors that may contribute to the portion of the population not using the internet currently.

Other programs in the state include state and local libraries that provide a variety of online resources for Iowans across the state. Libraries help patrons with career training, workforce development, continuing education, law resources, and public access to Wi-Fi. Some libraries have hotspot and laptop checkout programs to help patrons work from home. Most libraries have public computing labs that can serve patrons on site at library branches. The Iowa Department of Education has helped close the gap with one-to-one computer programs for students to help facilitate learning. While there's still a need to increase connectivity availability and affordability for many students, having the device serves as an important step. The Community Broadband Action Network started a Digital Navigator program. The Digital

Navigator program helps individuals with everything from acquiring and setting up devices to learning basic digital skills and signing up for subsidy programs.

2.2.4 Broadband Affordability

The Affordable Connectivity Program (ACP) provides a $30 per month subsidy for eligible households to help pay for a broadband subscription. The subsidy for tribal members is offered at $75 per month. While Iowa has over an estimated 500,000 households eligible for the ACP benefit, only 22% of those households are taking advantage of the program. That enrollment rate stands far below the national average of 41% enrollment and sits as the 43rd ranked state.

DOM understands the importance of this asset to those that are currently enrolled and as an unrealized benefit for those that may be unaware of the benefit or their eligibility to take advantage. To help spread awareness and aid enrollment, the State of Iowa received a grant from the federal government focused solely on marketing the ACP and assisting individuals with the enrollment process that may need additional help. Activities under this initiative are slated to commence in the second quarter of 2024.

Collaboration and Stakeholder Engagement

3 Collaboration and Stakeholder Engagement

This section satisfies Statutory Requirements #4 and #5 and Additional Requirements #4 and #8.

3.1 Public Meetings

DOM organized and delivered 55 townhall-style meetings across the state starting in mid-March and extending through the end of May, 2023. This community outreach initiative helped disseminate information about the BEAD and DEA programs and served as an important venue to gather information about the challenges Iowans face in realizing full participation in our digital society. The meeting locations covered all urban areas in Iowa, defined as metropolitan areas with at least 50,000 residents, and geographically dispersed rural communities to provide opportunities for all Iowans to attend a meeting within a reasonable driving distance. All meetings commenced at 6:00 pm and were held in partnership with community colleges, universities, and local library branches to ensure accessibility.

The Governor's Office issued a press release announcing the public meeting schedule on March 6, 2023. DOM launched a social media campaign utilizing Facebook to reach attendees for the public meetings and worked with the Iowa Newspaper Association to transmit the press release to as wide a media footprint as possible. Additionally, details were shared through partner networks to encourage attendance and inclusion. Figure 38 shows a map of Iowa with meeting locations. The purple circles indicate meetings in rural communities (fewer than 50,000 residents) and the green circles indicate urban communities (50,000+ residents). A number inside the green circle indicates multiple meetings in that urban area. Figure 39 lists each location and the date the meeting took place.

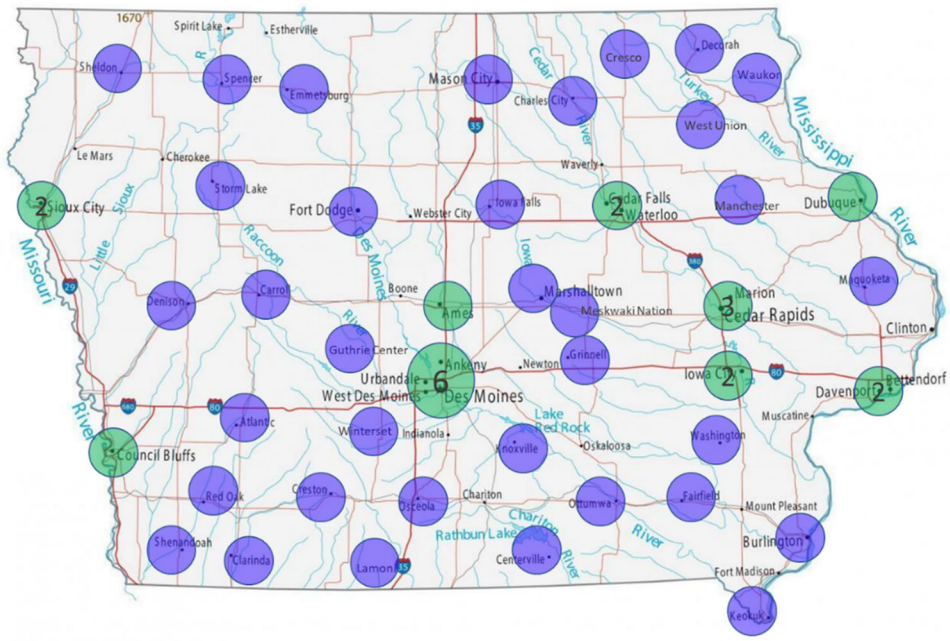


Figure 38 Map of Iowa with Public Meeting Locations

City	Date	City	Date	City	Date
Ames	4/25	Des Moines Central	3/16	Meskwaki Nation	5/9
Ankeny	3/23	Des Moines South	3/30	Osceola	4/18
Atlantic	4/11	Des Moines East	4/17	Ottumwa	3/30
Bettendorf	3/21	Dubuque	4/18	Red Oak	4/10
Burlington	4/6	Emmetsburg	4/25	Sheldon	4/24
Carroll	5/9	Fairfield	4/3	Shenandoah	5/11
Cedar Falls	4/6	Fort Dodge	5/2	Sioux City East	3/27
Cedar Rapids South	3/15	Grinnell	5/15	Sioux City Central	3/28
Cedar Rapids Main	4/11	Guthrie Center	5/10	Spencer	4/27
Centerville	4/20	Iowa City	4/12	Storm Lake	4/24
Charles City	5/3	Iowa Falls	5/16	Urbandale	4/10
Clarinda	4/3	Keokuk	4/5	Washington	4/13
Coralville	3/29	Knoxville	3/27	Waterloo	4/19
Council Bluffs	3/22	Lamoni	3/28	Waukon	5/23
Cresco	5/17	Manchester	5/22	West Des Moines	4/24
Creston	4/12	Maquoketa	4/20	West Union	5/24
Davenport	3/14	Marion	4/5	Winterset	3/29
Decorah	5/18	Marshalltown	5/25		
Denison	5/8	Mason City	5/4		

Figure 39 List of Public Meeting Locations and Date

All told, close to 300 Iowans participated in the public meetings. Each public meeting started with asking attendees to sign into the meeting where they could opt to receive updates on DOM's plan development. Each participant was then encouraged to wear a name tag and grab a strip of colored sticker dots to participate in the facilitated activity described below. The facilitator for the meeting delivered a brief presentation to introduce participants to DOM, the purpose of the meeting, and the concepts of broadband and digital equity.

The presentation underscored the importance of broadband and digital equity as a multi-faceted issue. Achieving full participation in society in the digital age requires four interconnected concepts to be satisfied. These concepts were defined as Accessibility (the ability to acquire a high-speed internet connection), Affordability (the ability of the individual to afford service if available), Digital Devices (the ability to afford and acquire the right device for the task), and Digital Skills (the earned ability to use digital devices to achieve the desired outcome). The interconnected nature of these four facets, depicted in Figure 40, proved a recurring theme in meeting discussions.

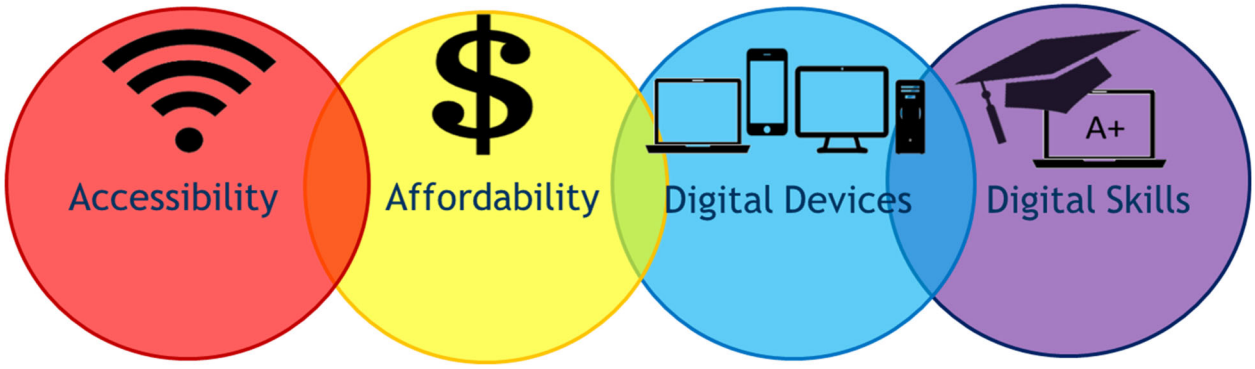


Figure 40 The Four Facets of Digital Equity

After describing the facets of digital equity, participants were encouraged to take their strip of colored dots (red, green, yellow, and blue stickers) and "rank" each facet relative to each other as to what constituted the biggest barrier to full participation in society in their community by placing dots on large posters with the digital equity facets labeled at the top. The red dot represented the biggest barrier for their community, the green dot the second, yellow the third, and blue the fourth biggest barrier. The option of "Other" was offered to participants in case the four identified facets didn't cover everything. The "other" category earned only a handful of votes across the 55 meetings, mostly relating to the difference between "accessibility" and "reliability." Note that in the figures below, not all columns add up to the same number. Most of that is due to votes earned by the "other" category mentioned above while some participants chose to simply not use all four stickers.

Figure 41 shows the total voting results from public meeting participants across all 55 meetings. Accessibility easily paced the group as the biggest barrier to achieving full participation in society among participants with 174 first place (red) votes. Affordability and Digital Skills claimed 62 and 46 first place votes respectively, with Digital Devices garnering only 4. Figure 42 applies a simple scoring system to the votes to determine a "score" for each digital equity facet. This result helps visualize the relative rank of each digital equity facet by viewing the stack height for each. The scoring system gave four points for each red dot vote, three points for green, two points for yellow, and a single point for blue. These two figures show that the Affordability facet scored a strong second place among meeting participants as to the perceived barriers faced by members of their community.

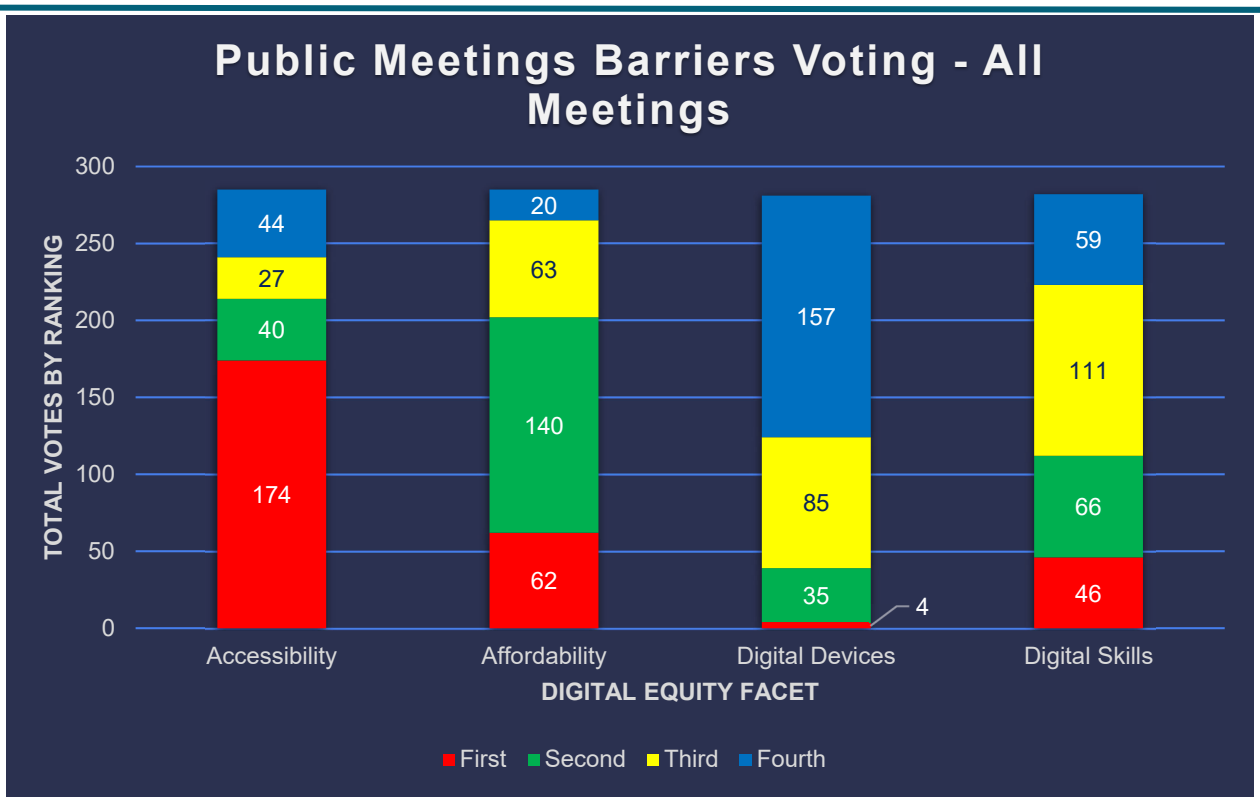


Figure 41 Public Meeting Participant Ranking for Digital Equity Facets, All Meetings

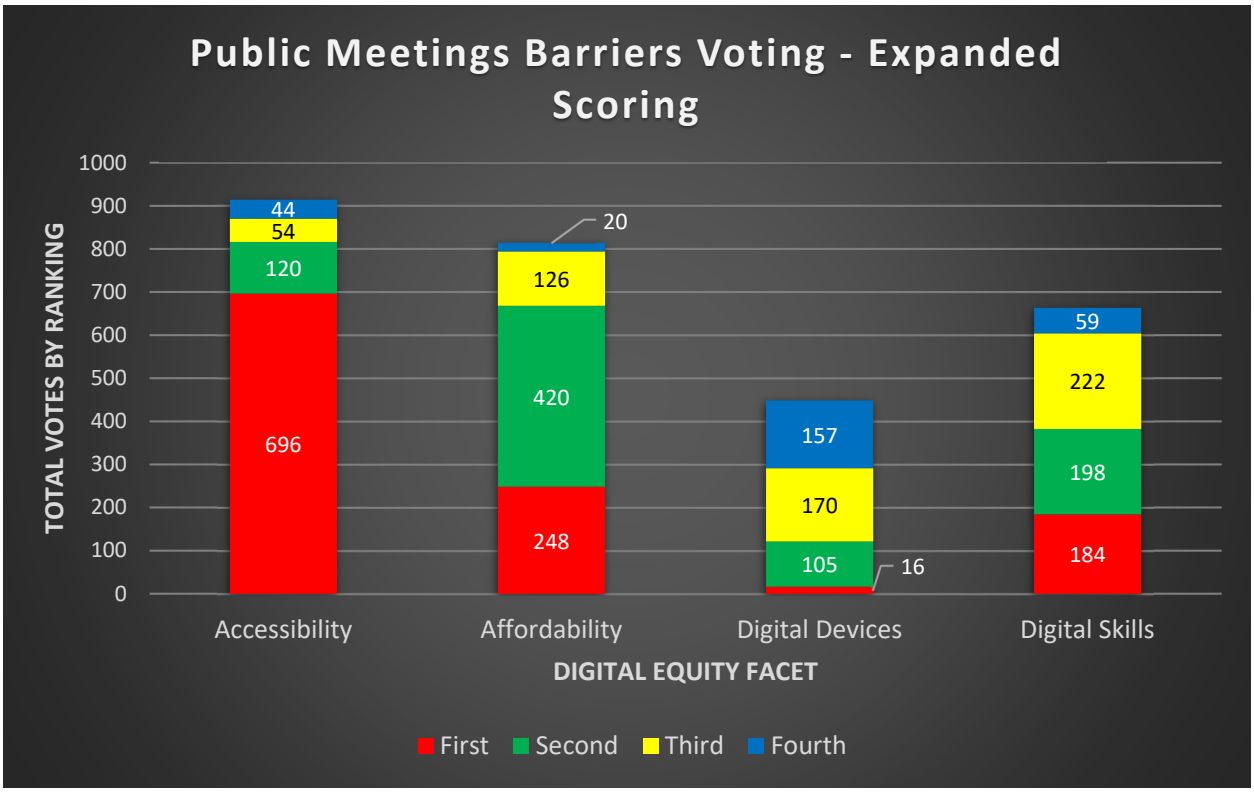


Figure 42 Public Meeting Scoring for Digital Equity Facets, All Meetings

Breaking out the results from the 20 urban area meeting locations separately, Figure 43 tells a more nuanced story than the full results. Affordability earned more first place votes than Accessibility among the urban meeting participants and nearly twice as many second-place votes, resulting in the highest stacked bar in Figure 44. This breakdown makes sense as most of the urban area meetings had accessibility options with some notable exceptions. Urban areas that may have a provider but service is unreliable or inconsistent voted for access in those meetings. This was true in at least two smaller urban communities that were motivated to help fix the access issue first and foremost.

Importantly, we know both through anecdotal stories and exit survey responses that a notable portion of attendees at the urban meetings were rural residents from surrounding areas. While the 20 urban area meetings comprised 34% of the total votes from the full sample, only 25% of exit survey respondents used an urban-area zip code. That difference helps explain some of the favorable voting for Accessibility in the urban meeting breakout.

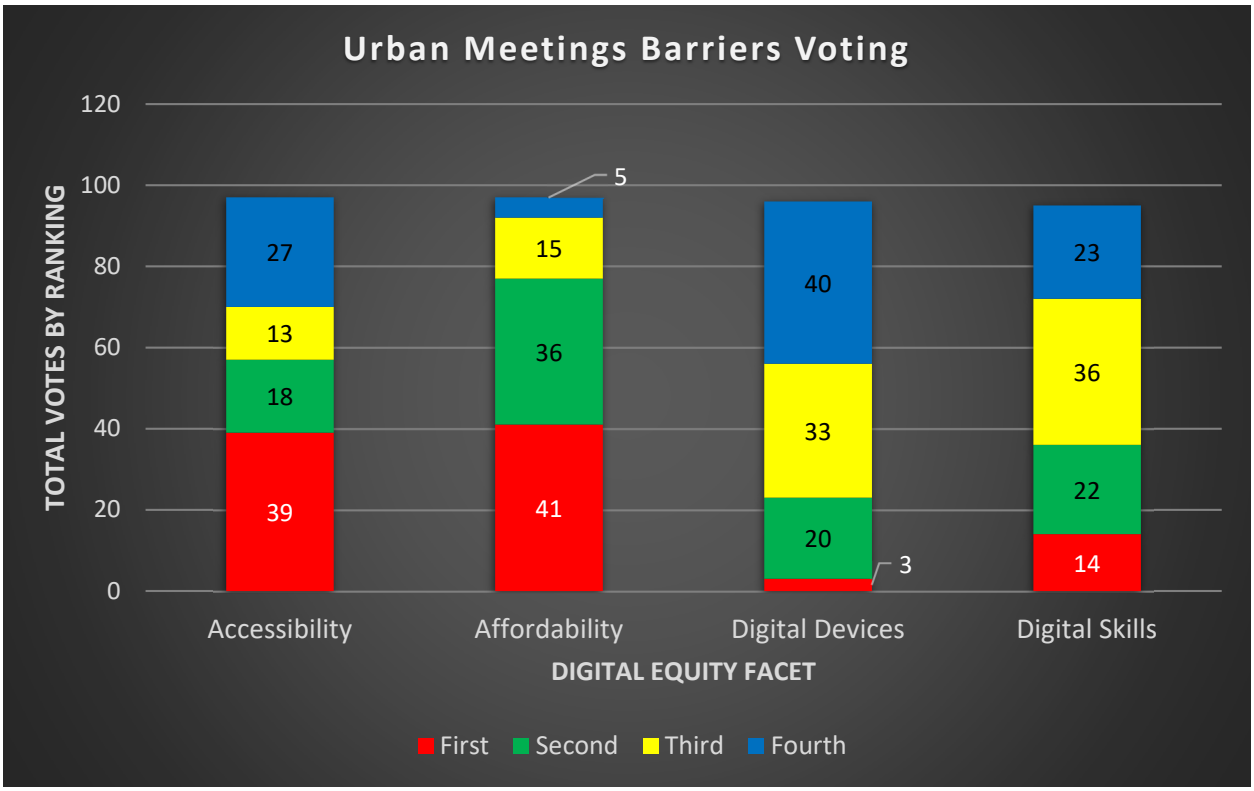


Figure 43 Public Meeting Participant Ranking for Digital Equity Facets, Urban Meetings only

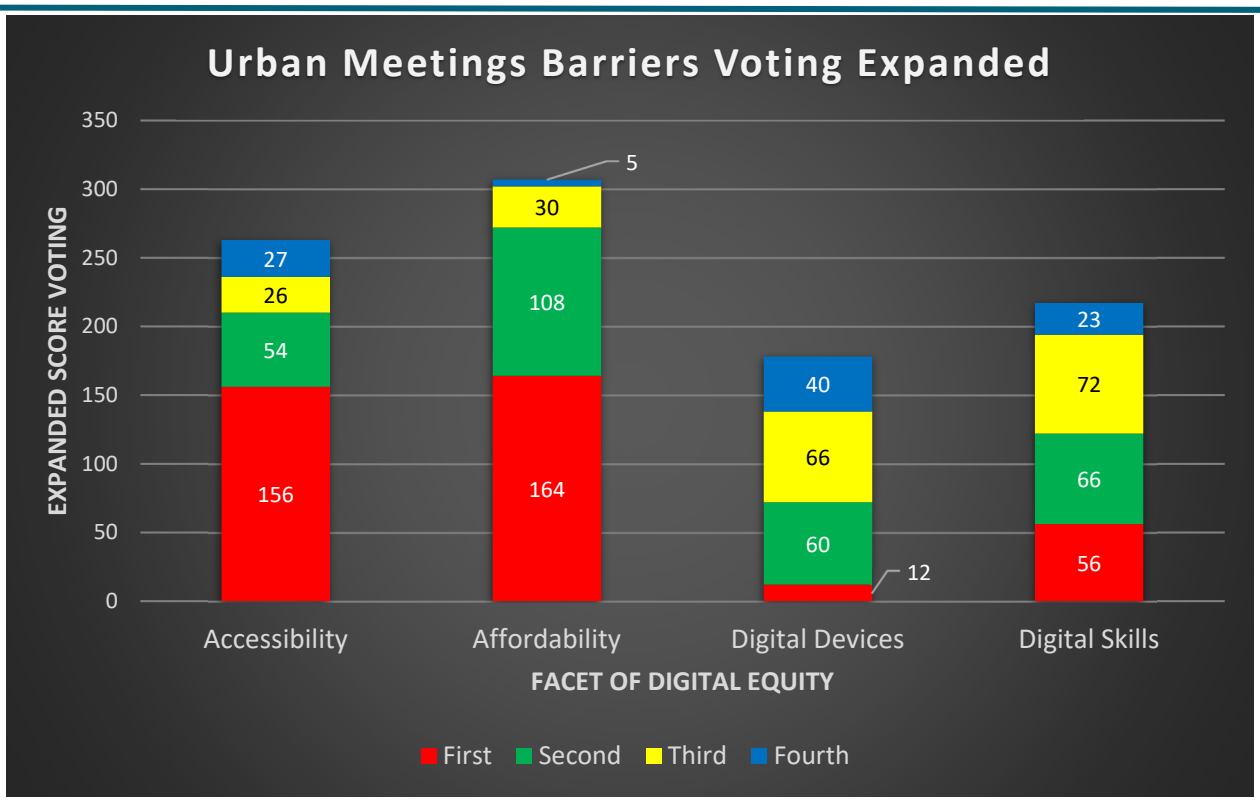


Figure 44 Public Meeting Scoring for Digital Equity Facets, Urban Meetings Only

On the other hand, breaking out the rural area meetings into their own chart in Figure 45 shows the stark ranking of Accessibility as the top barrier to achieving full participation in society in those communities. Many of the 35 rural meeting locations resulted in all voting participants identifying Access as their top barrier. In communities where service was present, Digital Skills often rose to the top of those meetings as the top vote earner. While these individual meeting results were less frequent than those with access-motivated individuals, those meeting results helped Digital Skills earn the second-most first place votes in rural area meeting locations.

However, as Figure 46 shows, Affordability edged out Digital Skills for second most points in the scoring chart due to the strong number of second place votes. Often, Accessibility and Affordability paired as the first and second place votes of many public meeting participants.

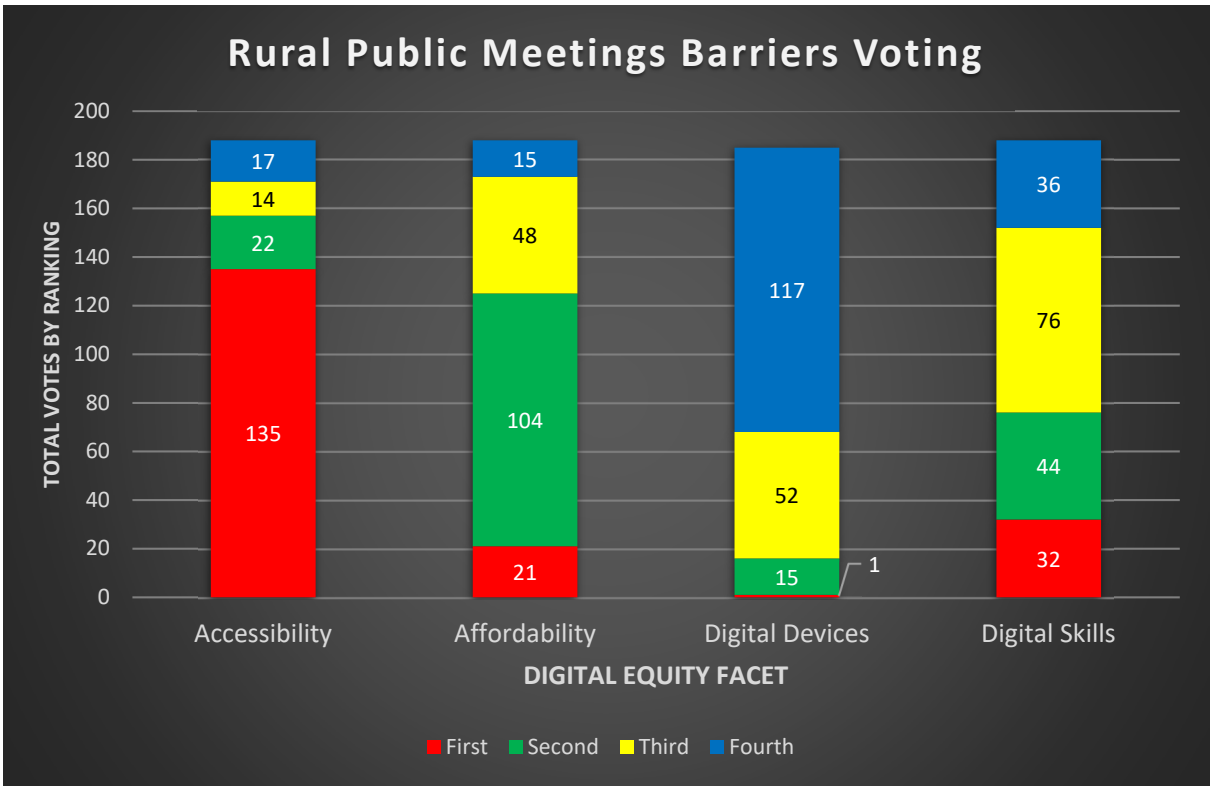


Figure 45 Public Meeting Participant Ranking for Digital Equity Facets, Rural Meetings only

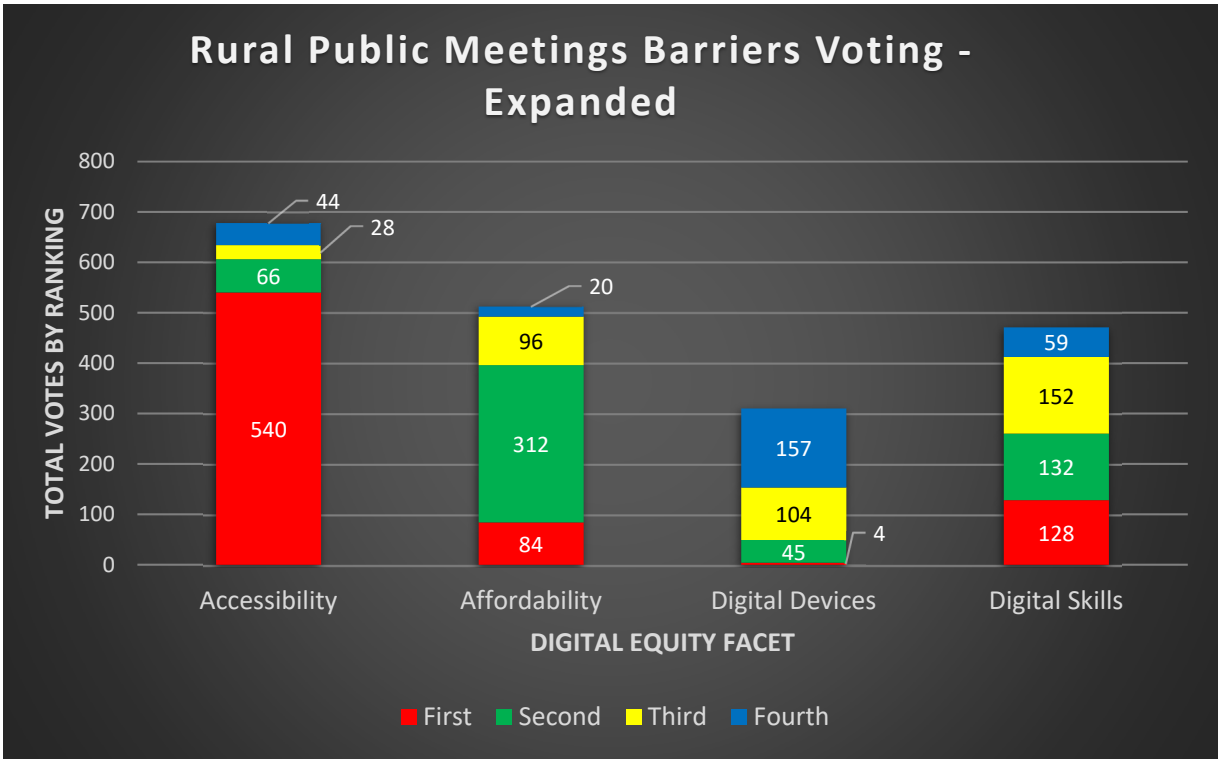


Figure 46 Public Meeting Scoring for Digital Equity Facets, Rural Meetings Only

Taking a look at just the top barrier identified by public meeting participants, Figure 47 shows the influence of the rural meeting location results on the overall percentages. The urban meeting locations resulted in a close split between Accessibility and Affordability while the rural meeting locations pulled the overall results for Accessibility up with the strong showing. Digital Skills and Digital Devices returned essentially the same percentage results across both urban and rural locations with respect to participant's number one barrier vote. Important to note that this figure uses a percentage of votes as opposed to unweighted total to show the differences in voting easily by segment height.

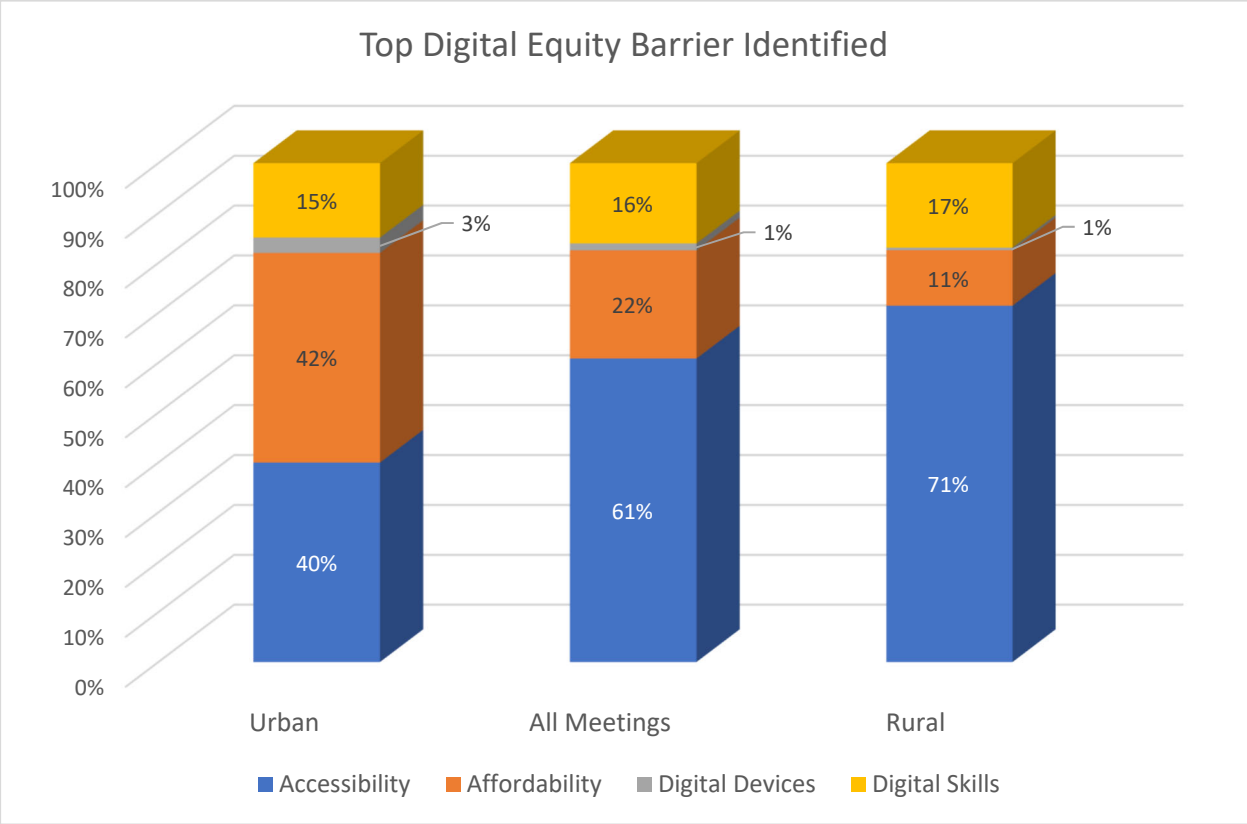


Figure 47 Biggest Digital Equity Barrier Ranking from Public Meeting Participants

Figure 48 looks at the second-place votes in the same way as the figure above. This provides a much more harmonious result between the urban and rural meetings with Affordability earning the most second-place votes across both meeting categories. Digital Skills returned the same percentage of votes while Digital Devices earned a more notable share in the urban meeting locations. Meetings that saw Digital Skills receive notable first-place votes often saw those same individuals vote for Digital Devices with their second-place vote.

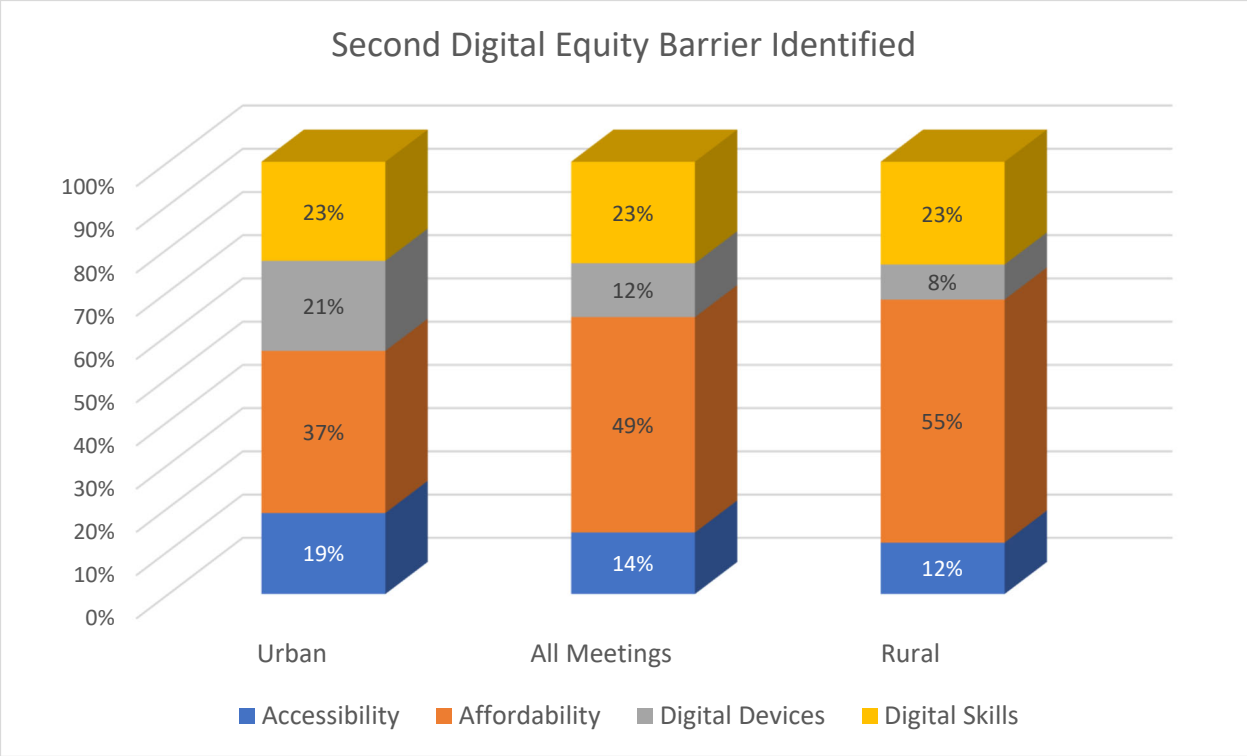


Figure 48 Second Biggest Digital Equity Barrier Ranking from Public Meeting Participants

After the dot voting was complete, the facilitator assessed the results and determined how to structure small group discussions. Participants could break into discussions around Accessibility, Affordability, Digital Devices, or Digital Skills, normally consistent with their voting preferences. Due to modest attendance and the strong single-issue voting in many meetings, most meetings only covered one or two topics in-depth. Small groups were asked to identify a person to serve as recorder, to take notes of the conversation, and a reporter, who would serve as spokesperson for the group at the end to share results of the conversation with the room. Each group was asked to discuss how the barrier impacted the daily lives of their family (or members of their community if it didn't personally impact them) and what program or project ideas they would like to see that could help solve the issue.

3.1.1 Accessibility

Participants relayed many stories of frustration with slow, unstable internet connections restricting the ability to work from home or complete homework assignments. One Iowan relayed that their son was forced to find housing in an area that had highspeed internet to be able to work and continue taking classes, which created an additional financial burden on the family, instead of saving money on rent by living at home. Others relayed missed opportunities for re-entering the job market or taking advantage of a better job opportunity because they couldn't get service to work from home.

Many had personal stories of traveling to places of business that offered free Wi-Fi to gain connectivity to complete tasks. Others expressed frustration that the lack of reliable high-speed internet reduced social opportunities and prevented them from taking advantage of telehealth. Multiple groups mentioned the lack of high-speed internet access as a hindrance to installing home safety systems and Ring doorbells. Lack of access prevented Iowans from participating in

online gaming or streaming shows, which created a form of “Fear of Missing Out” when talking to friends and family.

The lack of connectivity can slow down devices due to a lack of ability to update software, impacting the safety and longevity of the device. Some Iowans talked about having data limited plans, which can throttle down speeds when approaching caps that can impact productivity near the end of the billing cycle. This issue and poor connectivity created inequitable work and social video calls as people spoke of needing to turn off the camera feature in order to participate.

The cost of real estate in neighborhoods was a frequent example, with anecdotes of home sales falling through or needing to take significant financial discounts relative to similar homes with high speed internet access because of the demands from home buyers. Small business owners talked about the significant economic impacts that the lack of connectivity can create, with machines that stop working without remote diagnostic sensing and ability to update. This can have a local impact on rural development as people and businesses may not move to locations without assurances of connectivity. Some participants mentioned the lack of connectivity can impact farm operations, reducing the ability to properly use precision agriculture tools.

One recurring theme to note was that some participants had access to high-speed internet but the service was so unreliable that it was a constant frustration in their lives. From intermittent drops to unpredictable slow-downs in service, an unreliable network produced many of the same issues as above where there was no connectivity available at all.

When asked to provide program and project ideas to help solve connectivity issues, participants overwhelmingly supported the continuation of state grant programs to help subsidize the cost of broadband infrastructure projects. Some participants encouraged leveraging partnerships with Rural Electric Cooperatives to help use existing infrastructure. Many of the conversations about accessibility thought of high-speed internet as a utility, a necessity like water and electric service, drawing comparisons to the rural electrification movement. Some participants encouraged exploration of high-speed internet as a public good as much as possible, including free Wi-Fi in public spaces and/or community run broadband.

3.1.2 Affordability

Almost every conversation during the public meetings about affordability offered stories of families making difficult decisions to try and fit high-speed internet into their budget. Examples ranged from choosing between broadband and other necessities like reliable transportation and groceries to eliminating or reducing excursions and home maintenance and upkeep. Many talked about applying for work starts with an online application, which many can’t afford without a job.

Students in households that can’t afford broadband often struggle to keep up with school work as many assignments require high-speed internet to conduct research, communicate with teachers and classmates, and submit assignments. This disadvantage can place a high burden on the student and the parents to spend additional time and money finding free Wi-Fi locations to get work done. Additionally, participants talked about potential safety threats of sitting in parking lots to gain access or spending additional money on food and beverage to sit in a restaurant that offers the service.

Participants that had previous knowledge of the Affordable Connectivity Program (ACP) talked about the lack of awareness among their fellow Iowans of the program. Those that did know

about the ACP talked about barriers to finalizing applications while others cited discomfort in sharing required information to people helping them fill out the form.

When asked to provide programming and project ideas, many participants wanted better marketing for the ACP to raise awareness levels. Others wanted easier navigation for the process and transparency from their internet service provider on what plans were eligible for the subsidy and how it would be applied to their bill. Some participants talked about working towards removing the perceived stigma of receiving government funding to help meet a need, as some saw this as a major barrier to participation. On the other hand, some participants worried about investing in the ACP when there is uncertainty about the program's future with current funding projected to run out in 2024.

While some participants shared examples of ad hoc community groups providing safe workspaces to connect to a common Wi-Fi point (church basements, community centers), others pushed for more formalized free community Wi-Fi that can serve those needs. An example was cited where a resident could access the community's Wi-Fi network with an established credential through their address. One discussion offered a model for community Wi-Fi that rewarded loyalty by providing discounts after achieving milestone consecutive years of service instead of the more common occurrence of rates increasing to loyal customers over time. Others talked about the need for creating and/or expanding hot spot programs through the community library system and other trusted community locations.

Several discussions brought up the idea of focusing work in multi-dwelling units to use the purchasing power of many residents to drive down service to the one central location, much like a hotel. Some participants encouraged more competition to overbuild in communities, giving residents options for providers, relying on market forces of competition to create more competitive pricing. One idea talked about putting Wi-Fi on all buses.

3.1.3 Digital Devices

The affordability of devices surfaced in conversations at almost every meeting during conversations about accessibility, affordability, and digital skills, underlining the interconnectivity of all facets of digital equity. Several participants talked about the multiple layers of cost for individuals and families to acquire, maintain, and service the devices needed to support the necessary activities associated with the digital society. The cost of setup and installation fees, capital costs to acquire equipment, plus making monthly payments on device and services can be overwhelming. Additionally, investment in devices puts the individual on a cycle, where the device can quickly become obsolete and need to be replaced.

Many participants shared examples of individuals lacking the right device for the task at hand ranging from college students owning only a smartphone, limiting their ability to complete coursework, to the limitations of tablet devices in completing more complex office work. Some tasks may be completed with, say, a smartphone that would otherwise be best performed with a laptop, but it takes longer, subjects the task to a high rate of error, and could ultimately not work if the interface isn't mobile friendly. This can lead to a lot of wasted time and increased frustration.

Participants pitched the idea of a devices checkout program similar to the success of hot spot checkouts at libraries. Others mentioned the importance of tech support for those devices, particularly for aging individuals, on how to acquire and set up a device. Additionally, some

participants noted the appeal of a trade-in program for devices once they age out to receive a discount on an updated device.

3.1.4 Digital Skills

The public meeting discussions identified a wide-ranging suite of digital skills lacking in specific populations and in general that limited the participation of citizens in many aspects of the digital world. That limitation in skills limited job opportunities, social event participation, taking advantage of telehealth appointments, and furthering education. Some felt that the digital skills gap was mostly an aging population issue that would eventually be solved over time while others see digital skills as a constant evolutionary challenge as technology continues to advance.

Participants identified the need for cybersecurity training to help aging individuals overcome a fear of being exploited while also providing the training to younger individuals and others to recognize the risks associated with online activities. Several participants told stories of individuals falling victim to scams that resulted in the loss of time, money, and credit. Many identified the difficulty in troubleshooting tech issues at home, which places a burden on a tech savvy family member to serve as support in many instances.

Many participants discussed the lack of people that can provide the help for those lacking digital skills. Librarians throughout the state have been unofficially appointed by many to be digital skills teachers, some without extensive training themselves. This creates an additional burden on the library system as more help is needed to meet the needs of the public.

Meeting participants discussed free or low-cost digital skills education for adult learners. While some classes can be taught online, many citizens may not be able to or know how to take online courses, so in-person classes were identified as key for beginners. Some participants pointed out how crucial it can be to meet the resident where they are in terms of skill level and location. For example, classes offered at a community college, local library, or local community center may appeal to different populations. Development and distribution of a universal cybersecurity course came up frequently to help people feel more confident engaging in online activities.

Some people identified a possible connection between helping high school students meet their volunteer hour requirements for graduation honors by having those students with higher levels of digital savvy help others with tech support or by teaching basic digital skills. Others took the idea further and described a setup similar to the “Digital Navigators” program being piloted throughout the country where an individual would be embedded in the community to provide tech support and digital skills training for interested individuals.

3.1.5 Exit Survey

The meeting ended with an opportunity for participants to fill out an exit survey. Important to note that not all participants filled out a survey and of those that did, some prompts were left blank in some areas. Additionally, some people attended multiple meetings and were asked to fill out an exit survey only the first time they attended. Given those caveats as to why survey respondent numbers will differ from the dot voting activity above, a notable majority of participants did complete the survey.

Figure 49 asked respondents to vote on each digital equity facet individually. The question was worded as “*How important are each of these possible barriers to broadband and digital services*

*in **your community**?"* Important to note, all four digital equity facets earned a "very" or "somewhat" response in at least 70% of surveys.

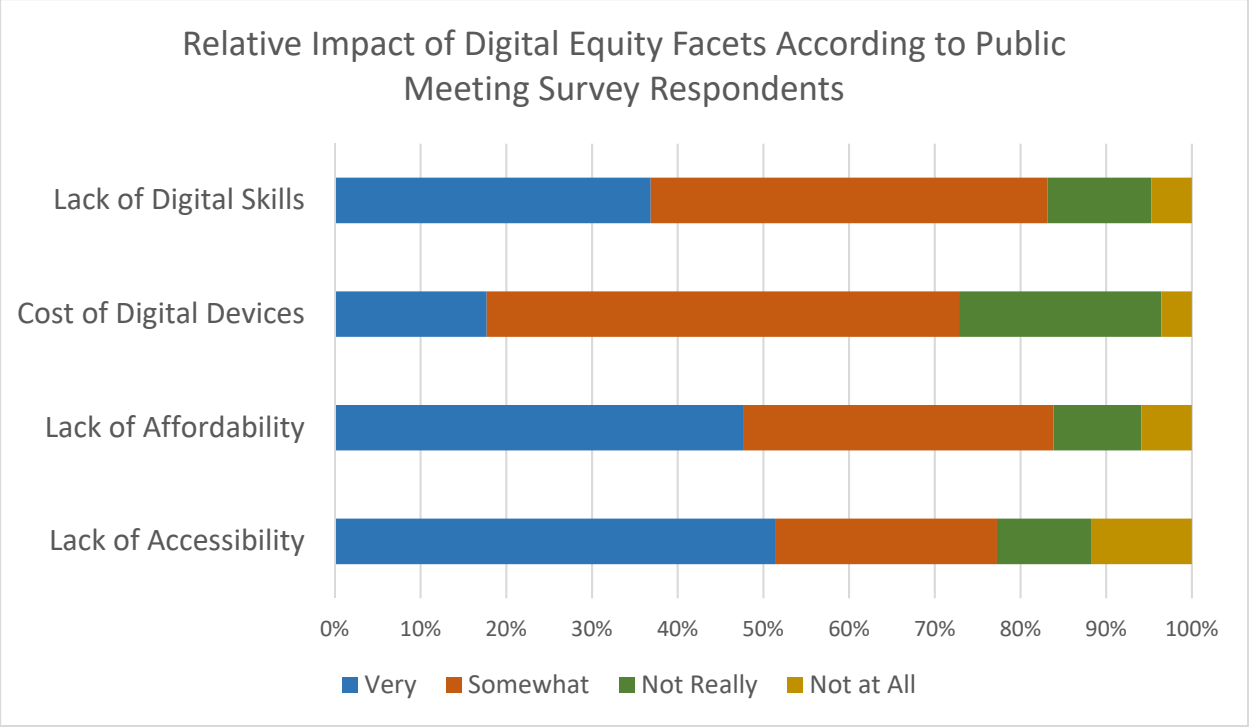


Figure 49 Relative Impact of Digital Equity Facets According to Public Meeting Survey Respondents

Figure 50 asked "*Which of these barriers to broadband and digital services is the biggest problem for **your household**?"* Important to note that the survey provided "none" as one of the checkbox options, which narrowly earned the most votes. This figure may help speak to the motivations behind why individuals may have chosen to attend a public meeting on broadband and digital equity. While a plurality voted "none," their motivations for attendance may be professional (work at an internet service provider, for example) or as part of community engagement. Interestingly, a little over a quarter of respondents identified Accessibility as their biggest personal barrier whereas the dot voting resulted in a much stronger showing as a barrier for the community (61%).

One of the most surprising results from this question was Digital Devices, the category least voted on during the sessions, earned a notable share of votes when respondents thought about this issue personally and not what impacts other people. This result reinforces the importance of this digital equity facet, even if it didn't score as highly in the dot voting exercise.

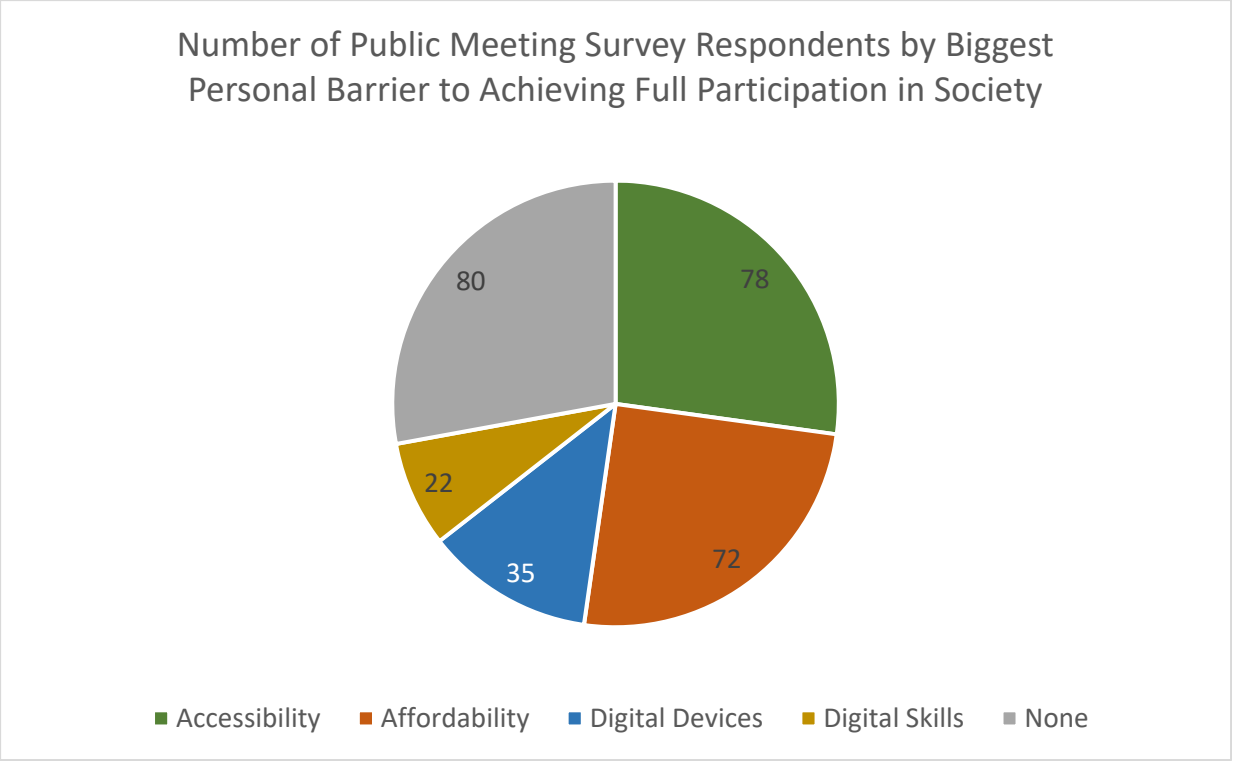


Figure 50 Number of Public Meeting Survey Respondents by Biggest Personal Barrier to Achieving Full Participation in Society

The survey asked "What do you believe is a fair cost per month to pay for high speed internet service?" Both the median and mean responses to that answer were $65 per month. Important to note that survey respondents were largely middle aged and older and mostly from households earning over $75,000 per year. Figure 51 shows the demographic breakout of survey respondents by age group while Figure 52 breaks out survey respondents but household income level.

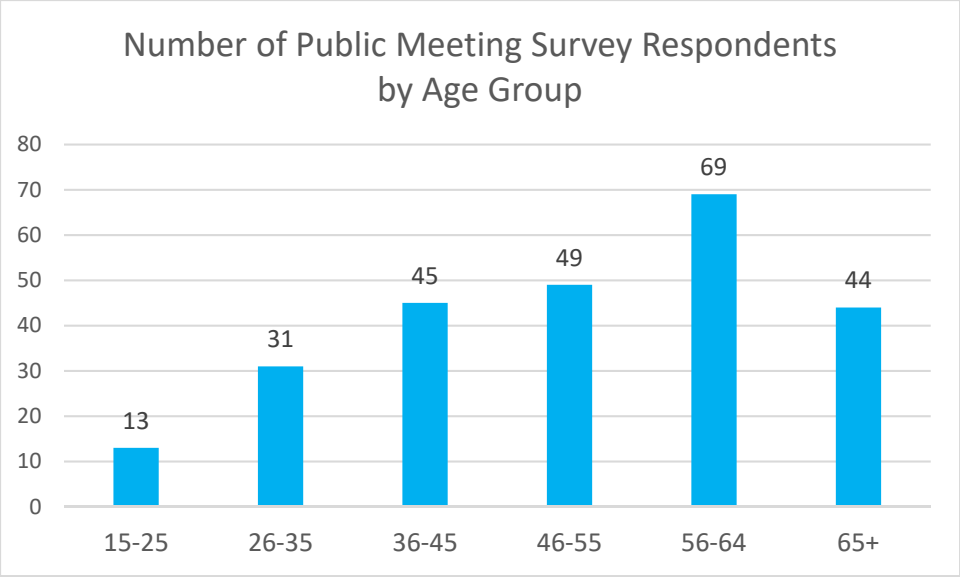


Figure 51 Demographic Breakout by Age Group of Public Meeting Survey Respondents

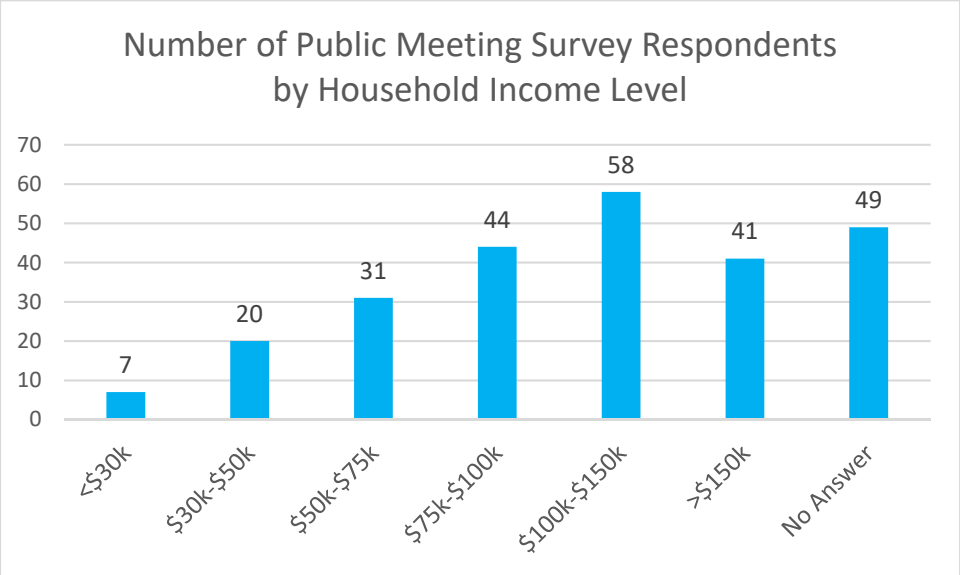


Figure 52 Demographic Breakout by Household Income of Public Meeting Survey Respondents

Relative to the eight identified Covered Populations in the Digital Equity Act, the demographic questions in the survey revealed that participants identified with or lived in a household with someone who identified with seven of the covered populations. Aging individuals, as indicated in Figure 51, accounted for a notable portion of survey respondents. Household income level combined with the answer to the number of individuals living in the home provided enough information to infer that at least 15 survey respondents lived in a covered household. A total of 192 respondents lived in a zip code that corresponds to a rural community, 29 indicated they lived in a household with a veteran, and 25 lived in a household with a disabled individual. A total of 14 respondents indicated they spoke a language other than English at home and 8 identified as a racial or ethnic minority. No question was asked regarding the eighth covered population, incarcerated individuals, as the act defines that population as those who are

currently incarcerated and it is impossible an individual would be both incarcerated and in attendance at a public meeting at the same time.

After the public meetings concluded, a video presentation was uploaded to DOM's YouTube page and socialized with citizens to have a chance to approximate participation in the public meetings. The video had a link in the description to a Google form that mirrored the exit survey attendees completed at the public meetings. Responses from the google form were too few to analyze separately but reflected similar sentiments to those shared during the public meetings.

3.2 Public Engagement

DOM crafted the Digital Equity Plan built on a robust public engagement strategy. Establishing baseline conditions through a statewide survey and a 55-meeting townhall tour reflected the State of Iowa's commitment to understanding and engaging with citizens to understand the issues faced by people and communities in the digital equity space.

Furthermore, DOM assembled a Core Planning Team to help make decisions and engage with stakeholder groups interested in the digital equity space. Each of the eight identified Covered Population areas had at least one subject matter expert represented during the planning process. Additionally, experts from the facets of digital equity, such as digital skills training, were also represented. That network of professionals allowed DOM to engage with a vast network of professionals who work with these issues every day, whether or not they previously thought of the term "digital equity" when completing their work.

During the goal setting process, DOM engaged those larger networks with eight facilitated sessions, one specific to each of the Covered Populations. The goal was to have a hyper-focused session specific to the needs and barriers faced by persons that identify with that particular population. Further discussion and the results of those sessions can be found in the following section.

DOM held a 30-day public comment period from January 3 to February 2, 2024. The public comment period provided Iowans with another opportunity to engage with the State's plans for addressing digital equity issues in the state. The public comment period was administered on the state's public comment interface and garnered 577 views and 9 public comments. Notification of the public comment period was sent via email to members of the Core Planning Team, all participants of the Covered Population facilitated sessions (over 100 individuals), and to all participants who indicated interest while attending the public meeting tour in Spring, 2023 (over 250 individuals). A press release from the governor's office provided additional notification to individuals and news outlets. In addition to official public comments, DOM received dozens of unofficial responses to indicate satisfaction with Plan contents and interest in participation moving forward.

The nine public comments included one comment from a private citizen, four from Iowa-based organizations, and four from national level organizations. The substance of the comments included sharing broadband availability issues, support for the seven goals of the plan, sharing research an organization found germane to digital equity work in Iowa and across the country, and potential partnership opportunities as the Plan moves into the implementation phase. A couple of comments suggested alternative approaches to implementation or detailed the key components of successful implementation needed to achieve identified goals in the Plan. No specific comment required a change to the Plan. Those organizations with substantive

suggestions and partnership ideas will be key in helping the success of the Digital Equity Plan moving forward. A summary of the public comments are provided in Appendix B.

DOM will aim to use an adaptive management approach in administering digital equity implementation activities. By listening to feedback from professionals, stakeholder groups, and citizens, DOM can shape solutions throughout the life of the program. Feedback will likely take place through a webpage dedicated to digital equity activities, networking with professionals in the space through meetings and presentations, and by revisiting the statewide survey to assess progress.

DOM met with many individuals from organizations serving the people of Iowa interested in digital equity. While this list is as comprehensive as possible as of the public notice, DOM wants to continue building on these relationships and fostering new ones to help close the digital divide across the state.

List of organizations engaged with throughout the development of the Digital Equity Plan:

A – AARP, Access 2 Independence, Advance Southwest Iowa Corporation, Aging Resources, Allamakee Clayton Electric Coop, American Legion, Ankeny School District, ASK Resource Center, Autism Society of Iowa

B - Bolton & Menk, Inc, Brain Injury Alliance of Iowa

C - Cedar Rapids Schools, Central Iowa Center for Independent Living, Common Good Iowa, Community Broadband Action Network, Community Colleges for Iowa, Corinthian Baptist Church

D - Des Moines Area Community College, Des Moines Area Regional Transit Authority, Des Moines Schools

E - Eastern Iowa Community College, Easterseals Iowa, Emmetsburg Economic Development, Evelyn K. Davis Center for Working Families

G - Genesis Youth Foundation, Great Plains Action

H - Habitat for Humanity North Central Iowa, Happy at Home Consulting, Hawkeye Area Community Action Program, Hawkeye Community College

I – IMPACT, Indian Hills Community College, Indian Hills Schools, Inside Out Reentry Community, Iowa Area Development Group/Ripple Effect, Iowa Association of Area Agencies on Aging, Iowa Association of Councils of Government, Iowa Association of County Commissioners and Veteran Service Officers, Iowa Central Community College, Iowa Coalition for Integration and Employment, Iowa Community Action Association, Iowa Courts, Iowa Department of Corrections, Iowa Department of Education, Iowa Department of Human Rights, Iowa Department of the Blind, Iowa Department of Transportation, Iowa Department of Veterans Affairs, Iowa Development Disabilities Council, Iowa Downtown Resource Center IEDA, Iowa Economic Development Authority, Iowa Education Services for the Blind and Visually Impaired, Iowa Farm Bureau Federation, Iowa Health and Human Services (HHS), Iowa HHS - Community Action Agencies, Iowa HHS - Division of Aging and Disability Services, Iowa HHS - Family Development and Self Sufficiency, Iowa HHS - Temporary Assistance for Needy Families, Iowa International Center, Iowa Lakes Community College, Iowa Law Org, Iowa Legal Aid, Iowa Migrant Movement for Justice, Iowa Rural Development Council, Iowa State

University, Iowa State University Extension & Outreach, Iowa Statewide Independent Living Council, Iowa Utilities Board, Iowa Valley Community College, Iowa Veterans, Iowa Vocational Rehabilitation Services, Iowa Western Community College, Iowa Workforce Development

K - Kirkwood Community College

L - League of Cities, League of United Latin American Citizens

M - Marion Economic Development, Mercy Des Moines, Mercy Hospital Storm Lake, Meskwaki Nation, Mid-Iowa Planning Alliance, Minburn Communications

N - National Alliance on Mental Illness Iowa, North Iowa Area Community College, Northwest Iowa Community College

O - Omaha Tribe of Nebraska

P - Polk County Behavioral Health and Disability Services, Polk County Family Enrichment Center, Polk County Public Housing Authority, Premier Communications, Primary Health Care, Polk County

R - Refugee and Immigrants Association

S - South Central Iowa Local Workforce Development Board, Southeastern Community College, Southwestern Community College, State Library of Iowa, Support for Career, Children and Families of Iowa

T - T-Mobile

U - United Way of Central Iowa, University of Iowa, University of Iowa School of Social Work, University of Northern Iowa, Urban Dreams, US Cellular, USDA Iowa Rural Development

V - Veterans of Foreign Wars, Veterans Tech Support

W - Western Iowa Tech Community College

Vision for Digital Equity

4 Vision for Digital Equity

4.1 Vision

The State of Iowa developed a vision statement for the Digital Equity Plan to serve as a north star for digital equity initiatives for the life of the plan and beyond. Iowa's digital equity vision statement:

"All Iowans will have access to affordable high-speed broadband internet, useful devices, and the training and support in order to participate, contribute, and thrive in society."

In order to accomplish the digital equity vision in Iowa, the Department of Management (DOM) worked with myriad partners and stakeholders, described in detail in this section, to develop seven actionable goals with strategies and measurable objectives. Some of the strategies articulated in this section will likely see DOM take the lead where other strategies will be best led by a partner group or a collection of organizations best suited to serve specific groups of Iowans. Digital equity in Iowa cannot be solved by a single organization acting alone. However, collective and coordinated efforts can shrink and close the digital divides separating Iowans from better opportunities in the classroom, the workplace, and at home.


This section satisfies Additional Requirement #1.

4.2 Alignment with Existing Efforts to Improve Outcomes

The State of Iowa carries a long history of supporting and facilitating programs to reduce the digital divide. Since 2015, the Iowa Department of Management (DOM) led the administration and distribution of approximately $500 million in state and federal incentives through the Empower Rural Iowa Broadband Program to expand access to unserved and underserved areas of the state, and chartered leading affordability and mapping programs.

The Empower Rural Iowa Broadband Program works to ensure all Iowans can obtain equitable access to broadband and digital technologies. Through broadband expansion and affordability programs, the Empower Rural Iowa Broadband Program will continue to take important preliminary steps to ensure all Iowans have the motivational, material, skills, and usage access (i.e., leveraging the Internet to achieve "life-enhancing" uses) necessary for participation in the information society.

The State of Iowa intends to build on our strong foundation of programs, capabilities, and expertise to reduce the digital divide in our state. This includes strategies to address workforce training, education, health, civic and social engagement, and delivery of other essential services. Where possible, the Digital Equity Program will work with sister agencies and like-minded organizations to incorporate digital equity elements into their strategic and operational plans.


This section satisfies Statutory Requirement #3 and Additional Requirements #5 and #10.

4.2.1 Economic and workforce development

The importance of broadband on the digital economy expands every year. From how we apply for jobs to the jobs themselves, broadband provides the foundation in shaping today's workforce. Online job board searches, uploading resumes, and accessing portals for applications serve as the norm in today's labor market and without a broadband connection or the skills to navigate, qualified workers could miss out on taking advantage of those opportunities. Partial- or full-remote work can help engage or reengage portions of the population not in a position to travel into a physical location or open up opportunities to live in more affordable areas without the commute.

Broadband also serves to support the exchange of goods and services in our economy more than ever before. Providing safe and secure transactions, maintaining up-to-date point of sales and inventory systems, and keeping machinery up to date and operational all help support business in Iowa. Small businesses able to access customers around the world have a 30% higher survival rate than businesses without that connectivity. Of particular importance to Iowa's economy, high-speed internet can help facilitate precision agriculture practices, which save operations money on reduced agricultural inputs while protecting natural resources. These and other benefits support research that indicates broadband produces a high return on investment with regards to economic activity.

In the Governor's Vision for Iowa, the Governor's Office prioritizes preparing the next generation of Iowans entering the workforce as a main pillar in the vision. In 2018, Governor Reynolds signed the Future Ready Iowa Act, launching an aggressive workforce policy initiative to ensure 70 percent of Iowans attained training or education beyond high school by 2025. This followed the first Executive Order from Governor Reynolds on January 29, 2018 that established the Iowa Clearinghouse for Work-based Learning. The Digital Skills goals of the Digital Equity Plan support the access and skills necessary to prepare these Iowans to achieve that necessary education and training to prepare for a career. Individuals from Iowa Workforce Development helped shape this plan to ensure Iowa's workforce stays competitive. The Digital Equity Program will continue to work with workforce agencies and associated labor organizations to incorporate digital equity principles in strategic planning efforts including but not limited to involvement the Coordinating Council as described in Section 5 and to help build a community of Digital Navigators who will be key to accomplishing several Plan goals.

4.2.2 Education

Iowa's strong history of K-12 school education, robust network of community colleges and private institutions, and well-respected Regents universities reflects its commitment to education. The COVID-19 pandemic sharpened the focus of the importance of how a virtual connection can serve Iowans in continuing their educational pursuits. As educational and workforce training opportunities increase, more Iowans can access those courses with internet access. These opportunities can widen access to individuals seeking a new path or building on the one they are currently taking. It can also provide a new path for people unable or unwilling to attend more traditional forms of in-person education.

In order to take advantage of those opportunities, individuals must earn a certain level of digital skills to reap the benefits of online learning. Education for digital skills exists in a never-ending loop as technology evolves. Learning new digital skills to take advantage of the latest tools, software, and applications helps individuals advance their education in their chosen field of interest – either formally through a degree or certificate program, or informally through self-

improvement. As technology and tools evolve, the individual must continue to add those digital skills to the toolbox in order to keep up with modern challenges and opportunities. Therefore, education plays a role both in the acquisition of digital skills for all levels of learners and the pathway to using digital technologies to enhance and improve educational opportunities for all fields.

In the Governor's Vision for Iowa, the Governor's Office prioritizes education of Iowans as a main pillar of the vision. The vision aims to "provide every student—regardless of income, zip code, or ability—an education that will best prepare them for a successful life." That phrasing reinforces the importance of digital equity in providing the opportunities for all Iowans to benefit from a world class education. This includes investing in STEM-based education public charter schools. The Digital Skills goals of the Digital Equity Plan support these policy goals. The Iowa Department of Education, community colleges, Regents universities, and the State Library helped build this plan to ensure that digital skills development efforts dovetail with current statewide initiatives. Additionally, gaps identified by these organizations help sharpen the focus of where Iowa can invest Digital Equity Capacity Grant funding in the future. Add in relationships with educational institutions at all levels and Iowa stands in a strong position to deliver digital skills training to ensure Iowans hold a strong position to achieve their education and workforce training goals. DOM will lean on these organizations to help accomplish Goal 5 in developing a culturally responsive, robust and sustainable learning model to implement statewide and at the local level.

4.2.3 Health

Research shows that better social connectedness can lead to longer life, better health, and improved well-being. The ability to access and use broadband allows for increased social connectedness by allowing people to connect virtually, which is particularly useful in situations where in-person meetings may be unfeasible. Those social connections can help battle loneliness and foster supportive relationships that can aid in coping with difficult times, stress, anxiety, and depression.

Telehealth provides Iowans with a direct path to professional medical help for physical and mental healthcare. Patients can access professional help online for issues not requiring an in-person visit. This alleviates requirements for transportation, time off work, or child care. This savings in time and travel can also equate to immediate cost savings for the individual. Telehealth may also provide a path for people to seek medical help that may not feel comfortable doing so in an in-person setting. All of these benefits help support the wider goal of Iowa's Healthiest State Initiative.

In the Governor's Vision for Iowa, the Governor's Office prioritizes healthcare for Iowans as a main pillar of the vision. Many of the Governor's Office healthcare priorities intersect with or are supported by digital equity topics. This includes "Thrive Iowa," connecting at-risk individuals with programs and organizations working to help those individuals through an online system. The Thrive Iowa program identifies "navigators" as an important component to implementation, a concept aligned with this Digital Equity Plan in multiple goals outlined in the Plan. Governor Reynolds's Executive Order 2 formed the creation of the Children's Mental Health Board on April 23, 2018. Additionally, the vision identifies cybersecurity for the protection of minors from exposure to pornographic material online as an important component of the health initiative. This aligns with the Online Privacy and Cybersecurity goal in the Digital Equity Plan.

4.2.4 Civic and Social Engagement

Iowans engage with friends and family using digital tools. The availability of video calls can help close the distance between relations in a way that a phone call or text may not provide. Iowans with hobbies, passions, or interests may find groups online of like-minded individuals and communities to share and support those interests. Broadband supports community connectedness to facilitate the sharing of everything from neighborhood news to upcoming festivals and events, which can foster greater community identity.

The US Surgeon General released a report titled “Our Epidemic of Loneliness and Isolation” warning about the rising number of people experiencing measurable levels of loneliness and the real health impacts associated with the issue. While online communities can’t fully replace in-person human interaction, digital tools can help connect people effectively with those that share similar interests and with friends and family more frequently. They can also help inform Iowans of opportunities for in-person social interaction and serve as a tool for planning future events.

The Governor’s Office supports the vitality of rural Iowa through the Vision centered on a focus for agriculture in rural Iowa. The Empower Rural Iowa initiative was launched via Executive Order 3 on July 18, 2018, which included several broadband grant rounds to connect more Iowans to highspeed internet. The Governor’s Office supports participation in civic opportunities including voting in state elections, which aligns with the goals of Essential Services outlined later in the Plan. Governor Reynolds’s Executive Order 7, issued on August 5, 2020, restored the voting rights of thousands of Iowans who completed felony sentences, reinforcing the importance of participation from Iowa’s citizenry.

4.2.5 Delivery of Other Essential Services

The State of Iowa provides essential services to Iowans across the government enterprise. Improved access to and the digital skills to navigate essential services can reduce the time involved in the delivery of programs. The State of Iowa will work to remove any barriers to entry to those services with regards to access, readability, and usability. Removal of barriers leads to higher participation rates for the people who need these services the most. By systematically evaluating the accessibility of these services, the State of Iowa can identify and address those issues.

To that end, DOM evaluated accessibility tools available on the marketplace that could be integrated into existing application delivery, ideally automatically scanning solutions prior to deployment to ensure consistent accessibility checks and scoring. The primary focus of the evaluation centered on developer tools used to analyze source code (linters) as well as client-side testing tools, which focus more on the browser while maintaining the goal of finding a cost-effective solution that could provide the functionality required with limited developer management. The results of the evaluation will help inform DOM how best to ensure delivery of essential services moving forward.

Public libraries play an important role in Iowans accessing these essential services. Most communities in Iowa have a local library that provides free internet, desktop computers, and in many cases, librarians that can help aid Iowans in accessing these services. Some libraries may offer hotspot checkout programs to help facilitate additional Wi-Fi access.

The Governor’s Office has prioritized streamlining State of Iowa government resources and programs through consolidation of executive branch departments. This effort aims to reduce

redundancy and potential confusion of Iowans accessing essential services, which aligns with the goal outlined later in the Plan.

4.2.6 Incorporation of Other Digital Equity Plans

DOM did not find any existing Digital Equity Plans in the state of Iowa during the asset inventory research process. However, DOM will link to any plans created in the future on the state's digital equity website and coordinate with interested parties on a case-by-case basis. Further, any refinement or revision of the State of Iowa's Digital Equity Plan in the future will consider incorporation of other digital equity plans to reflect the landscape of digital equity plans at that time.

4.2.7 Coordination of State Digital Equity Capacity Grant Funding

The State of Iowa will host a webpage to help coordinate digital equity initiatives, including those that include the use of the State Digital Equity Capacity Grant funding. Implementation updates will be posted along with milestone and annual status updates. The State of Iowa will advertise and post funding opportunities for digital equity initiatives for partners to apply. While the Digital Equity Program will work closely with Iowa's BEAD Program, Iowa does not anticipate any non-deployment funds to be available in implementing the plan. The goals described herein will be addressed by Digital Equity Capacity Grant Funding only. Additionally, BEAD grant recipients will be required to provide a low-cost option at the rate of no more than $40 per month after considering any federal subsidy programming. Many of the BEAD projects will be awarded in rural areas, addressing the rural covered population

4.3 Strategy and Objectives

DOM worked with the University of Northern Iowa's Institute for Decision Making (IDM) to facilitate planning sessions with the Core Planning Team and networks of individuals who work with and represent the eight covered populations. The Core Planning Team served as an operations panel for DOM to make planning decisions and help disseminate information to their vast professional networks to ensure the successful development of Iowa's Digital Equity Plan. The following lists the organizations represented on the Core Planning Team and the covered population or digital equity facet they represent:

- Department of Human Rights (2 individuals), Members of Ethnic & Racial Minorities, English Learners
- Meskwaki Nation, Members of Ethnic & Racial Minorities
- Iowa Health and Human Services Division of Aging and Disability Services, Aging Individuals
- Department of Corrections (2 individuals), Incarcerated Individuals
- Department of Veterans Affairs, Veterans
- Iowa Economic Development Authority – Rural Revitalization Program, Rural Residents
- Department of Human Rights – FaDSS Program, Covered Households
- Iowa Coalition for Integration & Employment, Individuals with Disabilities
- Department of Education (2 individuals), Digital Skills
- State Library, Digital Skills

The Core Planning Team participated in the first facilitated planning session with IDM to help draft the scope of goals and objectives at a big picture level. The Core Planning Team then helped recruit individuals in their network who work with each of the eight covered populations to build out a specific session focused on their specific population for a total of eight sessions. Those sessions provided a more granular view of the barriers and needs of each population. For example, the individual from the Department of Veterans Affairs recruited a team of people who work with veterans for a special planning session focused on the needs of the veteran community with respect to digital equity issues. The Core Planning Team then reconvened for a tenth and final facilitated session to finalize the goals and objectives described herein.


This section satisfies Statutory Requirement #2 and Additional Requirement #6

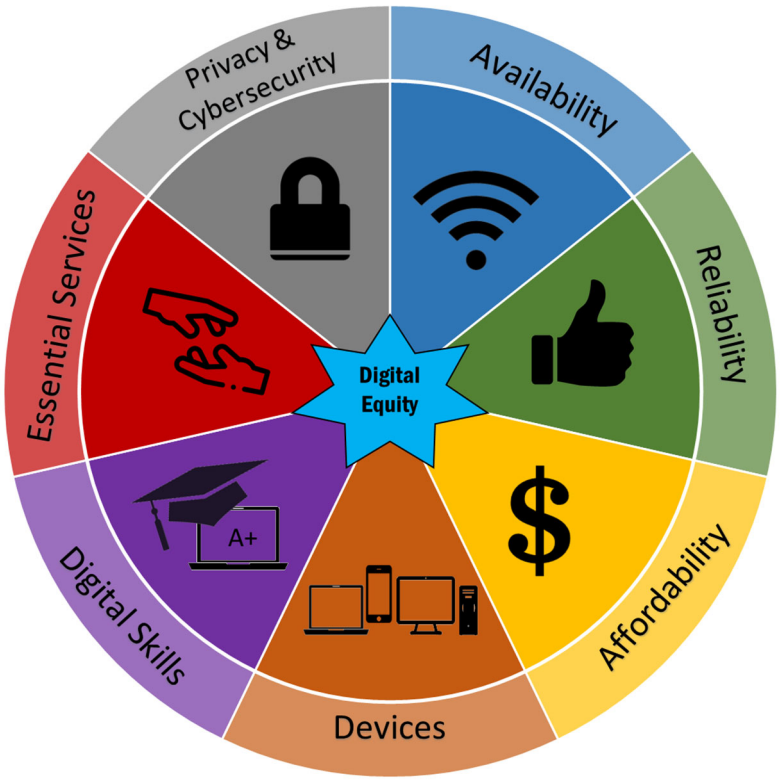
4.3.1 Statewide Goals, Objectives, and Strategies

Through the course of ten facilitated meetings, DOM, Core Planning Team, and members of a vast network of agencies, non-profit organizations, and invested entities helped create seven goals to help close the digital divide in Iowa. These goals each have measurable objectives and strategies associated with them for the State of Iowa and their partners to work towards over the life of the Digital Equity Plan. DOM will not accomplish any of these goals alone and will need the help of partners working in concert on these identified challenges to improve digital equity in the state.

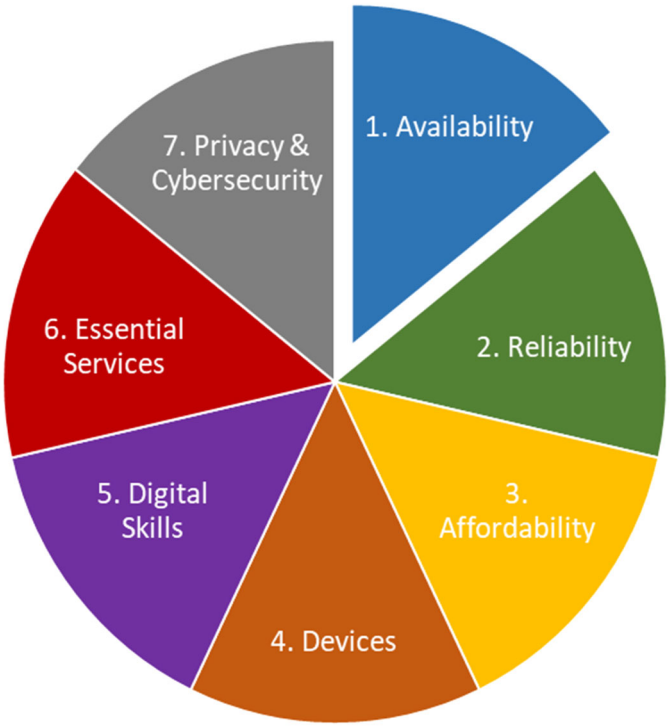
In some instances, DOM may be in the best position to take the lead on a particular activity or strategy. Other opportunities may be better suited for a partner agency, a non-profit organization, or another invested partner group to deliver solutions to their constituents. DOM will help coordinate where appropriate to work with interested parties to apply for additional funding and implement aspects of the plan.

The seven goals established through the planning process address the following major categories:

1. Broadband Availability
2. Broadband Reliability
3. Broadband Affordability
4. Availability and Affordability of Digital Devices and Technical Support
5. Digital Skills
6. Online Accessibility & Inclusivity of Essential Public Resources and Services
7. Online Privacy and Cybersecurity



Goal 1: Broadband Availability - All Iowans will have broadband access by 6/30/2029.



As demonstrated in the public meeting tour, the statewide survey, and in the facilitated sessions, accessibility to high speed internet remains paramount for many Iowans. DOM's Broadband Program has an established history of working to close the digital divide through eight previous rounds of grant funding before the significant investment of the Broadband Equity Access and Deployment (BEAD) Program commences. The Digital Equity Program can help coordinate efforts with the BEAD Program to ensure Iowans understand the broadband availability and expectations for buildout over the implementation period. Furthermore, the Digital Equity Program will work to provide information on public Wi-Fi and charging stations so that all Iowans can stay connected if they are otherwise unable to have that connection in their place of residence. These public Wi-Fi stations could include parks, community public spaces, and other others.

Strategy 1a: Administer and promote the Empower Rural Iowa Broadband grant program to incentivize broadband infrastructure build out in Iowa.

Key Activities:

- Distribute matching fund awards to broadband providers for infrastructure build out within Iowa.
- Provide regular updates to Iowa's Broad Availability Map to identify the locations and availability of broadband service.
- Produce an annual report of build out activity within Iowa.

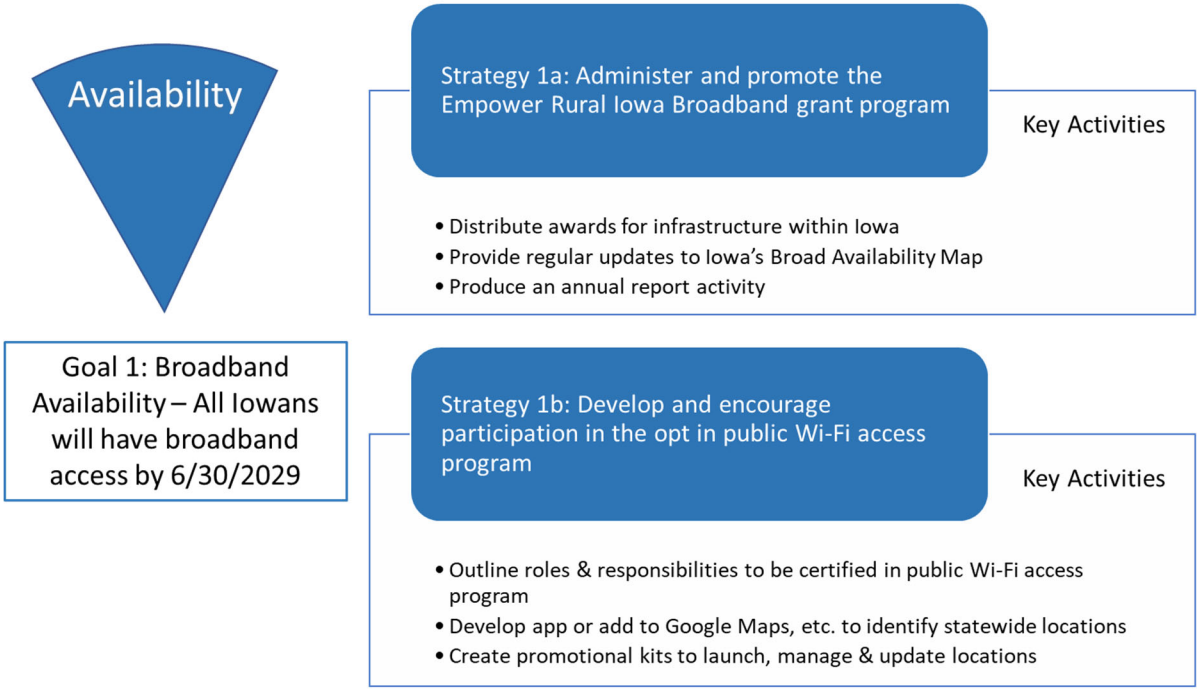
Strategy 1b: Develop and encourage participation in the opt in a Wi-Fi access program to provide public (indoor and outdoor) Wi-Fi and device charging access in urban and rural Iowa.

Key Activities:

- Outline local roles and responsibilities for communities and/or organizations to become a certified participant in a Wi-Fi access program. Work with providers to offer discounts in partnerships with Wi-Fi access program participants.
- Publish a statewide map and application that identifies public Wi-fi locations. Develop app or add to Google Maps, etc. to identify statewide locations. In addition, provide a mechanism for public, private and non-governmental organizations to register and certify

public Wi-Fi locations. Location data will be published as open data available for map providers like Google, Bing, Apple, Facebook and other providers.

- Create promotional kits for organizations to launch, manage and update their new locations, including but not limited to branded signage/window clings, set up of device charging stations, recommendations on selecting, installing and replacing Wi-Fi routers and equipment, and addressing cybersecurity related issues.



Measurable Objectives:

100% of Iowa households and businesses have the opportunity to access existing broadband infrastructure if they so choose. In December of 2023, an estimated 130,814 locations lacked 100/20 Mbps broadband service. A total of 66,646 locations, indicated by a green dot on the map below in Figure 53, will be covered by a project funded by state or federal programs to provide service in the coming years. The BEAD program will work to close the gap on the remaining 64,168 locations, indicated by a red dot on the map below.

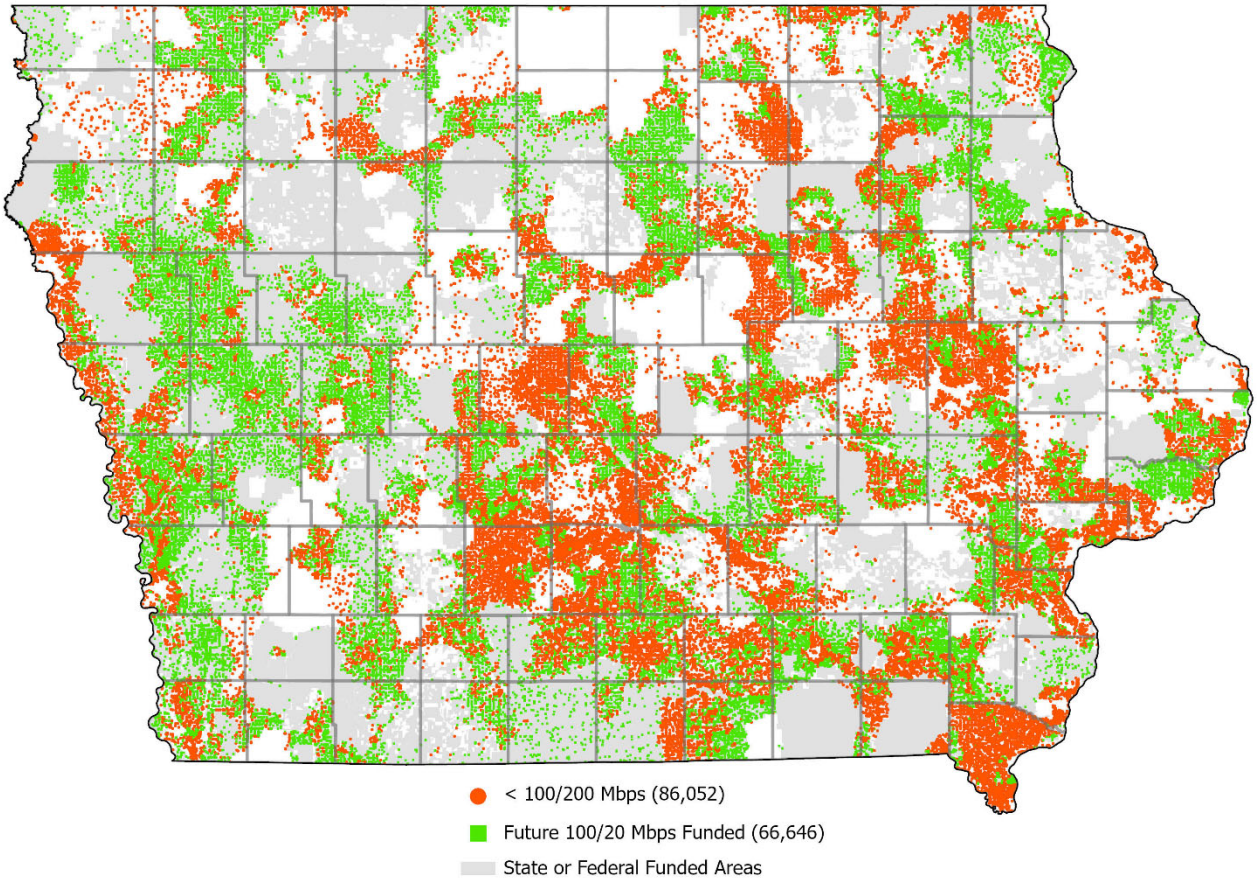


Figure 53 Map of current broadband investment (green) and target locations for BEAD (red)

Iowa will map and promote a network of at least 500 public indoor/outdoor Wi-Fi points of access and/or charging stations by the end of 2029. A public Wi-Fi access program will make available an interactive map to show participating locations to help inform Iowans of where these publicly accessible locations are for internet access and for charging of digital devices. Locations will ideally be geotagged by the participating entity and made available to the public.

Barrier / Gap Addressed:

As discussed in Section 2.1.2 and Section 3.1.1, Iowans do not currently have universal access to or adoption of high-speed internet. This challenge impacts all covered populations and remains foundational to every other piece of the plan. By supporting the BEAD Program's efforts to close the access gap, Iowans in covered populations will be able to access high-speed internet. Those that may choose to not or cannot have that service in their home can still have access through public Wi-Fi, which can close the gap even further. By supporting and promoting existing Wi-Fi access spots and working to expand the number of locations mapped over time, more individuals in covered populations can access high-speed internet safely and regularly.

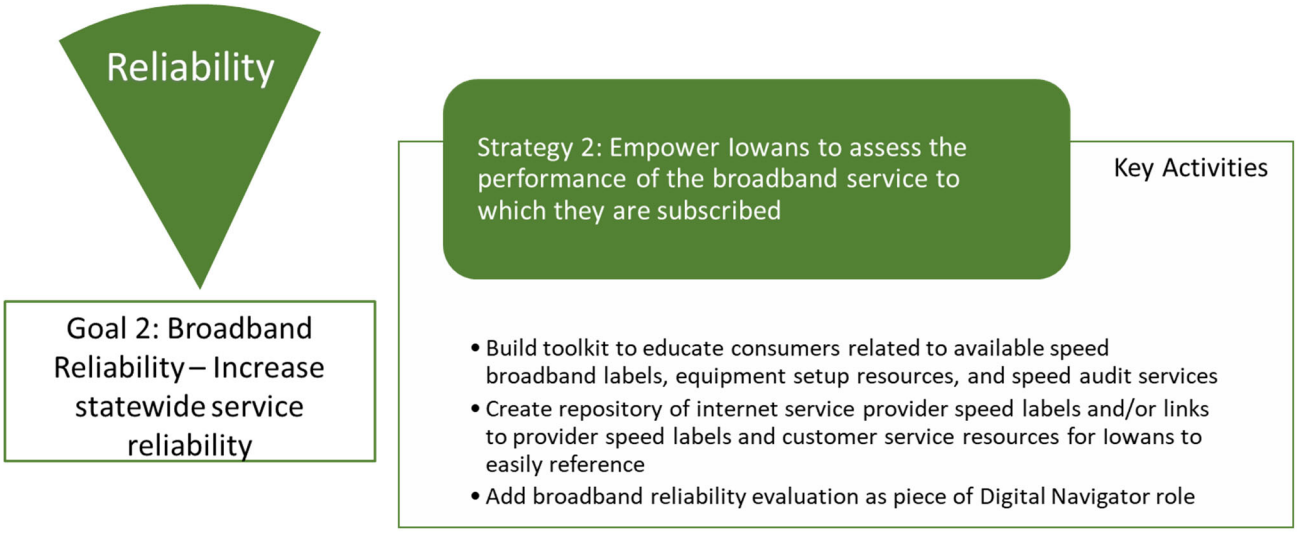
Goal 2: Broadband Reliability - Increase statewide service reliability.

One theme that emerged from the statewide public meeting tour and the statewide survey was that many Iowans were not satisfied with the performance of their internet service. From a lack of speed options to frequent drops in service, many Iowans demand more from their internet but may not be able to find it with limited options in their area. We also know that setting up a Wi-Fi system at home can lead to reductions of speeds if the right equipment is not used or is set up incorrectly. Encourage greater transparency in the broadband marketplace so that Iowans in covered populations can understand the features and capabilities of the broadband products they purchase and ensuring proper in-home setup with up-to-date technology would provide consumers with enough information to determine if their needs are being met. If not, understanding how to conduct a speed and use the map challenge process in advocating for more reliable service.

Strategy 2: Empower Iowans in covered populations to assess the performance of the broadband service to which they are subscribed.

Key Activities:

- Build toolkit to educate consumers related to available broadband internet package labels, equipment setup resources, and speed audit services.
- Create a repository of internet service provider broadband internet package labels and/or links to provider labels and customer service resources for Iowans in covered populations to easily reference.
- Add broadband reliability evaluation as a piece of Digital Navigator role (Digital Navigators described further in Digital Skills Goal 5). Navigators can potentially help Iowans in covered populations participate broadband map challenge processes made available by the FCC and the State of Iowa.



Measurable Objective:

Reduce the percent of Iowans in covered populations who are very or somewhat dissatisfied with their home internet quality from 30% to 20% from statewide survey results by 2029. Ideally, DOM will gather additional information on reliability to better understand the scope of the issue in Iowa with specific metrics, which may allow the state to develop additional measurable objectives down the line. However, working with Iowans to better understand internet packages through labeling, properly setting up home Wi-fi equipment, and using speed tests to understand the realized internet speed should improve the overall satisfaction / dissatisfaction percentage from the statewide survey results. Figure 54 shows the baseline from the 2023 statewide survey and an example of a potential goal condition from a future survey conducted in 2029 to show progress.

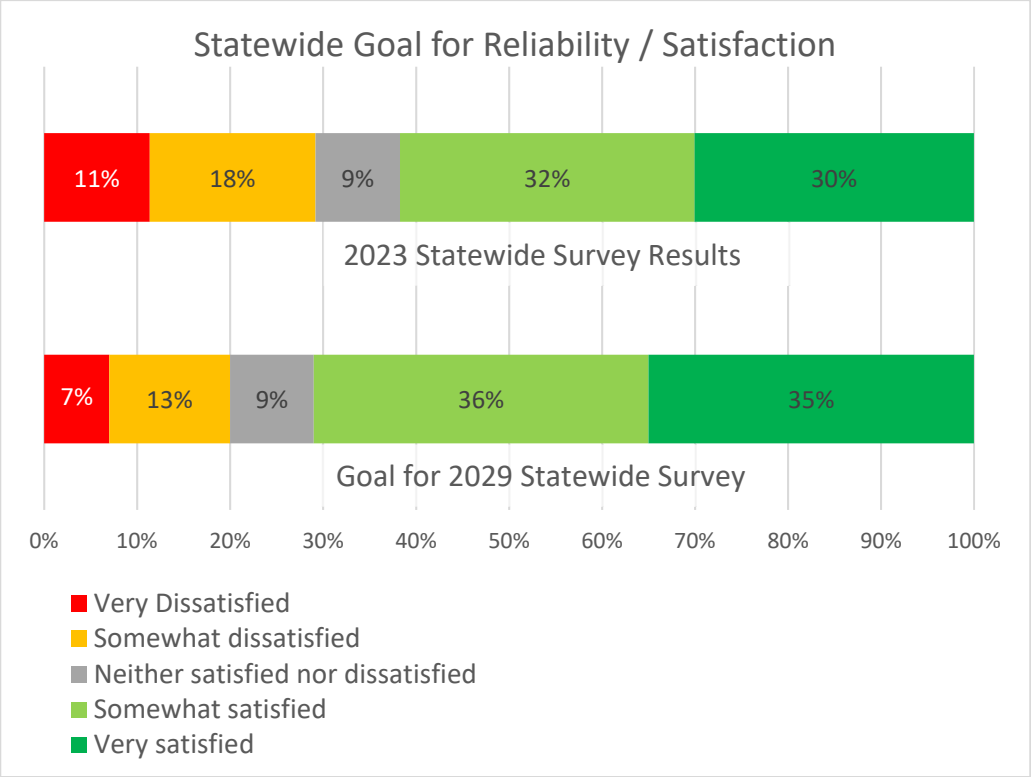
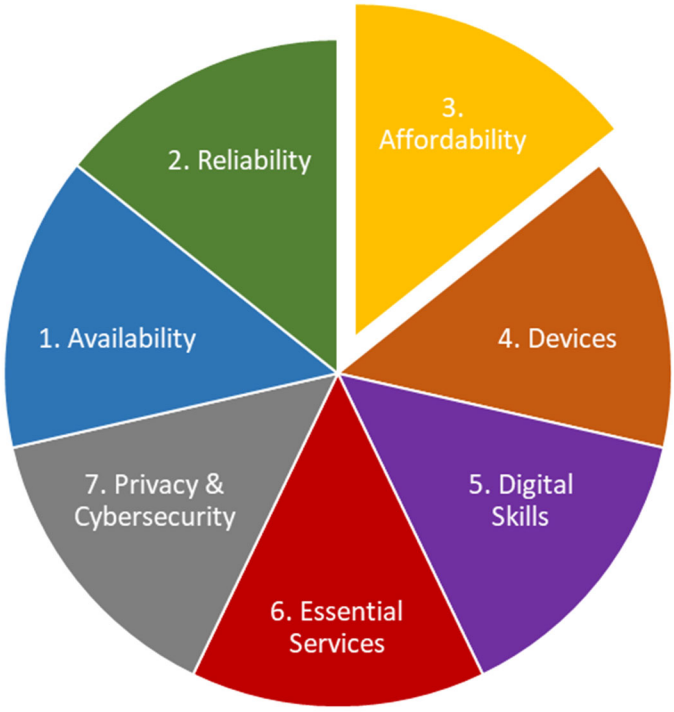


Figure 54 Baseline and goal for statewide reliability / satisfaction of broadband

Barrier / Gap Addressed:

One barrier that was discovered through the statewide survey and the public meetings was the concept of reliability. Individuals of covered populations routinely identified reliability issues as discussed in Section 2.1.2 and Section 3.1.1. While reliability was not a defined term at the outset of digital equity planning activities, it became clear it required a separate goal to address the barrier. Creating a toolkit will help individuals in covered populations better understand the service they are purchasing through broadband labels, guides to properly install updated equipment, and instructions on how to conduct speed tests to determine consistency in service, Making this a key component of a digital navigator network increases the likelihood the message is delivered to those in need.

Goal 3: Broadband Affordability - Achieve parity with the national average enrollment in the Affordable Connectivity Program (ACP).



A notable portion of Iowans in covered populations indicated that the cost of high-speed internet served as a barrier to participate in online activities through the statewide surveys, public meetings, and facilitated sessions. However, Iowa's enrollment in the ACP ranked 43rd of fifty states as of December, 2023. While enrollment rates rise in Iowa, they are also rising throughout the country as more people learn about the benefit, keeping the gap between Iowa's enrollment percentage and the national average steady. The goal will be to close the gap between Iowa's enrollment percentage of eligible households and the national average until Iowa reaches parity. This will not be a fixed number that can be determined at this moment in time but rather a point in the future as the national average will also increase from current participation levels. Iowans unable to afford a broadband subscription with the support of a subsidy program could close the loop on their home internet needs with access to Wi-Fi hotspot checkout programs. The public libraries in Iowa have a successful history of administering checkout programs to meet the needs of Iowans.

Strategy 3a: Engage in an Awareness Campaign designed to increase participation in the ACP.

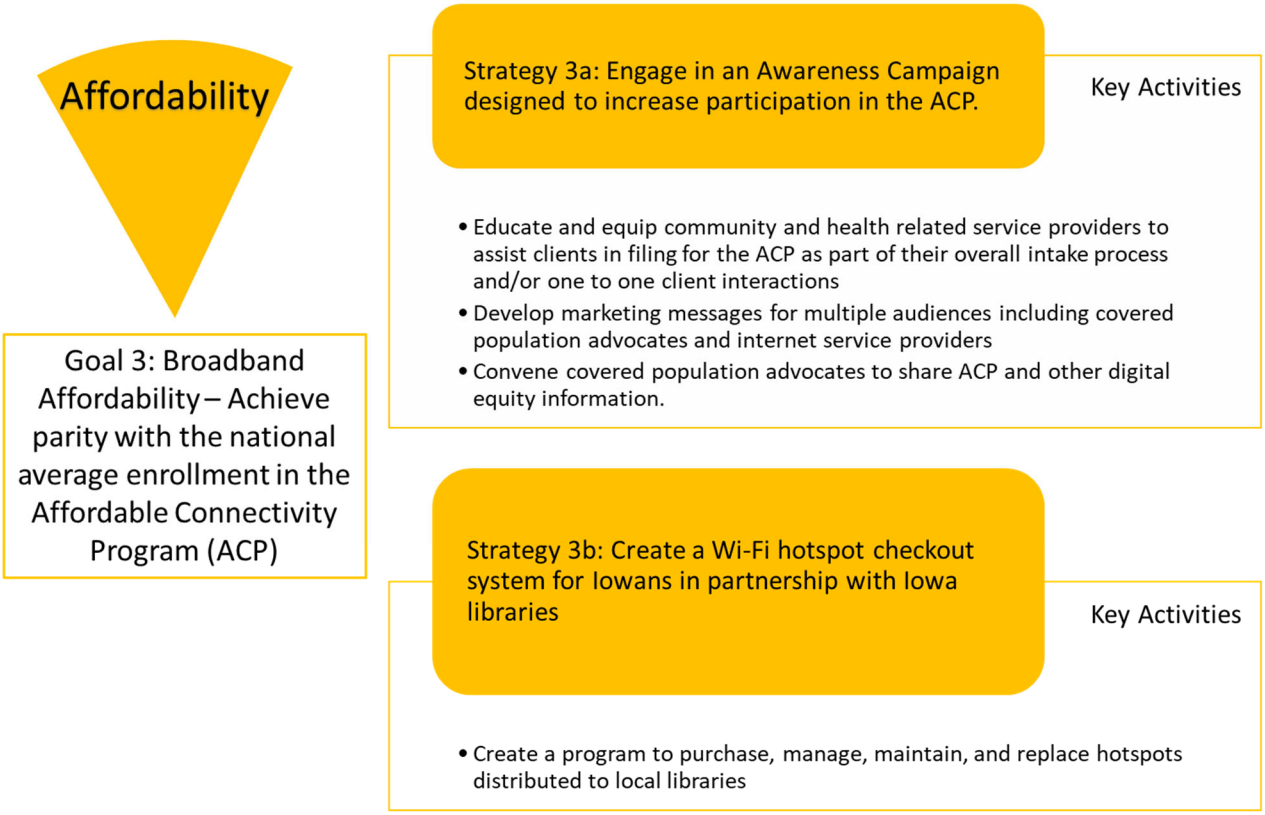
Key Activities:

- Educate and equip community and health related service providers to assist clients in filing for the ACP as part of their overall intake process and/or one-to-one client interactions. For example, helping with an application for ACP while assisting a client with an application for home energy assistance.
- Develop marketing messages for multiple audiences including covered population advocates and internet service providers.
- Continue to convene covered population advocates to share ACP and other digital equity information as well as to discuss barriers and best practices in working toward digital equity across the state.

Strategy 3b: Create a Wi-Fi hotspot check out system for Iowans in covered populations in partnership with Iowa libraries.

Key Activities:

- Create a program to purchase, manage, maintain, and replace hotspots distributed to local libraries.



Measurable Objective:

Reach parity with the national average of enrollment for the Affordable Connectivity Program by the end of 2029. Iowa's enrollment rate sits at approximately 22% of eligible households, ranking in the bottom tier of states. It is reasonable to assume that enrollment rates will continue to increase across the country as the popular program earns further participation. To reach parity with the national average, Figure 55 illustrated how Iowa must first increase to the current national average conditions with an additional 19% of households enrolling (longer orange arrow) plus match the growth of the national average (blue and shorter orange arrow) from now until the end of 2029. That percentage growth is unknown at this time but will be tracked regularly as part of reporting and monitoring.

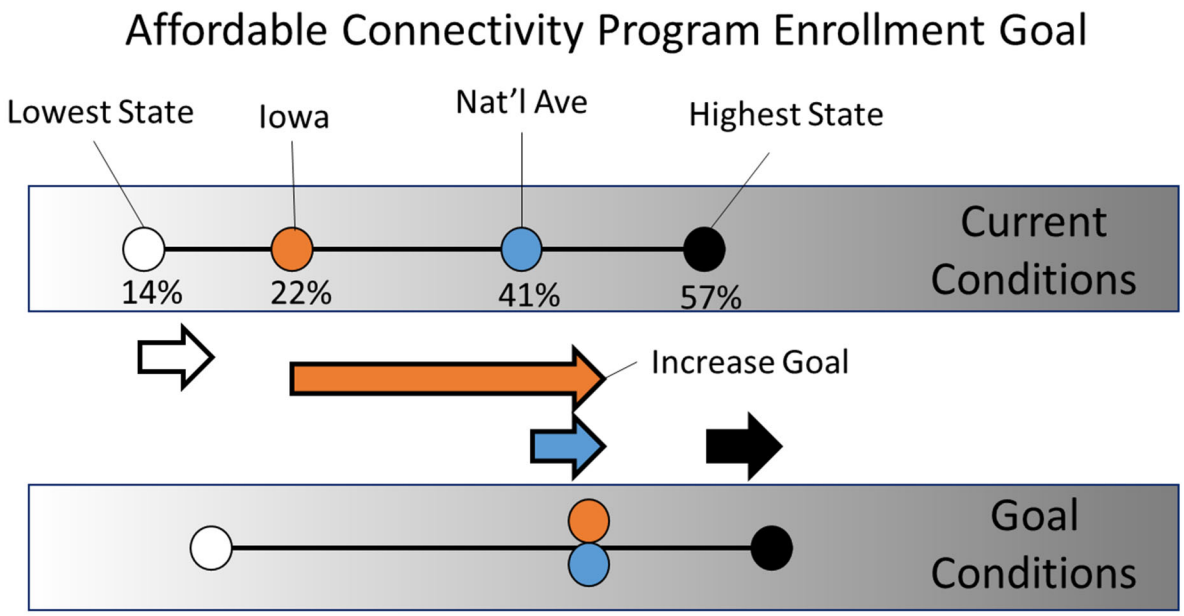


Figure 55 Current and goal conditions for Affordable Connectivity Program enrollment

More than 500 libraries serve Iowans throughout the state. To help close the affordability gap for high speed internet, some Iowans may choose to take advantage of a hotspot checkout program. Iowa will aim to offer hotspot checkouts at 50% of public libraries by the end of 2029. Hotspot locations will be accessible through the State Library of Iowa's "Find my Local Library" tool. Figure 56 shows a statewide view of library locations according to the website.

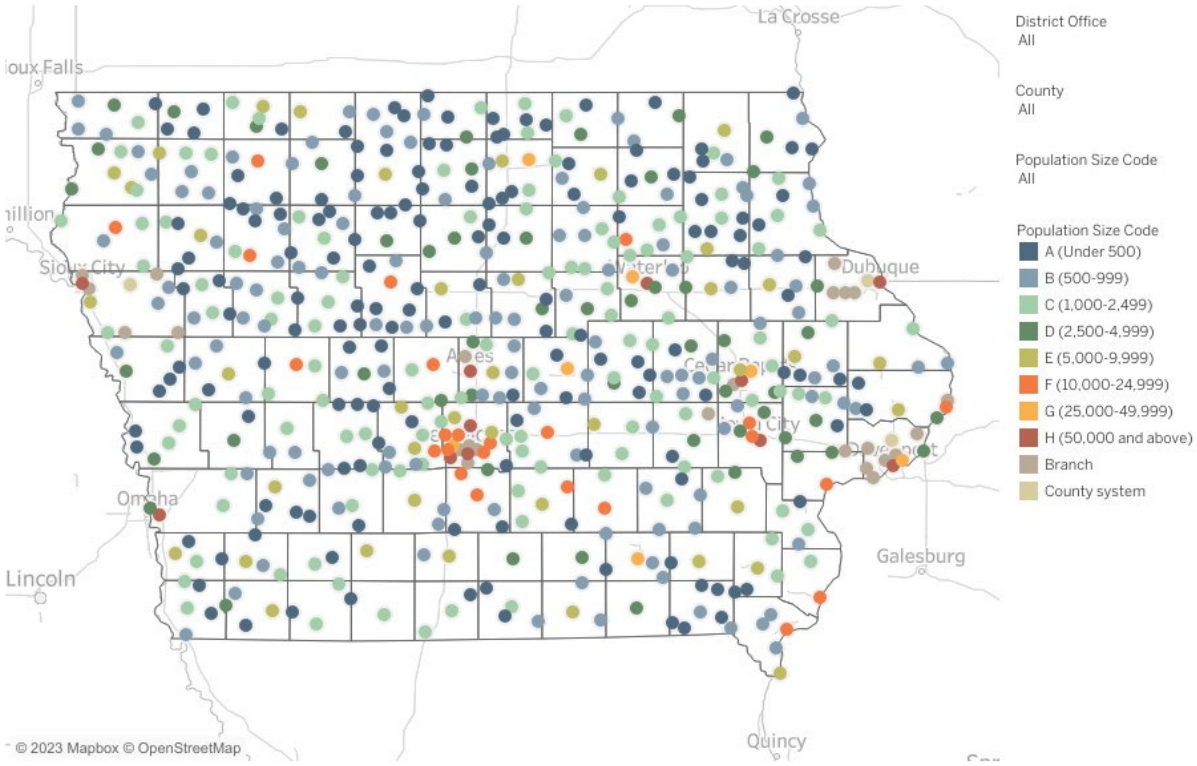
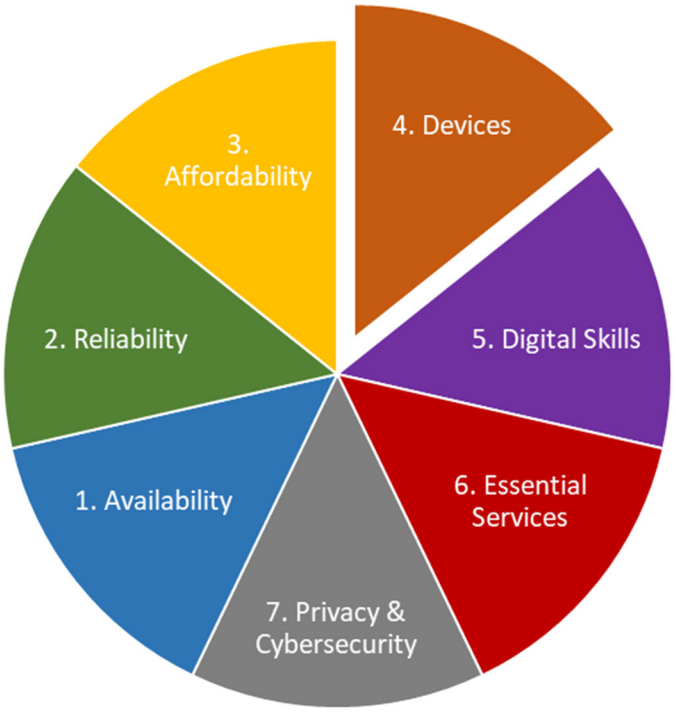


Figure 56 Map of libraries from State Library of Iowa's website

Barrier / Gap Addressed:

As discussed in Section 2.1.2 and Section 3.1.2, affordability remains a key barrier to individuals in covered populations. The best tool available to many Iowans in a covered population is a national subsidy program. Iowa has one of the lowest adoption rates of the Affordable Connectivity Program, lagging behind the national average. Additional efforts to help promote the benefits of a national subsidy program will help spur more people to close the affordability gap identified as a limiting factor in high-speed internet adoption. To help further close the gap, particularly for individuals in covered populations that may not currently be in a position to afford high-speed internet with a subsidy, creation of an accessible Wi-Fi hotspot checkout program allows those individuals the ability to have periodic access.



Goal 4: Availability and Affordability of Devices and Technical Support - Organize a "device ecosystem," which includes supply of material, refurbishing, and distribution.

As technological devices advance and the demands of society require online activities, Iowans will need to own and operate digital devices. For some, the cost of acquiring these devices can be a burden. For others, understanding how best to use the devices and troubleshoot problems can be the biggest barrier. From the results of the statewide survey, facilitated sessions, and public meetings, it is clear that Iowans need more devices in the home to meet the needs of the entire household to achieve full participation in society. By working with institutions and businesses to capture a portion of the devices that cycle through their device replacement system, pass them through a certified refurbishing process, and distribute through trusted distribution points, qualifying Iowans can obtain necessary devices. As part of the planning process, DOM worked with Connected Nation and Digitunity to develop a roadmap to develop a digital device ecosystem. The results of that analysis can be found in Appendix C.

Strategy 4a: Inventory the current device access locations and device distributors serving covered populations in Iowa, including agencies that are providing free phones, tablets, assistive technology lending libraries, hotspot check-outs, etc. to include in the digital equity online resource (Asset Inventory) page.

Key Activities:

- Survey covered population advocates, libraries, school districts, and state agencies providing assistance and education programs regarding their device distribution, including limitations or restrictions placed on devices.
- Create and make available to the public an inventory of device providers participating in the ACP program.
- As part of the ACP Promotions Campaign, market the webpage to advocates and individuals.

Strategy 4b: Develop, launch, and manage a program to provide devices to eligible Iowans.

Key Activities:

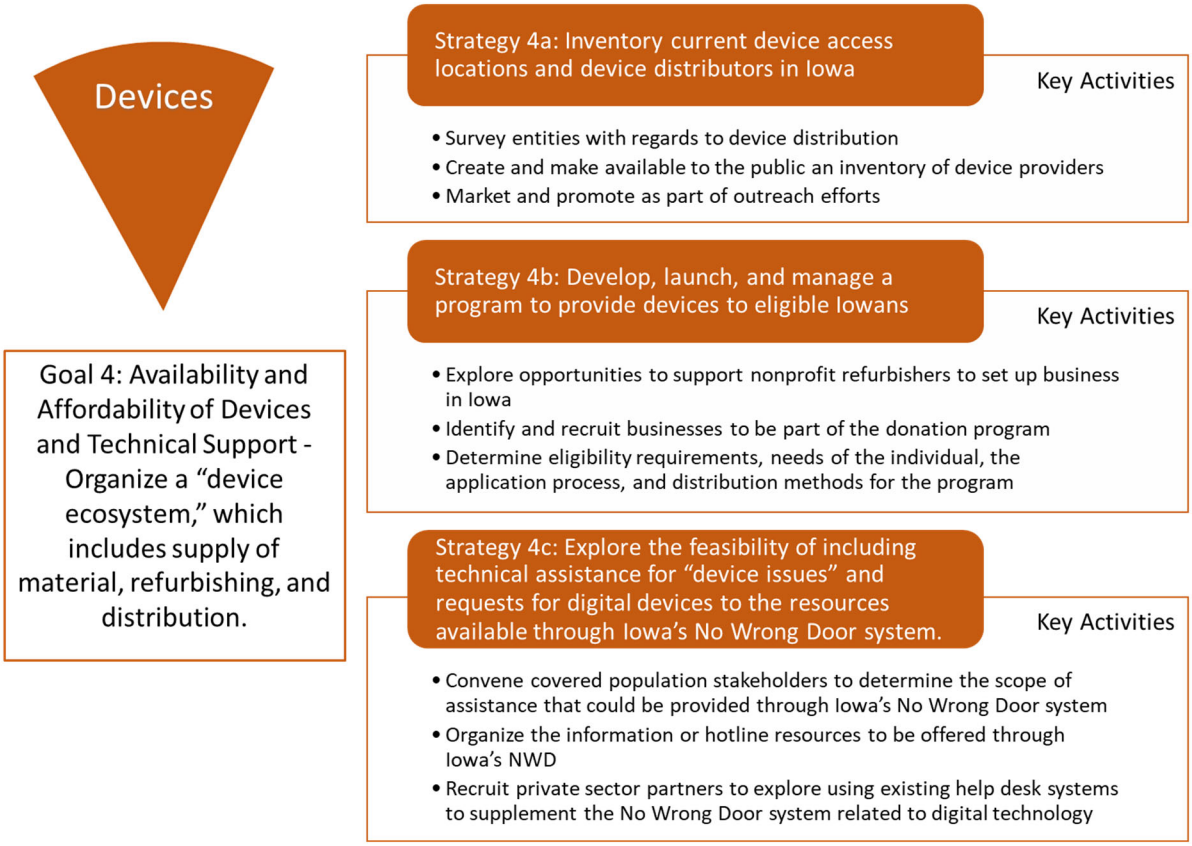
- Explore opportunities to support nonprofit refurbishers to set up business in Iowa.
- Identify and recruit institutions and businesses to be part of the donation program and understand potential barriers

- Determine eligibility requirements, needs of the individual, the application process, and distribution methods for the program.

Strategy 4c: Explore the feasibility of including technical assistance for "device issues" and requests for digital devices to the resources available through Iowa's No Wrong Door (NWD) system including but not limited to 211.

Key Activities:

- Convene covered population stakeholders to determine the scope of assistance that could be provided through Iowa's No Wrong Door system.
- Organize the information or hotline resources to be offered through Iowa's NWD.
- Recruit private sector partners to explore using existing help desk systems to supplement the No Wrong Door system related to digital technology.



Measurable Objectives:

According to the statewide public survey, 88% of Iowans responded that they had enough devices at home to meet the needs of all individuals in the house. The breakout distribution shows a notable need in some of the covered populations from the survey. The goal will be a 50% reduction of respondents that say they don't have enough devices in the home in the statewide survey by the end of 2029 (94% positive response rate).

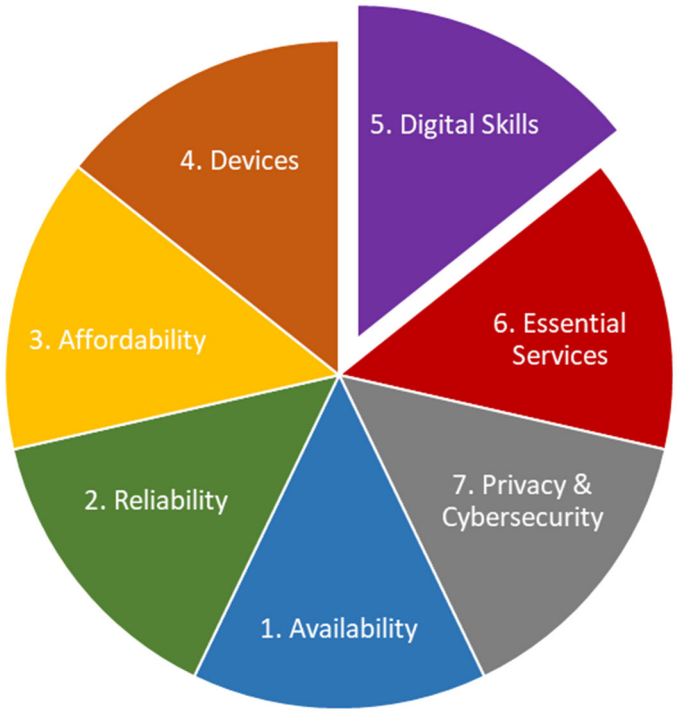
To achieve this lofty goal, Iowa DOM will establish a device ecosystem that aims to deliver devices to qualified individuals. Device programming has a history of success in Iowa, but in

isolated and one-time offers. If we calculate 12% of Iowa's 1.27M households currently lack enough devices to meet the needs of everyone in their family, that's about 150,000 households that need one or more additional devices. Iowa DOM's initiative will look to establish the device ecosystem and distribute 75,000 refurbished or donated devices to Iowans by the end of 2029.

Barrier / Gap Addressed:

The availability and affordability of devices was identified as a major barrier for individuals in covered populations, discussed in Section 2.1.4 and during the public meeting tour as documented in Section 3.1.3. By creating a device ecosystem, more devices can find their way into the hands of those individuals who otherwise would not be able to obtain or afford. Plus, finding pathways to extend the life of devices from local businesses and organizations provides opportunities for entry for member of the community to be involved in digital equity issues. Investment in the device ecosystem helps close the gap in devices and provides the fundamental hardware to further develop digital skills. Additionally, by including information about the device ecosystem and technical assistance for devices as part of the No Wrong Door system, Iowans in covered populations have a path to ensuring their devices operate safely and properly to participate.

Goal 5: Digital Skills - Develop a culturally responsive, robust and sustainable learning model to implement statewide and at the local level.



Digital skills vary widely among Iowans based on a variety of factors. However, the demands put on Iowans in covered populations learning new and improving existing skills increase each year. From using an app to pay for your parking spot to scanning a QR code to pull up a menu at lunch, Iowans in covered populations interact with technology in everyday life in addition to the demands for participation in more lofty endeavors like workforce training and telehealth. Understanding how Iowans in covered populations at various stages in life with different challenges to their success can improve their digital skills and building a program to fit those needs will help lift all Iowans to have the ability to fully participate in society.

Strategy 5a: Customize a statewide digital skills curriculum.

Key Activities:

- Engage digital skills instructors who are currently providing training to develop a comprehensive curriculum that covers levels of abilities from basic device usage to using the internet to protecting yourself from cyber threats that may arise while using various software, platforms, and online services.
- Determine a platform that allows covered populations statewide access to the curriculum.
- Conduct community outreach and training on utilizing the curriculum to service agencies and training partners such as libraries and community centers.

Strategy 5b: Develop a virtual training platform for individuals in covered populations to access digital skills training using the statewide curriculum.

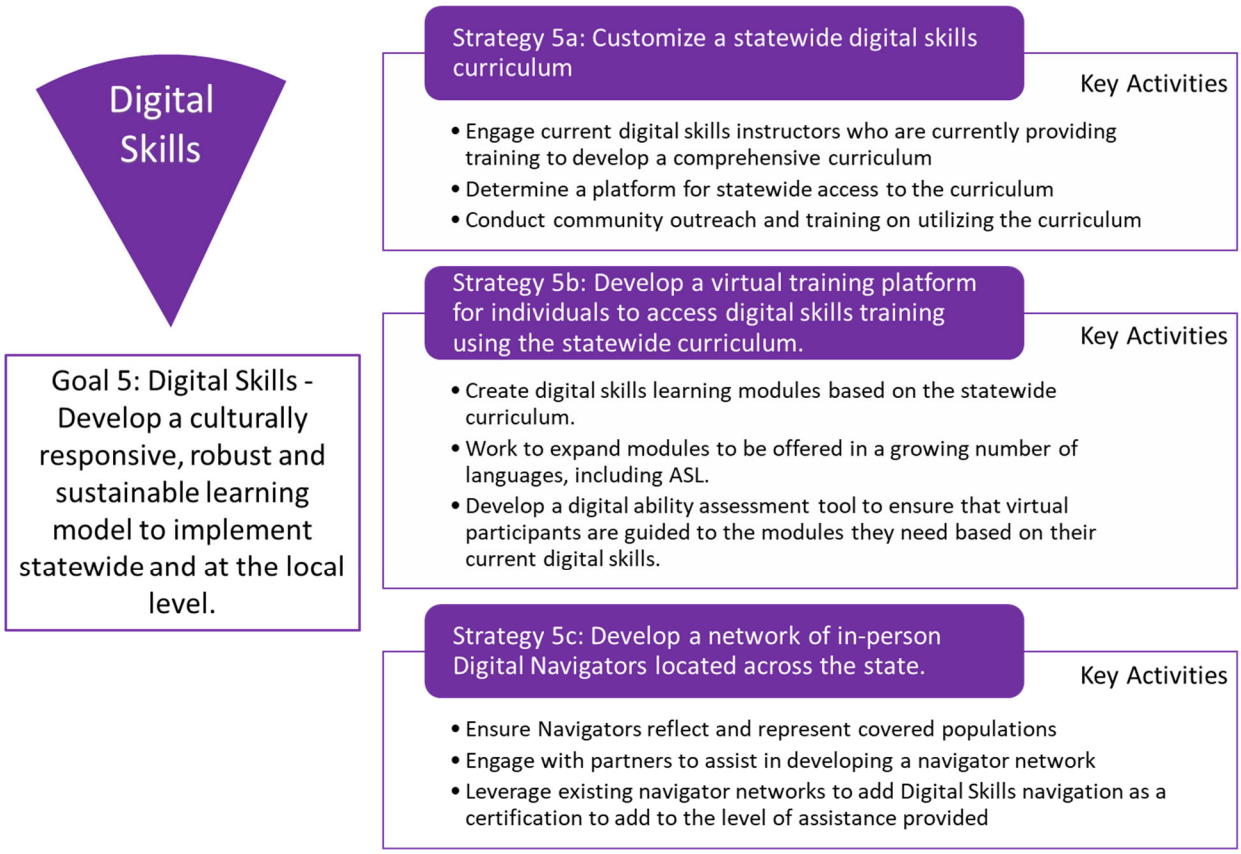
Key Activities:

- Create digital skills learning modules based on the statewide curriculum.
- Work to expand modules to be offered in a growing number of languages, including ASL.
- Develop a digital ability assessment tool to ensure that virtual participants are guided to the modules they need based on their current digital skills.

Strategy 5c: Develop a network of in-person Digital Navigators located across the state.

Key Activities:

- Recruit Digital Navigators that reflect and represent covered populations.
- Engage with partners in developing a navigator network assembled through a collaboration of Iowa's public libraries, academic institutions, covered population advocates, and community-based telecommunication providers.
- Evaluate existing programs (both at home and in person) to explore how current programs can be utilized and leveraged to maximize the total number of Navigators available to assist Iowans. For example, offer a digital equity certification or badge to community health workers to increase the level of assistance they can provide to clients and improve their professional marketability.

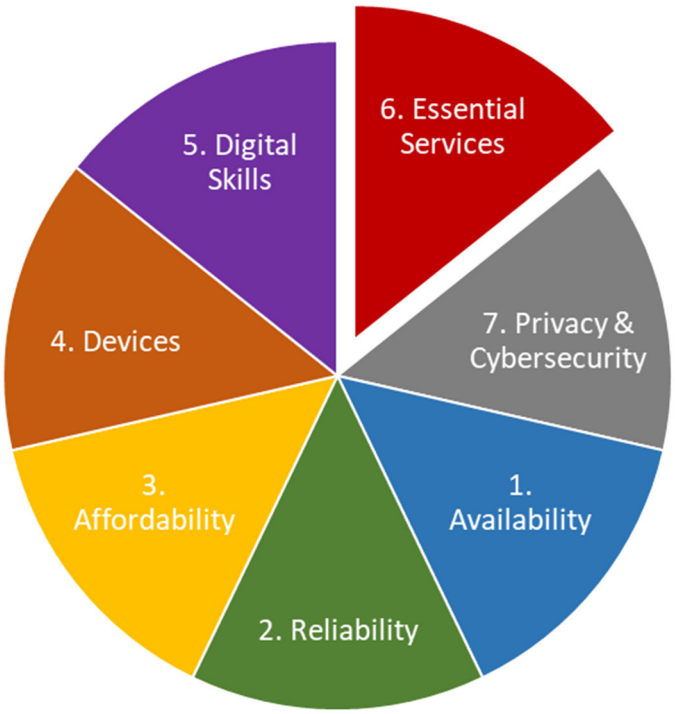


Measurable Objectives:

- On average, show a 10% increase in digital skills confidence in covered populations in the statewide survey (defined as the change in response rate from those who responded with "not familiar with terms or tasks" or "don't know how to do this" to "can do, but not well" or "can do well" plus any measurable increase from "can do, but not well" to "can do well").
- Iowans in covered populations will have access to a system of over 250 digital skills information desks and/or kiosks.
- At least 50,000 Iowans in covered populations will receive some type of digital skills training (online and/or in-person) training through the statewide digital skills curriculum.

Barrier / Gap Addressed:

This goal directly addresses barriers discussed in Section 2.1.5 and Section 3.1.4 with respect to a lack of digital skills in individuals in covered populations. As discussed in those sections, the needs and skill levels vary widely, which is why Strategy 5a speaks to the customizability of a digital skills curriculum to meet the needs of individuals in all covered populations. Additionally, Strategy 5b aims to develop a virtual program so that individuals can access in a classroom setting with an instructor or go at their own pace wherever they have an internet connection and device. Understanding the time constraints – both in terms of volume or time they have to work on digital skills and the time of day available to them – reinforces the importance of a virtual presence. Strategy 5c seeks to close the gap in digital skills by creating a digital navigator network to provide a more personal level of help. This can benefit individuals in covered populations with direct help in learning new digital skills, help taking an assessment to determine the digital skills modules to take, to ensuring the digital skills learned are translatable to the activities those individuals would like to perform in everyday life.



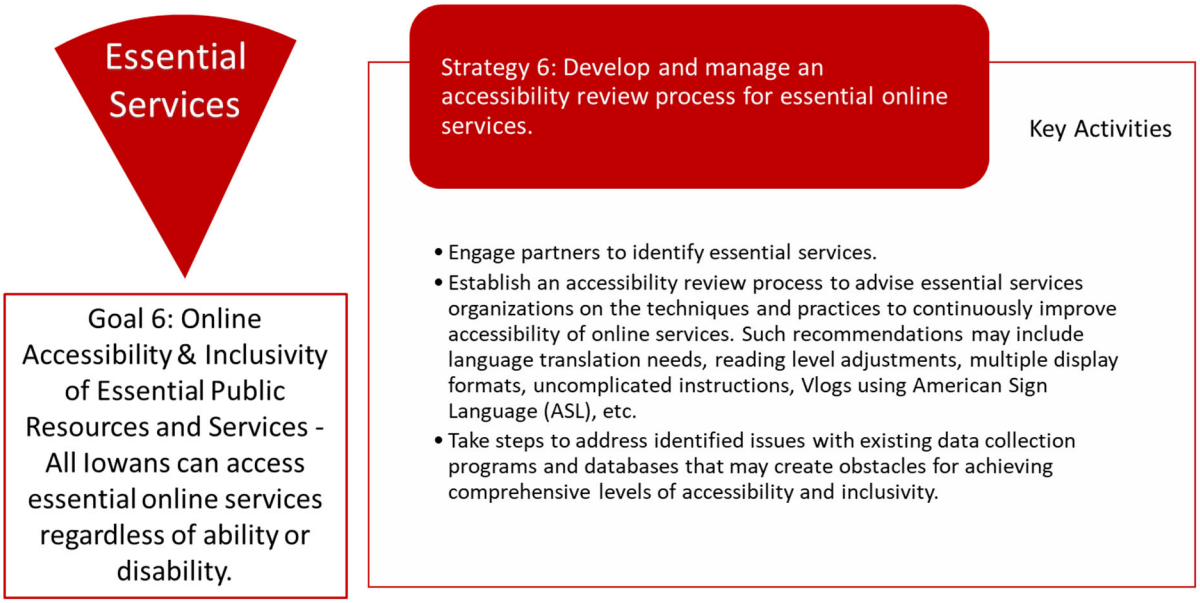
Goal 6: Online Accessibility & Inclusivity of Essential Public Resources and Services - All Iowans in covered populations can access essential online services regardless of ability or disability.

As more of our essential resources move to an online presence, it is imperative that individuals needing to access those services can do so regardless of ability. By identifying and outlining the needs of Iowans in covered populations to access these essential services that the state provides, the State of Iowa can ensure more people get the help they need by accessing these programs. The intention is to be responsive of the Digital Equity Act identifying *essential* public services, evaluating the depth of accessibility needs of those services, and working with partners to close any gaps that may exist.

Strategy 6: Develop and manage an accessibility review process that includes guidelines for human centered design to ensure that state agency websites and digital documents for essential resources are accessible.

Key Activities:

- Engage partners to identify essential services for covered populations.
- Establish an accessibility review process to advise essential services organizations on the techniques and practices to continuously improve accessibility of online services. Such recommendations may include language translation needs, reading level adjustments, multiple display formats, uncomplicated instructions, Vlogs using American Sign Language (ASL), etc.
- Take steps to address identified issues with existing data collection programs and databases that may create obstacles for achieving comprehensive levels of accessibility and inclusivity.



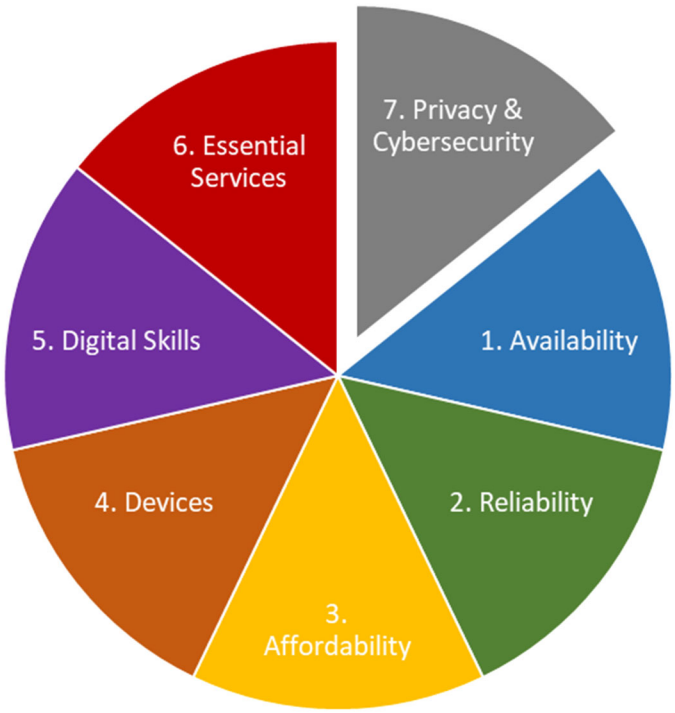
Measurable Objectives:

100% of essential online services for state government participate in the accessibility review process.

Barrier / Gap Addressed:

As more agencies and programs provide some or all of their essential services online, it becomes increasingly important that individuals in covered populations have the ability to access those services. By investing in a process that ensures new sites meet these considerations before changing how their service is provided, we can reduce the risk that individuals in covered populations lose services. Additionally, ensuring accessibility in these services moving forward has the potential to capture an increased rate of participation by removing these commonly cited barriers.

Goal 7: Online Privacy and Cybersecurity - Educate Iowans in covered populations about privacy and cybersecurity threats and equip them with the necessary tools and information to protect themselves.



Understanding the risks associated with participating in online activities and how to avoid being taken advantage of can help Iowans in covered populations feel more comfortable participating in those activities. Every time an Iowan in a covered population connects to the internet, whether at home, school, work, or in public, they are exposed to cyber criminals looking to commit identity theft, fraud, and other crimes. Others may be scared away from participating at all because they do not fully understand the risks or how to mitigate them. All Iowans in covered populations can benefit with basic online privacy and cybersecurity training.

Strategy 7a: Identify and support a network of cybersecurity trainers and resource providers throughout the state.

Key Activities:

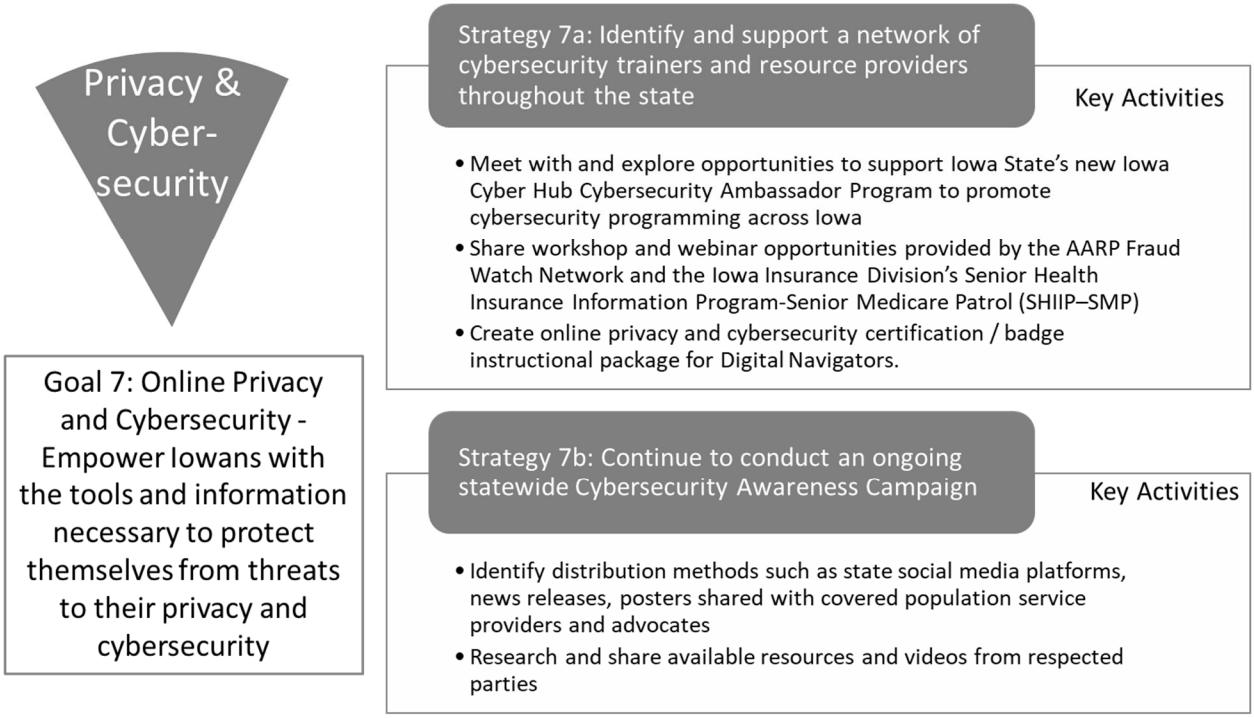
- Meet with and explore opportunities to support Iowa State's efforts across the state to promote cybersecurity and digital skills programming for Iowans in covered populations across Iowa.
- Ensure that workshop and webinar opportunities provided by the AARP Fraud Watch Network and the Iowa Insurance Division's Senior Health Insurance Information Program-Senior Medicare Patrol (SHIIP–SMP) are shared with covered population stakeholders, and are included in the digital equity online resource (Asset Inventory) page.
- Create online privacy and cybersecurity certification / badge instructional package for Digital Navigators.

Strategy 7b: Continue to conduct an ongoing statewide Cybersecurity Awareness Campaign.

Key Activities:

- Identify distribution methods such as state social media platforms, news releases, posters shared with covered population service providers and advocates, etc.

- Research and share available resources and videos from respected parties such as Cybersecurity & Infrastructure Security Agency (CISA) and the National Cybersecurity Alliance.



Measurable Objectives:

On average, show a 10% increase in cybersecurity related digital skills confidence for Iowans in covered populations in the statewide survey (defined as the change in response rate from those who responded with "not familiar with terms or tasks" or "don't know how to do this" to "can do, but not well" or "can do well" plus any measurable increase from "can do, but not well" to "can do well").

To help Iowans in covered populations improve their digital skills around online privacy and cybersecurity, Iowa DOM will serve as an active partner in Cybersecurity Awareness Month each October. Participation will include promoting cybersecurity videos, webinars, tips and more through multiple media channels. Additionally, Iowa DOM will support trainings, webinars, and workshops for Iowans in covered populations to learn more. By the end of 2029, at least 25,000 Iowans in covered populations will have completed some form of cybersecurity training to improve the results in the statewide survey.

Barrier / Gap Addressed:

During the public meeting tour, online privacy and cybersecurity was a topic often discussed as an important barrier to participation for individuals in covered populations as discussed in Section 3.1.4. This concept was so important to meeting participants that a goal separate from digital skills was developed in response to the strength of support of addressing this barrier. The results of the statewide survey reinforce the importance of strengthening these elements, as described in Section 2.1.5. By focusing in specifically on creating cybersecurity trainers and resource providers, individuals in covered populations can get tailored instruction on how to

protect their personal information when participating in online activities. Further, the state's presence in participating in Cybersecurity Awareness Campaign keeps the issue top of mind for individuals in covered populations from a trusted source and helps update those individuals with new and evolving threats.

Goal Summary: Figure 57 summarizes the measurable objectives associated goals described above.

Goal #	Measurable Objective (Covered Population #)
Goal 1 Broadband Availability	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey amongst Iowans in covered populations from 30% to 20%
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs to Iowans in covered populations by end of 2029
Goal 4 Digital Devices	50% reduction in covered population households that report not having enough digital devices at home (12% → 6%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans in covered populations
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey for Iowans in covered populations
Goal 5 Digital Skills	Establish 250 digital skills information desks to serve covered populations
Goal 5 Digital Skills	20,000 Iowans in covered populations complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government that serve covered populations participate in review process
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey among Iowans in covered populations (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)
Goal 7 Privacy & Cybersecurity	25,000 Iowans in covered populations complete cybersecurity training

Figure 57 Goal and Measurable Objectives Summary

Figure 58 below shows the seven goals and associated strategies aimed at achieving the state's vision for Digital Equity.

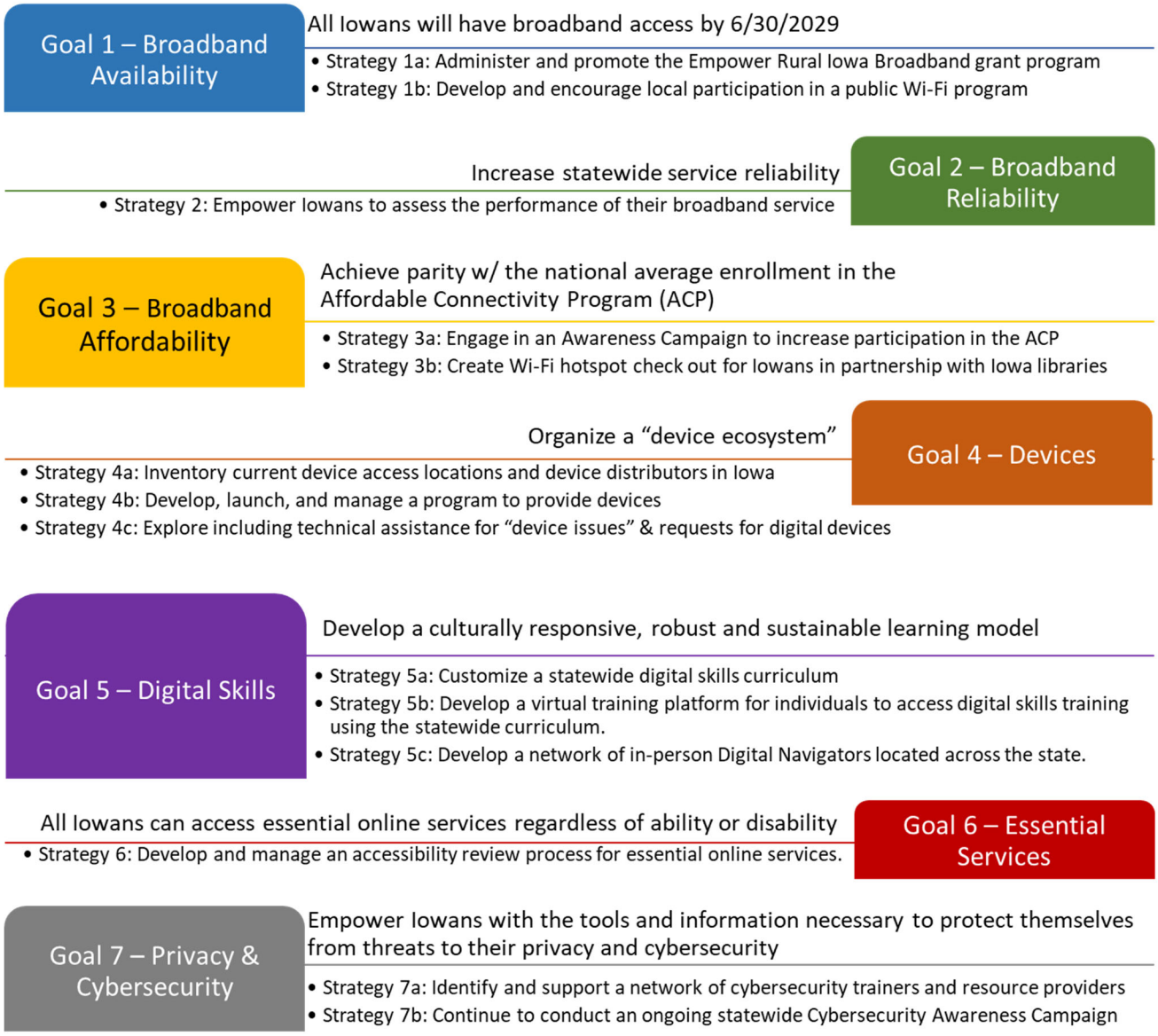


Figure 58 Summary of Goals and Strategies for Digital Equity Plan

4.3.2 Covered Populations

The state-wide goals and objectives for all covered populations set above will only be achieved if we can understand the barriers they face. The covered populations defined in the Digital Equity Act provide a useful framework to better understand some of the barriers Iowans face that may be unique to that population. Some covered populations have notable overlap with other populations, which can be found in common barriers, but each population has specific challenges that must be better understood to serve that population.

To better understand the barriers the covered populations in Iowa face with respect to digital equity, DOM engaged a third-party facilitator to conduct individual three-hour planning sessions with each of the eight covered populations. Members of the Core Planning Team, described above, served as “Team Captains” for each session, inviting individuals who represent or work with the covered population. Across all eight sessions, about 100 participants attended to provide their experiences and expertise in understanding the barriers faced by each covered population. They shared best practices for working with their respective population as well as their own ideas for addressing barriers to digital equity specific to each covered population.

While the covered population sessions provided the space to explore each of the individual populations, common barriers to digital equity emerged for multiple covered populations. That commonality provides the opportunity for common solutions. The following provides a summation of the individual sessions while attempting to define unique barriers and solutions for each population. Finally, specific covered population measurable objectives are defined in the event that population differs notably from the statewide average of all covered populations.

4.3.2.1 Covered Population – Rural Residents

Nearly half of Iowa's residents live in a rural area. Long term trends show that while the population of Iowa as a whole remains relatively constant, more and more Iowans live in urban centers as many rural communities are losing population. Fewer people in those communities often means that the same community members may play multiple roles, which can lead to human capacity issues.

Key Issues and Insights from the Session

On October 3, 2023, DOM hosted a planning session focused on rural residents. Participants in the rural residents population planning session noted that some rural communities boast a diverse population with an influx of immigrant populations. Additionally, because "rural" encompasses an area and not focused on other demographics like the other covered populations, the rural community encompasses a mix of members from all of the covered populations. To that point, participants described the needs of rural residents to acquire a wide range of digital skills and needing many methods of communication in order to reach members of the population.

Building trust among community members remains critical, ensuring that key players sit at the table to produce real impact. Participants in the session emphasized that many rural communities want amenities and conveniences, but may not want to turn into urban centers. As one participant put it, "population is not equivalent to quality of life." Therefore, it remains key to understanding rural Iowa in order to bring solutions to rural Iowans.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: USDA, State Library of Iowa, Iowa Area Development Group, Iowa Economic Development Authority, Iowa Rural Development Council, City of Emmetsburg Economic Development, Mid Iowa Planning Alliance, Premiere Communications (Telecom), Bolton& Menk Inc, South Central Iowa Workforce Development Board, Iowa Farm Bureau Federation, Allamakee Clayton Electric Coop, Iowa League of Cities, and Greater Omaha Chamber.

Individuals in rural communities may not identify with the term "digital equity" and instead think it refers to "some other group." That initial challenge in nomenclature will be an important messaging consideration when communicating programming in rural Iowa. However, the issues are real and present for digital equity facets in rural Iowa. The lack of access to high speed internet to work from home can freeze rural residents out of opportunities for remote work or taking advantage of "hybrid" work environments. Even finding local places that provide free Wi-Fi access can be difficult to find. The distance some rural Iowans must travel to access technical support, purchasing digital devices, or seek digital skills training presents a barrier for many rural residents. Plus, it's not just the people in rural Iowa that benefit from broadband as precision agriculture applications improve yields while protecting natural resources and remote monitoring aids animal husbandry.

As communities do become more invested in broadband, access to public resources and support through grants creates competition between rural communities rather than more impactful cooperation. Those communities limited by human capital can fall further behind as they may not have the resources to spend time writing those grants. In addition, community

resources are limited for any "match" requirements or when grants are distributed on a reimbursement basis. Many rural communities and counties still don't have forms accessible online, which further demonstrates lack of technical capacity in local communities for providing digital services.

In terms of bringing internet access to rural areas, rural cooperatives and telecoms employ many creative and entrepreneurial initiatives to expand internet service. Iowa's community-based providers account for a robust ten percent of all community-based providers in the country. Those 120+ operators across the state serve residents with high-speed internet, many with modest staffing, which may limit their ability to add more of the digital support services that their customers seek.

While high speed internet continues to grow in importance, it is still not viewed as an essential utility like electricity or gas. That lack of designation may be the cause of some communities and counties creating barriers, potentially as a vestige of earlier rules, from internet service providers closing access gaps in rural communities. While Iowa boasts a notably high number of small telecommunications companies, those organizations may be faced with human and financial capacity issues that can limit IT services, digital skills training programs, and access expansion. Reaching some parts of rural Iowa residences with the "last mile" from the standpoint of a small telecommunications company may not be cost effective, and therefore creates challenges in closing the access divide in rural Iowa.

Participants noted the importance of local libraries and Iowa State University Extension offices as trusted places for rural residents to go for digital device programs and digital skills training. Additionally, Iowa's network of local telecommunications companies and local electric coops provide essential services to rural residents and could serve as trusted sources of information relative to digital equity issues. Community foundations and Small Business Development Centers (SBDCs) were mentioned as important entities for establishing partnerships to close funding gaps.

In many areas, rural Iowans lack a general knowledge and awareness of digital resources and where to access the programming that does exist. That lack of information includes cybersecurity issues among people and businesses, which can lead to distrust of adopting new technologies.

Available Opportunities for Rural Populations. Participants mentioned programs or efforts working on digital access and availability in rural areas:

- *Center for Rural Revitalization* – Connecting Rural Iowa Task Force. Offers technical assistance and funding for projects in rural Iowa.
- *Iowa Rural Development Council* is a statewide council that supports broadband in rural areas and maintains a webpage with rural broadband resources and best practices.
- *Community Broadband Action Network (CBAN)* is a nationwide member organization of communities, providers, policy makers, and advocates. CBAN provides an educational network for those seeking to create or improve locally-operated broadband access. CBAN is also part of *NDIA's National Digital Navigator Corps* pilot program. The digital navigator program is currently operating in three rural counties in Iowa. Digital navigators are trusted people who assist community members with internet adoption and the use of devices. Iowa's digital navigator provides no-cost, one-on-one assistance with affordable

internet access, device acquisition, technical skills, and application support, including for the Affordable Connectivity Program (ACP) broadband service subsidy.

- *Lookout Village* in Neola, IA is an example of a tiered membership service model for supporting aging individuals and persons with disabilities so they can remain in their homes safely and affordably. The nonprofit program encourages social connections, and promotes healthy, vibrant and meaningful lives. Technology assistance is one of the services this volunteer staffed program provides to its members.

Proposed Strategies for Rural Communities to Help Meet Statewide Goals

- Goal 3 Strategy A – To augment the work of the Affordable Connectivity Program, work with rural libraries to apply for the *FCC's E-Rate* program. This can reduce connectivity costs to be invested into other aspects of digital equity and/or to use the savings to purchase faster speeds.
- Goal 4 Strategy C – Help promote a digital device helpline through Iowa No Wrong Door System, particularly important to rural communities that not have an in-person resource within a reasonable distance.
- Goal 5 Strategy B – Design and install digital learning kiosks in every rural library to provide opportunities for rural residents to access physical structures that may be necessary to take advantage of virtual training platforms to build digital skills.
- Goal 5 Strategy C – Support rural Digital Navigator network building and "train the trainer" programs to teach digital skills curriculum either as full-time staff dedicated to digital navigation or as an aspect of work for existing professionals (librarians, telecom staff).
- Goal 5 Strategy C – To help achieve the above goal, develop curriculum for digital navigators including micro-credentials to take advantage of experienced navigators already delivering other services to people.
- Goal 7 Strategy A – Add or share cybersecurity topics as a Small Business Development Center (SBDC) resource to promote the latest privacy and cybersecurity practices.
- General Support for All Goals – To help offset the capacity issues in rural Iowa, find ways to provide support to regions to assess needs, develop plans, and apply for funds related to digital equity.

Measurable Objectives for Rural Residents:

In some instances, a covered population will have a measurable objective specific to that population that differs from the overall covered population number. In many cases, this is made possible due to having enough demographic data from the statewide survey.

Goal #	Measurable Objective (Covered Populations #)	Rural Residents Population Goal
Goal 1 Broadband Availability	100% Access by end of 2029	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029	200+ public Wi-Fi &/or charging station points in rural Iowa by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey from 30% to 20%	Reduce dissatisfaction rate in statewide survey from 33% to 22%

Goal #	Measurable Objective (Covered Populations #)	Rural Residents Population Goal
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs by end of 2029	50% of rural public libraries will offer hotspot checkout programs by end of 2029
Goal 4 Digital Devices	50% reduction in households that report not having enough digital devices at home (12% → 6%)	50% reduction in households that report not having enough digital devices at home (13% → 6.5%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans	Distribute 37,500 refurbished or donated devices to rural Iowans
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey	10% increase in digital skills confidence in statewide survey
Goal 5 Digital Skills	Establish 250 digital skills information desks	Establish 125 digital skills information desks in rural Iowa
Goal 5 Digital Skills	20,000 Iowans complete digital skills training	10,000 rural Iowans complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government complete audit	100% of essential online services for rural Iowans (state gov't websites) complete audit
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 75% confidence in device protection, 91% create strong passwords, 72% avoid phishing)
Goal 7 Privacy & Cybersecurity	25,000 Iowans complete cybersecurity training	12,500 Iowans complete cybersecurity training

4.3.2.2 Covered Population – Aging Individuals

People aged 65 and older make up about 20 percent of Iowa's population, half of whom are over the age of 75. The range of digital skills among individuals over the age of 65 is wide and varied. The aging populations includes individuals in all of the other covered populations, adding an additional dimension to addressing the needs of this group.

Key Issues and Insights from the Session

DOM hosted a facilitated planning session on September 26 with a group of professionals to discuss the specific digital equity challenges faced by aging individuals in Iowa. Participants who attended the session work with or represent people who are over the age of 65. Participants in the session made clear that the needs and expectations of each generation are quite different, and that their needs change based on their individual circumstances such as living independently, in assisted living facilities, or working with memory care or skilled care professionals.

For those individuals who cannot or choose to not utilize technology, caregivers were noted as the individuals needing assistance in the facets of digital equity to best serve those individuals. Many aging individuals that the participants represented have difficulty physically leaving home or may need disability services in order to do so. However, they were quick to point out that this did not mean that the individuals were incapable of utilizing technology with several anecdotal examples of aging individuals thriving with various digital devices to book appointments for telehealth, connect with loved ones, and even operate small businesses.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: State Library of Iowa, AARP, University of Iowa, Iowa Statewide Independent Living Council, Iowa Workforce Development, Iowa Department of Human Services, Easterseals Iowa, Iowa Health and Human Services Division of Aging and Disability Services, Central Iowa Center for Independent Living, Happy Home Consulting, Iowa Association of Area Agencies on Aging.

Technology and the rate of change in digital applications continues to accelerate and dominate the lives of everyone. For some aging Iowans, this reliance on technology to complete tasks that previously required a phone call or an in-person visit can be particularly challenging. Importantly, the aging population adds new Iowans every day as people age. Individuals in the aging population now may have fluently operated with the technology before but now struggle to keep up with technological changes. While we can't predict the technologies of the future, it is safe to say that the rate of change in digital applications will catch up to many Iowans eventually, and the ever-evolving aging population will always need some level of assistance to adapt to the shifting landscape.

Change can prove difficult for many Iowans after decades of accomplishing a task a certain way. When that task requires using an unfamiliar device or a series of steps that need to be followed in a specific way, it can lead to frustration. For example, a system update may change the look or appearance of the interface or require a new series of steps from a previous version, which can cause some individuals to resist upgrading to new technologies.

Many aging individuals in Iowa operate on a fixed or limited income, which can make the cost for internet services, devices, and accessibility tools too expensive to fit in the budget. Some aging individuals have reported issues with autorenewals for subscription services that they may no longer be using due to not understanding how to unsubscribe or not initially realizing the recurring service charges. That can lead to legacy issues in charges, further frustrating individuals.

Aging individuals may have devices and applications provided or purchased for them, but those individuals may need help setting up the device and using the application for the intended purpose. Participants noted that aging individuals often fear “messing up” the device and won’t explore to figure out what can be done, instead waiting until they can be shown the right way of operating before trying it out on their own. Technology is not always designed to accommodate physical barriers, such as poor hearing, eyesight, and changes in motor skills. Those devices that do have tools built-in to accommodate potential physical challenges, like bigger font sizing and color contrast, may not have an obvious way to activate those features.

Participants noted that they did not know of a good assessment tool available to determine a person’s level of digital skills, making it difficult to know where to start. Even if a tool were available for that assessment, individuals and caregivers may not know where to go for digital devices, training, or support. Additionally, transportation to a physical space can be a barrier for many older Iowans, adding an additional challenge to access support. Aging individuals and their caregivers may need support with how to operate a fully functioning digital device as well as how to fix something if the digital device malfunctions. That is usually best accomplished if the individual has the opportunity to ask questions and problem solve with an actual person guiding them through the experience.

Protecting personal information and understanding cybersecurity threats can be a difficult barrier for aging individuals, particularly for those Iowans experiencing memory or cognitive issues. Aging individuals can be especially susceptible to scams or phishing attempts due to lack of knowledge as to how to protect devices. Additionally, frustration with remembering usernames, passwords, and the process to perform certain tasks can add to the frustration of accomplishing digital tasks. This can feel particularly frustrating when updates to the device or software change a previously learned process.

This confluence of needs to serve aging individuals in Iowa makes places like public libraries, churches, community colleges, and local schools the ideal locations for disseminating devices and learning digital skills. Participants noted a strong connection to the idea of multi-generational learning, pairing high school and college students with teaching aging individuals digital skills.

Available Opportunities for Older Individuals and Caregivers - The participants in the older Iowans group mentioned several programs or initiatives that support older individuals and their caregivers in the digital space:

Easterseals Iowa offers an Assistive Technology Program that serves people with disabilities, including older Iowans across the state.

Tech4Impact is an Iowa assistive technology consulting firm that supports individuals with disabilities.

Older Adults Technology Services (OATS) developed and operates AARP’s Senior Planet program, which offers online and in-person classes and articles on technology.

Cybersecurity threat webinars, training and resources are available through AARP Fraud Watch Network

The Iowa Insurance Division's Senior Health Insurance Information Program-Senior Medicare Patrol (SHIIP–SMP) volunteers give presentations to groups, exhibit at events, and use other outreach opportunities to help Iowans prevent and detect fraud.

While not currently offering services in Iowa, the following programs were also mentioned as a future opportunity for Iowa:

GoGo Grandparent is a call-in service that arranges rides, groceries, meals and other services for older people and people with disabilities.

There are several nonprofit organizations in the country that recycle and refurbish computers for individuals, families, and nonprofits for qualifying individuals. While none of those organizations currently work in Iowa, the model would help Iowa build a digital ecosystem.

Proposed Strategies

- Goal 4 Strategy A & B, Device Ecosystem. Develop an inventory of the county, region and/or state's digital ecosystem where aging individuals can access devices and device support. Help fund device refurbishing and distribution program aimed at helping aging individuals acquiring and using digital devices.
- Goal 4 Strategy C, Technical Assistance. Create a tech support hotline or hub to take calls from people with tech issues. Create standards for people who take calls, potentially providing training or certification, and work with companies with tech-savvy individuals to volunteer hours. Create inventory of where people can go for in-person help as a reference for callers to use. Investigate the potential of a program structure similar to the Iowa Cafe program through Iowa's Area Agencies on Aging, but for tech support rather than meals.
- Goal 5 Strategy A Digital Skills Curriculum. Develop tech training that can be delivered online or in-person. Investigate the Easterseals training modules as a potential starting point. Create a one-stop centralized repository of digital resources, programs and educational information, and market its existence to older Iowans through libraries, city halls, post offices, senior centers, traditional media, etc. as well as to people who serve older Iowans.
- Goal 5 Strategy B Digital Skills Training Platform. As part of administering a virtual training platform, develop an individualized needs assessment to understand what the needs are of each individual for training and education. This can focus the individual on training needed and avoid adding unwanted or unneeded training to their curriculum load.
- Goal 5 Strategy C Digital Navigators. Fund a network of digital navigators to provide training and digital resource connections across the state to meet the needs of aging individuals. Create local networks of intergenerational education providers or quick tech problem solvers like "Tech Buddies" to help augment the digital navigator network.
- Goal 6, Essential Services. Provide training and technical assistance to state agencies in making their websites, webpages and forms truly accessible and more simplified to aging individuals. Strive for the best level of compliance for the Web Content Accessibility Guidelines (WCAG) defined POUR principles of accessibility (Perceivable, Operable, Understandable, and Robust).

- General. Convene providers and stakeholders regularly to share best practices and information about programs (like ACP). Create a speakers bureau for presenting on digital equity programs and best practices.

Measurable Objectives for Aging Individuals:

In some instances, a covered population will have a measurable objective specific to that population that differs from the overall covered population number. In many cases, this is made possible due to having enough demographic data from the statewide survey.

Goal #	Measurable Objective (Covered Populations #)	Aging Individuals Population Goal
Goal 1 Broadband Availability	100% Access by end of 2029	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029	500 Wi-Fi &/or charging station points that serve aging Iowans by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey from 30% to 20%	Reduce dissatisfaction rate in statewide survey from 34% to 23% in Age 65-74 and 40% to 27% in Age 75+
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs by end of 2029	50% of public libraries will offer hotspot checkout programs by end of 2029
Goal 4 Digital Devices	50% reduction in households that report not having enough digital devices at home (12% → 6%)	50% reduction in households that report not having enough digital devices at home (5% → 3% and 9% → 5%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans	Distribute 18,000 refurbished or donated devices to Iowans
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey	10% increase in digital skills confidence in statewide survey
Goal 5 Digital Skills	Establish 250 digital skills information desks	Establish 250 digital skills information desks that can serve aging Iowans
Goal 5 Digital Skills	20,000 Iowans complete digital skills training	4,800 aging Iowans complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government complete audit	100% of essential online services for aging individuals (state gov't websites) complete audit

Goal #	Measurable Objective (Covered Populations #)	Aging Individuals Population Goal
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 75% & 59% confidence in device protection, 87% & 71% create strong passwords, 65% & 59% avoid phishing in Age 65-74 and Age 75+ respectively)
Goal 7 Privacy & Cybersecurity	25,000 Iowans complete cybersecurity training	6,000 aging Iowans complete cybersecurity training

4.3.2.3 Covered Population – Covered Households

Nearly 20 percent of Iowa's population live in covered households, defined as all individuals living in a household that make less than 150% of the federal poverty line. Individuals in this population live in urban and rural spaces and may identify with other covered populations as well.

Key Issues and Insights from the Session

DOM held a facilitated session on October 4, 2023 with professionals who work with individuals in covered households. Participants in the session described the individuals they represent and work with as resourceful, yet overwhelmed. An individual may try to take advantage of a support program, but lose momentum due to multiple layers or steps in the process to access resources. That can sometimes lead to frustration and ultimately abandonment of the process. Additionally, many support programs lack consistent or enough funding, making it hard to get buy-in and trust from people.

Participants also noted that people in covered households can experience fluctuating, unstable levels of income, which can extend to their use of technology. For example, many individuals may have phones or internet services only when they can afford them, leading to potential issues with providers if they fall behind in payments. This can lead to what one participant described as the higher "cost of being poor." As people fall behind in payments, they end up paying late fees and/or higher interest on devices or plans. They may end up paying the same activation fee multiple times if they have to break service. These costs amplify when trying to afford high speed internet service and the associated devices and tech support. The assistance of the Affordable Connectivity Program may not be enough to bridge the gap for many Iowans.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: State Library of Iowa, Iowa Department of Education, Community Broadband Action Network, Iowa Department of Health and Human Services, Iowa Legal Aid, Iowa Workforce Development, IMPACT Community Action Partnership, Primary Health Care, Polk County Family Enrichment Center, United Way of Central Iowa, Hawkeye Area Community Action Program, Common Good Iowa, Evelyn K. Davis Center for Working Families, University of Iowa School of Social Work, Iowa Community Action Association.

Stakeholders stressed the importance of digital equity as playing a big role in changing lives. They felt digital access and skills should be seen as a basic need. To fully participate in society, obtain housing, and apply for jobs, digital skills and access resonated as a necessity for individuals living in covered households. Access to high speed internet is critical for everything from conducting a job search to completing classwork, but may financially compete with more basic needs like food, housing, and transportation.

Many individuals in covered households have only cellphones and lack devices that would help with more advanced tasks. While device giveaway programs are popular and needed to bridge the gap for some individuals in covered households, having the device is only the start. Programming must also consider the cost of software, cybersecurity features, and the digital

skills needed to utilize the equipment. Some low-cost internet plans come with lower connectivity speeds or data caps that restrict or prevent individuals from participating fully. Programming must consider the full package of needs to serve these individuals.

Training for digital skills needs to be personalized to the individual's needs and flexible so that it can fit into busy schedules. Participants in the session noted that many people they work with in covered households do not want to be put in a situation where they might feel "stupid" so they may avoid learning opportunities to simply avoid the situation. Pushing an online, flexible platform could serve those individuals better than in-person learning opportunities.

As relationships are built in serving these individuals, it is important to partner with groups that already successfully serve these individuals effectively. The public libraries are already used extensively throughout the state as a place for safe, free Wi-Fi and device access. AmeriCorps, Volunteer Iowa, United Way, and like organizations have a strong history of working with covered households to help meet needs. Working with churches and community centers can provide a common location to hold digital skills learning opportunities or Affordable Connectivity Program sign ups.

Available Opportunities for Covered Households - Participants mentioned programs or resources that could serve as models, or provide best practices for improving digital equity in Iowa:

- *DMACC's Evelyn K. Davis Center* in Des Moines. The center offers digital skills classes and ELL classes designed to help people get the skills they need for local employment.
- *The National Digital Inclusion Alliance (NDIA)* is a national organization formed to advance digital equity by supporting community programs and equipping policymakers to act. They created the digital navigator model, of which CBAN (*see above*) is a part.

Proposed Strategies

- Goal 3 – Broadband Affordability. Find ways to support public housing to provide reliable internet to covered households.
- Goal 4, Strategy B Device Ecosystem. Develop a device ecosystem with a focus on providing eligible households, particularly those enrolled in other state-assistance programs, enough digital devices to support all members of the household.
- Goal 4, Strategy C Device Technical Assistance. Create a mobile IT desk to provide training and support for individuals to access a one-stop source to solve digital device issues. One solution may be adding digital device support to Iowa's No Wrong Door system.
- Goal 5, Strategy C Digital Navigators. Develop a "train the trainer" digital navigator model to multiply digital navigators to deliver digital training across the state. This includes focusing on training existing resource and service providers to add a "digital navigator" certification to their skill set.
- Goal 5, Digital Skills. Engage employers to build digital skills in the workforce beyond just the core function needed for their current job to create a more dynamic workforce.
- Goal 6, Essential Services. Streamline the process for accessing state programs, which may include auto-enrollment for additional programs when a person qualifies.

- General. Continue to convene service providers to align priorities and share resources and activities.

Measurable Objectives for Covered Households Residents:

In some instances, a covered population will have a measurable objective specific to that population that differs from the overall covered population number. In many cases, this is made possible due to having enough demographic data from the statewide survey.

Goal #	Measurable Objective (Covered Population #)	Covered Households (Population Goal
Goal 1 Broadband Availability	100% Access by end of 2029	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029	500 public Wi-Fi &/or charging station points by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey from 30% to 20%	Reduce dissatisfaction rate in statewide survey from 32% to 21%
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs by end of 2029	50% of public libraries will offer hotspot checkout programs by end of 2029
Goal 4 Digital Devices	50% reduction in households that report not having enough digital devices at home (12% → 6%)	50% reduction in households that report not having enough digital devices at home (23% → 11%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans	Distribute at least 19,000 refurbished or donated devices to Iowans in covered households
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey	10% increase in digital skills confidence in statewide survey
Goal 5 Digital Skills	Establish 250 digital skills information desks	Establish 250 digital skills information desks
Goal 5 Digital Skills	20,000 Iowans complete digital skills training	3,800 Iowans in covered households complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government complete audit	100% of essential online services for individuals in a covered household (state gov't websites) complete audit
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 65% confidence in device protection, 83% create strong passwords, 61% avoid phishing)

Goal #	Measurable Objective (Covered Population #)	Covered Households (Population Goal
Goal 7 Privacy & Cybersecurity	25,000 Iowans complete cybersecurity training	4,750 Iowans in covered households complete cybersecurity training

4.3.2.4 Covered Population – Veterans

Veterans make up 5.9 percent of Iowa's population. As a group, ages span from twenty-somethings to individuals over 75. Given this multi-generational composition, veteran's experiences and challenges with access, affordability, devices and digital skills vary widely as well.

Key Issues and Insights from the Session

DOM hosted a facilitated session September 26, 2023 that focused on the veteran population. Participants represented organizations that work with veterans in different capacities that could speak to the population's interactions with digital devices, abilities to use the devices, and how best to increase and improve digital skills. It was noted that one should never assume a veteran's level of knowledge or technical skills based on age as stories of Korean era veterans easily navigating apps on their smartphones were just as prevalent as young veterans that have managed to avoid using technology at this point in their lives.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: State Library of Iowa, Veterans Tech Support, Iowa Workforce Development, Tama County, Johnson County, Wayne County, Polk County, Iowa Department of Veterans Affairs, Veterans of Foreign Wars, American Legion

The majority of the veterans that the participants represented and worked with were aging individuals with less experience working with digital devices. These aging individuals were more likely to seek help in accessing programs than younger veterans, but participants noted many veterans are reluctant to seek help. Participants in the session described the veterans they work with as independent and proud, inclined to see assistance as "charity," which prevents many veterans from taking advantage of programs they qualify for. This may be due to the idea that using a benefit would take the opportunity away from someone that may need it more.

Participants noted that to work successfully with veterans, a level of trust must be achieved, which takes time. Veterans may not trust that programs, particularly those offered by the government, will continue after they sign up. This can lead to an attitude of "why bother" and frustration with bureaucratic red tape that may stop them from initiating enrollment. This could be a potential explanation for why veterans had such a low to non-existent participation rate in the Affordable Connectivity Program according to the statewide survey. This wariness creates hesitation in adopting new skills or using technology and can also lead to avoidance of technology altogether where negative outcomes like misinformation campaigns and hackers are perceived as prevalent.

Some programs that serve veterans provide devices, but those programs rarely come with training or there may be restrictions put on the device that limits the ability to use it for other applications. Participants in the session described the veterans they work with as wanting clear, explicit instructions on how to operate a digital device and that the idea of figuring out how to use a device or program by trial and error would not fly for many. Veterans would rather learn what to do right away and not waste time by playing around with the device on their own.

Participants in the session described an understanding from veterans that searching for a job, conducting a telehealth visit, and applying for benefits will require digital skills, but can be frustrated if easily digestible instructions are not provided. Veterans are interested in building digital skills for basic software and applications, but skill levels vary widely across the population. It will be necessary to help assess where a veteran is at with current digital skills, evaluate what skills could be improved or introduced, and build a specific plan for them. Many veterans do not have a long history of interacting with digital devices, which means that promoting digital devices and digital skills programming through online means only can miss the targeted audience. Given the relationship, or lack thereof, to online portals, many veterans seem to prefer in-person instruction.

Veterans are spread throughout the state and many live in rural areas that do not currently have broadband access available to them or cellular coverage that can be used reliably. Other veterans may live without a home, which limits their ability to access devices, broadband, and in some cases, electricity to charge personal devices.

Participants in the session promoted the idea of multi-generational teaching. Tapping into high school service groups for students to earn community service hours teaching veterans digital skills in order to earn Green Cord credentials was offered as a replicable way to educate veterans across the state. Other partnerships could include working with local Veterans of Foreign War and American Legion chapters, potentially as locations to host digital skills classes. Iowa State Extension offices and Volunteer Services at VA hospitals could also serve as outreach champions for digital skills building.

Available Opportunities for Veterans - The participants in the veterans group mentioned several programs or initiatives that are helping veterans in the digital space:

- *Veterans Tech Support* is a small nonprofit offering digital skills trainings and equipment to veterans. Classes are held where veterans already meet like American Legions and VFWs.
- The Amvets Post in Des Moines hired a high school student who holds a monthly session with veterans to help them learn to use technology and answer their questions.
- IowaWorks Centers across the state often offer digital skills training, but limited locations, transportation and time are barriers.
- The US Department of Veterans Affairs (VA) issues tablets for telehealth and job searches. It also offers a secure videoconferencing app for telehealth, *VA Video Connect*.
- Multiple County Veterans Services Offices support veterans with digital applications and other online access.
- *National Able Network* has come to Iowa to help a limited number of clients, including veterans, with career development and training.
- The State Library has a new tool (*Brainfuse JobNow & VetNow*) that veterans can access to find out about job skills and other support.
- *AARP Veterans Fraud Center* offers webinars and other resources for veterans.

Proposed Strategies - The veterans group focused on expanding digital skills training and compiling and communicating the programs and services that are available to support digital equity.

- Goal 4 – Digital Devices. Work with the VA to incorporate mandatory training on how to use VA-issued devices and apps at the time of device distribution.
- Goal 5, Strategy A – Digital Skills Curriculum. Support the development of curriculum and materials for people at all levels of digital skills for distribution and broad use across the state.
- Goal 5, Strategy B – Digital Skills Training. In addition to virtual training, create a sustainable system of instructors by funding a program that pays for digital skills instructor time.
- Goal 5, Strategy C – Digital Navigators. In addition to supporting a network of digital navigators, explore opportunities for incentivizing county governments to provide training in their counties via their IT staff, similar to services provided in training on cybersecurity.
- General. Compile and house a centralized inventory of digital resources available to veterans including digital device access, device tech support, and digital skills training opportunities. Develop and implement a comprehensive promotion plan that utilizes multiple methods to promote the digital resource inventory.
- General. Enhance coordination and communication between program and service providers to increase dissemination of digital skills training tools and opportunities.
- General. Provide more funding to support programs and services that work well and can be scaled up.

Measurable Objectives for Veterans:

In some instances, a covered population will have a measurable objective specific to that population that differs from the overall covered population number. In many cases, this is made possible due to having enough demographic data from the statewide survey.

Goal #	Measurable Objective (Covered Population #)	Veterans Population Goal
Goal 1 Broadband Availability	100% Access by end of 2029	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029	500 public Wi-Fi &/or charging station points by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey from 30% to 20%	Reduce dissatisfaction rate in statewide survey from 34% to 23%
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs by end of 2029	50% of public libraries will offer hotspot checkout programs by end of 2029
Goal 4 Digital Devices	50% reduction in households that report not having enough digital devices at home (12% → 6%)	50% reduction in households that report not having enough digital devices at home (10% → 5%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans	Distribute 4,425 refurbished or donated devices to Iowa veterans

Goal #	Measurable Objective (Covered Population #)	Veterans Population Goal
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey	10% increase in digital skills confidence in statewide survey
Goal 5 Digital Skills	Establish 250 digital skills information desks	Establish 250 digital skills information desks
Goal 5 Digital Skills	20,000 Iowans complete digital skills training	1,180 Iowa veterans complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government complete audit	100% of essential online services for veterans (state gov't websites) complete audit
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 76% confidence in device protection, 87% create strong passwords, 67% avoid phishing)
Goal 7 Privacy & Cybersecurity	25,000 Iowans complete cybersecurity training	1,475 Iowa veterans complete cybersecurity training

4.3.2.5 Covered Population – Individuals from a Racial or Ethnic Minority Group

Racial and ethnic minorities make up about 15 percent of Iowa's population with a wide diversity of races and ethnicities within the subpopulation. That diversity of races and ethnicities comes with a variance of barriers with respect to digital equity. That variance is difficult to capture in something like a statewide survey, which does a better job of aggregating commonalities among covered populations. Due to that limitation, it will be important to collect additional data and work with community leaders to better understand the unique needs of Iowa's racial and ethnic minority population.

Key Issues and Insights from the Session

DOM hosted a facilitated planning session on October 12, 2023 focused on digital equity issues for racial and ethnic minority groups. During the facilitated session, one participant noted that as many as 180 different languages may be spoken across the state. That diversity of languages and dialects can add to translation problems, particularly as many services are only provided in one language. One participant noted that "minority" is not the right way to think about this covered population. As the only growing segment of Iowa's population, this covered population should be considered a "priority population."

Participants in the session stressed that relationship building is critical and it will be important to consider multiple cultures and the need for trusted messengers as digital equity programs are rolled out in Iowa. Stakeholders warned that members in this covered population can be suspicious of government because of their personal and cultural history, and can feel that they are just a "check mark" rather than truly being helped. One participant mentioned that there is "always a gap in who is at the table," meaning people who are not part of the racial or ethnic minority are often doing the planning for them, and without their input. Participants explained that competitive grants can have the negative effect of pitting racial and ethnic minority groups against each other, creating an atmosphere of exclusion rather than one of cooperation and inclusion.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: State Library of Iowa, Omaha Tribe of Nebraska, Meswaki Nation, Ankeny School District, Urban Dreams, Habitat North Central Iowa, Iowa Department of Health and Human Services, Iowa Department of Human Rights, Mercy Hospital Des Moines, Mercy Hospital Storm Lake, Corinthian Baptist Church, Great Plains Action, Iowa Migrant Movement for Justice, League of United Latin American Citizens

Data to help guide decision making on small populations is limited and tough to collect in a way that meets scientific rigor and statistical significance. However, it is vital to find ways to work with community leaders to better understand the needs and the pathways to communicate opportunities to members of the population.

Given the designated relationship of sovereign nations, the eligibility and benefits available to Native Americans can create confusion among tribal members. Settlement boundaries can in some cases prevent a tribal internet service provider from serving tribal and non-tribal members

that live adjacent to the settlement. On the flip side, some non-tribal internet service providers may be reluctant to serve tribal lands.

Participants expressed frustration with internet service providers in what they described as operating in monopolies, leading to reliability and affordability issues. One solution discussed at the table was to categorize broadband service as an essential utility like electricity. That may help with affordability issues as broadband and digital devices are often the first thing dropped when a family needs to make cuts in the budget. Alternatively, some families may cut other essentials like reliable transportation in favor of broadband in the home.

As diverse as the racial and ethnic minority population is, so too is the range of digital skills and ability to access and afford technology. There are many disparities among the demographic groups. Technical experiences and fluency vary broadly, and often by generation. One participant described technology as being the new "power discourse" in many cultures, enabling new opportunities and influencing success. Digital knowledge is key to better employment, but information and knowledge about how to build those digital skills is largely unknown if they exist or how to access those opportunities. That lack of digital skills includes a lack of knowledge of cybersecurity threats, increasing the likelihood an individual in this population could fall victim to a scam. Fear of cybersecurity issues can lead to distrust over using technology at all, thus leaving members of the population further behind.

When working to reach members of a racial and ethnic population, it is vital to work with community leaders to serve as partners and spokespeople to carry the message. Often, working through the faith-based network can be the most effective in spreading a message. One participant noted the need to use traditional Black media, like Black Iowa News, when conveying a message to the Black population. Finding similar pathways to reach racial and ethnic minorities will be key.

Available Opportunities for Minority Populations - Participants mentioned programs that are currently having success in Iowa or could be resources for Iowans working in digital education or access:

- Libraries in Storm Lake, Logan and Cherokee are participating in the *American Library Association's (ALA) Community Connect* program in partnership with Capital One. The libraries receive five Wi-Fi hotspots to lend out; five HP laptops to lend out; a $2,000 programming stipend; and travel and accommodation expenses for attendance of a one-day orientation workshop for library project directors at ALA's Annual Conference.
- *Community Health Workers (CHW)*. A community health worker is a frontline public health worker who is a trusted individual in the community being served. The CHW serves as a liaison/link/intermediary between health/social services and community members to facilitate access to services and improve the quality and cultural competence of service delivery.
- A Service Navigators program, funded by the University of Iowa in cooperation with the local SALUD multicultural health coalition, is hosted at the Storm Lake Library and helps individuals with telehealth appointments and other online health resources.
- *National Alliance for Partnerships in Equity (NAPE)*: a national organization that works to build educators' capacity in implementing effective solutions for increasing student access, educational equity and workforce diversity.

- Multiple *Girls Who Code* Clubs in Iowa are using a national curriculum to teaching coding skills to girls in grades 3 through 12.
- Tech programs for professionals: *TechLatino*, *AfroTech*
- Digital hub for Immigrants: *Informed Immigrant*

Proposed Strategies

- Goal 1, Strategy B Public Wi-Fi Access Program. Identify, develop, and catalog a list of places and spaces where individuals can access free wi-fi without having to make a purchase.
- Goal 5, Digital Skills. Host technology trainings at trusted places in minority communities and in coordination with trusted figures to reach targeted populations.
- Goal 5, Strategy B Digital Skills Training. Partner with school system to deliver workshops for parents and care givers to better understand how to access student and school information through digital devices.
- General. Allow DOM to hold future funding and use stakeholders as partners in implementation – or convene stakeholders to apply for federal funding collaboratively.
- General. Continue to convene stakeholders to share best practices and align services.
- General. Create a hub of resources for all to access through any New Iowan Center or agency.
- General. Develop an assessment for individuals that will determine their needs that automatically identifies available programs that the individual can benefit from.
- General. Implement communication outreach initiatives by considering multiple outlets (television, social media, posters, radio, etc.) to reach people where they normally take in information.

Measurable Objectives for Racial and Ethnic Minorities:

In some instances, a covered population will have a measurable objective specific to that population that differs from the overall covered population number. In many cases, this is made possible due to having enough demographic data from the statewide survey.

Goal #	Measurable Objective (Covered Population #)	Racial & Ethnic Minorities Population Goal
Goal 1 Broadband Availability	100% Access by end of 2029	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029	500 public Wi-Fi &/or charging station points by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey from 30% to 20%	Reduce dissatisfaction rate in statewide survey from 23% to 15%
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs by end of 2029	50% of public libraries will offer hotspot checkout programs by end of 2029
Goal 4 Digital Devices	50% reduction in households that report not having enough digital devices at home (12% → 6%)	50% reduction in households that report not having enough

Goal #	Measurable Objective (Covered Population #)	Racial & Ethnic Minorities Population Goal
		digital devices at home (41% → 20%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans	Distribute 11,175 refurbished or donated devices to Iowans
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey	10% increase in digital skills confidence in statewide survey
Goal 5 Digital Skills	Establish 250 digital skills information desks	Establish 250 digital skills information desks
Goal 5 Digital Skills	20,000 Iowans complete digital skills training	2,980 Iowans complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government complete audit	100% of essential online services for individuals in a racial and ethnic minority (state gov't websites) complete audit
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 83% confidence in device protection, 91% create strong passwords, 77% avoid phishing)
Goal 7 Privacy & Cybersecurity	25,000 Iowans complete cybersecurity training	3,725 Iowans complete cybersecurity training

4.3.2.6 Covered Population – English Learners

English language learners (ELL) encompasses a broad group of people from immigrants and refugees to individuals in the deaf community. As with all of the covered populations, digital skills, experience and access vary widely. English Learners represent an estimated 13.3% of the population of Iowa and often identify with other covered populations as well. However, the biggest limitation in working with and developing programming for this covered population starts with the lack of data to better understand the needs and differences between individuals from diverse backgrounds and for different native languages.

Key Issues and Insights from the Session

DOM hosted a facilitated session with representatives of organizations working with English Learners on October 12, 2023. The session with English Learners revealed extensive overlap of challenges and barriers identified in the racial and ethnic minority session, often with the same organizations working closely with individuals identifying with both populations.

Participants in the session described new immigrants and refugees as intelligent people who are many times overwhelmed by the experience of navigating through new experiences while trying to take care of their families. Because of the myriad pressures placed on these individuals, learning digital skills may not rank as a high priority. In fact, participants noted that it was not uncommon to work with individuals lacking experience using a computer.

English Learners can run into barriers with translation services due to a lack of interpreters. While many service providers have some type of phone interpretation service, participants in the facilitated session noted that these services can be spotty, only working “75 to 80 percent” of the time. Despite these challenges, participants in the session confirmed the importance of digital skills in opening doors for immigrants and refugees, putting digital savvy on equal footing with improving language skills. In fact, the two skills should be married, lifting both digital and language skills together.

People in the deaf community struggle with sign language translation services. Individuals in the deaf community may not have fluency in American Sign Language (ASL) or be able to fully take advantage of closed captioning. Like verbal interpretation services, virtual remote interpretation services face limitations on the number of interpreters available and may not be able to meet demand. To compound these issues, a lack of internet access in rural areas makes interpretation services for deaf individuals near impossible to participate in activities. Participants noted approximately 200 interpreters work in the school system to support about 2,000 deaf children in Iowa, a deficit that has profound impact on the education of those individuals.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: State Library of Iowa, Iowa Courts, Des Moines Area Community College, Iowa Legal Aid, Iowa Workforce Development, Iowa Educational Services for the Blind and Visually Impaired, Iowa International Center, Iowa Migrant Movement for Justice, Refugees and Immigrants Association League of United Latin American Citizens, Genesis Youth Foundation

Importantly, ASL and English interpreters are not digital device and digital skills experts but may be asked frequently to help in that capacity. Working with interpreters to add that level of digital savvy to their toolbox could be one pathway to serving more Iowans, but at a minimum equipping those interpreters with contacts and information on digital device and skills resources should be prioritized. Participants also noted that English Learners may be able to speak the language well, but have trouble reading English or vice versa, and not all individuals that can navigate between multiple languages can serve as interpreters.

Participants noted how difficult it can be to reach undocumented people who may avoid communication efforts from official sources. There is a need for communications to come from a trusted source, underscoring the importance of working with community leaders to reach members in all communities.

The facilitated session revealed the many ways in which affordability plays a key role in the English Learners population. Digital device giveaway programs are vital to reaching many in this community, but they are often limited in what software they can run. English Learners in covered households may need to switch phones or services often, which can carry additional activation fees to renew service. A language barrier can also make the product or service English Learners are subscribing to unclear, like a bundle from an internet service provider, which may lead to paying for unneeded or unnecessary services. In-person digital skills training is most effectively accomplished one-on-one with English Learners, but the cost of transportation or child care could create additional barriers. The Temporary Assistance for Needy Families and other programs that help individuals in the English Learners population have limits on the aid provided that does not extend to digital devices or broadband service.

Available Opportunities for English Language Learners

Participants identified programs that currently support English Language Learners with technology resources in Iowa:

- Telecommunications Access Iowa (TAI) is a program of the Iowa Utilities Board and is administered by Deaf Services Unlimited, Inc. Established as a result of the Americans with Disabilities Act (ADA), the program provides vouchers to go toward the purchase of specialized telecommunication equipment for Iowans who are deaf, hard of hearing, or have speech difficulties.
- Shalom Community Impact Center in Urbandale offers multiple programs for refugees including English language classes and digital skills classes.

Proposed Strategies

- General. Invest in targeted data collection to better understand this diverse community to close the gap in the statewide survey.
- Goal 5, Digital Skills. Recruit navigators from different communities to best reach targeted groups with consideration for native language translation.
- Goal 4, Digital Devices. Investigate electronic sign language translation service software and how to utilize emerging technologies to allow for hearing impaired individuals to better use digital devices.
- General. Work with workforce development to connect employers and translation services via digital devices to grow the workforce.

- Goal 3, Strategy Wi-Fi Hotspot Checkout. Expand and augment hotspot checkout programs in public libraries.
- Goal 4, Digital Devices. Expand the Iowa Utility Board's Telecommunications Access Iowa program to include devices for all ELLs.
- Goal 1 Broadband Availability, and Goal 5 Digital Skills. Create Digital Centers within different targeted communities to allow for access to broadband and an increased likelihood of participation in digital skills training opportunities.

Measurable Objectives for English Learners:

In some instances, a covered population will have a measurable objective specific to that population that differs from the overall covered population number. In many cases, this is made possible due to having enough demographic data from the statewide survey.

Goal #	Measurable Objective (Covered Population #)	English Learners Population Goal
Goal 1 Broadband Availability	100% Access by end of 2029	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029	500 public Wi-Fi &/or charging station points by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey from 30% to 20%	Reduce dissatisfaction rate in statewide survey from 30% to 20%
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs by end of 2029	50% of public libraries will offer hotspot checkout programs by end of 2029
Goal 4 Digital Devices	50% reduction in households that report not having enough digital devices at home (12% → 6%)	50% reduction in households that report not having enough digital devices at home (46% → 23%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans	Distribute 9,975 refurbished or donated devices to Iowans
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey	10% increase in digital skills confidence in statewide survey
Goal 5 Digital Skills	Establish 250 digital skills information desks	Establish 250 digital skills information desks
Goal 5 Digital Skills	20,000 Iowans complete digital skills training	2,660 Iowans complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government complete audit	100% of essential online services for English learners (state gov't websites) complete audit
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 77% confidence in device protection, 93% create strong passwords, 82% avoid phishing)
Goal 7 Privacy & Cybersecurity	25,000 Iowans complete cybersecurity training	3,325 Iowans complete cybersecurity training

4.3.2.7 Covered Population – Individuals with a Disability

Individuals with disabilities describe a diverse population with a wide range of disabilities. Some individuals have congenital disabilities while others acquire the disability at some point in their life, which can impact the way those individuals adapt to new and changing technology. This creates a wide gap in digital skills and barriers for this population. More than 12% of the population in Iowa lives with one or more disability.

Key Issues and Insights from the Session

DOM held a facilitated session on October 3, 2023 focused on individuals with a disability and digital equity. One participant in the facilitated session noted that "technology is designed for the masses," but given the broad range of disabilities some Iowans have, the digital devices, information, and software packages must find a pathway to meet the individual person's needs. Individuals with disabilities have an opportunity to take advantage of technology to help aid them as they complete tasks in daily life, but often barriers both simple and complex keep life changing and time saving technology out of reach. Part of the problem comes down to cost as individualizing devices and administering training for those devices and processes is difficult and specialized. Assistive technologies such as color contrast, screen readers, rollerball mousepads, headsets for voice assistance, and modified keyboards are often not covered by insurance. Furthermore, an affordability gap opens up when students transition out of school support systems and they are required to give back devices and may lack the means to replace them.

Individuals with disabilities may need help in using new devices. Often, free device programs come with limited or no training or may be dedicated devices that limit their usability. Technology support and access to public services for people with disabilities is often not accessible. While these device giveaway programs remain important for this population, programming must consider the training and ongoing tech support aspect. Some individuals with disabilities may lack savvy with regards to cybersecurity and protecting personal information, making that aspect of digital skills learning a vital component of any program.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: State Library of Iowa, Iowa Department of Education, Iowa Vocational Rehabilitation Services, Iowa Coalition for Integration and Employment, Iowa Statewide Independent Living Council, Autism Society of Iowa, ASK Resources, University of Iowa School of Social Work, Brain Injury Alliance of Iowa, Iowa Workforce Development, Iowa Department for the Blind, National Alliance on Mental Illness Iowa, Iowa Health and Human Services - Division of Aging and Disability Services, Disability Rights Iowa, Iowa Developmental Disabilities Council, Polk County Behavioral Health and Disability Services, Money Follows the Person, University Center for Excellence in Developmental Disabilities, and Easterseals Iowa.

However, participants in the session noted that some individuals with disabilities can struggle learning digital skills, even with devices designed to their needs. Those that are interested in

learning new digital skills may not be able to find transportation to a physical location or may have trouble with access to the location. This makes public spaces like libraries a particularly attractive partner for offering digital skills learning opportunities to ensure physical accessibility. Importantly, participants noted it was important to think of caregivers and direct support workers when thinking about this population. Often, it is those individuals who will be directly using or supporting the use of digital devices for the individual.

Available Opportunities for Individuals with Disabilities - Participants offered information on several programs and partners that do or might support digital skills and technology access.

- Technology First (*piloted in Missouri*): A platform to consider a technology first approach in addition to in-person services.
- *ASK Resource Center* offers conferences and houses the Parent Training and Information Center, through which participants felt digital skills training and access education could be provided.
- *Transition Iowa* is a website that provides information and resources that support transition planning for youth with disabilities and their families, and the educators and professionals who support them. Their resources page offers multiple resources in assistive technology among many other topics.
- *Easterseals Iowa* has an Assistive Technology Program that serves people with disabilities, including older Iowans across the state. Information and Communications Technology (ICT) is a service offered through the program which includes an accessibility course, "Creating Accessible Documents," as well as Website and PDF Accessibility Review services.

Proposed Strategies

- Goal 4 – Digital Devices. Develop a standardized assessment process to understand individual hardware needs for individuals with disabilities.
- Goal 5 – Digital Skills. Host digital skills, device usage, cybersecurity trainings across the state utilizing subject matter experts, consultants, mentors, and others that includes specific focus for individuals with disabilities.
- Goal 5 – Strategy 3, Digital Navigators. House digital navigators in libraries who are trained in working with specific populations including but not limited to individuals with disabilities.
- Goal 6 – Essential Services. Conduct an accessibility audit of all state websites, documents, and forms to better understand the gap that exists for individuals with disabilities.
- General. Create an inventory of resources and network of resource providers accessible to individuals with disabilities to better acquire necessary devices and training to accommodate an individual's needs.
- General. Continue to convene disability stakeholders to discuss digital equity issues and share best practices to those that serve those individuals.

Measurable Objectives for Individuals with Disabilities:

In some instances, a covered population will have a measurable objective specific to that population that differs from the overall covered population number. In many cases, this is made possible due to having enough demographic data from the statewide survey.

Goal #	Measurable Objective (Covered Population #)	Individuals w/Disabilities Population Goal
Goal 1 Broadband Availability	100% Access by end of 2029	100% Access by end of 2029
Goal 2 Broadband Reliability	500 public Wi-Fi &/or charging station points by end of 2029	500 public Wi-Fi &/or charging station points by end of 2029
Goal 2 Broadband Reliability	Reduce dissatisfaction rate in statewide survey from 30% to 20%	Reduce dissatisfaction rate in statewide survey from 48% to 32%
Goal 3 Broadband Affordability	Reach parity with national average enrollment rate by end of 2029	Reach parity with national average enrollment rate by end of 2029
Goal 3 Broadband Affordability	50% of public libraries will offer hotspot checkout programs by end of 2029	50% of public libraries will offer hotspot checkout programs by end of 2029
Goal 4 Digital Devices	50% reduction in households that report not having enough digital devices at home (12% → 6%)	50% reduction in households that report not having enough digital devices at home (27% → 13%)
Goal 4 Digital Devices	Distribute 75,000 refurbished or donated devices to Iowans	Distribute 9,450 refurbished or donated devices to Iowans
Goal 5 Digital Skills	10% increase in digital skills confidence in statewide survey	10% increase in digital skills confidence in statewide survey
Goal 5 Digital Skills	Establish 250 digital skills information desks	Establish 250 digital skills information desks
Goal 5 Digital Skills	20,000 Iowans complete digital skills training	2,520 Iowans complete digital skills training
Goal 6 Essential Services	100% of essential online services for state government complete audit	100% of essential online services for individuals with disabilities (state gov't websites) complete audit
Goal 7 Privacy & Cybersecurity	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 81% confidence in device protection, 92% create strong passwords, 78% avoid phishing)	10% increase in cybersecurity related digital skills confidence in statewide survey (currently 57% confidence in device protection, 77% create strong passwords, 47% avoid phishing)
Goal 7 Privacy & Cybersecurity	25,000 Iowans complete cybersecurity training	3,150 Iowans complete cybersecurity training

4.3.2.8 Covered Population – Incarcerated Individuals

Approximately 8,200 individuals are housed in nine correctional institutions across the state of Iowa. The average length of stay for an incarcerated individual is approximately 10 months. The Iowa Department of Corrections works to "assist individuals as they work to become productive members of their communities when they reenter society." For currently incarcerated individuals, accessing the technology and technical skills that will be required upon reentry can present a challenge. Like most covered populations, incarcerated individuals vary widely in digital abilities. However, incarcerated individuals face additional barriers to accessing digital resources while incarcerated, including computer time for research, completing classwork, and training for digital skills. Incarcerated individuals need to learn digital skills for reentry in order to be ready to apply for jobs and housing, and to complete forms for assistance as they reestablish their lives on the outside.

Key Issues and Insights from the Session

The Department of Corrections hosted DOM to hold a facilitated session about digital equity and incarcerated individuals on September 27, 2023 at the Correctional Institution for Women in Mitchellville. Participants described a dichotomy that exists in the incarcerated community with some believing time served should be punitive while others are more focused on rehabilitation. That difference in perspective can create a culture that limits or restricts digital access for incarcerated individuals to further their education or vocational skills. This gap in punitive vs rehabilitative philosophy can sometimes get in the way of the interests of setting up individuals for successful reentry to society upon release. Any initiative involving digital devices and digital skills learning will require building trust and buy-in at all levels. Participants noted that only individuals in an approved educational program have any access to the internet and that access is used for aiding the completion of coursework only. This fact is key to understanding the context of the goals and objectives discussed herein.

Invited Organizations

The following organizations and entities were invited to participate in the facilitated session: Iowa Department of Corrections, Iowa Department of Education, Inside Out Reentry, Office of the Chief Information Officer

Participants agreed that security was of the utmost importance to protect the interests of the public, such as victims of incarcerated individuals, but also the safety and security of the incarcerated individual. The tools currently available to IT staff are sometimes too blunt, filtering out internet access that could be used to help incarcerated individuals complete coursework and other educational opportunities. These automated monitoring tools of internet usage can often be too ambiguous and not intuitive, which can limit the usefulness for educational purposes. Facilities operate with a zero-breach tolerance, which can leave behind long-term statewide consequences that can spill over to impact educational access for incarcerated individuals.

Correctional institution buildings were built to secure humans and are usually not easily retrofitted to support Wi-Fi, electrical power, or provide space for digital device access. The number of incarcerated individuals in educational programs currently outnumbers available devices and many of the devices available are often obsolete with non-functioning software. That can limit the ability of the individual to interface with educational activities or learn transferable skills that will help upon release. There may be additional opportunities to learn

digital skills outside of the current educational programming that would help incarcerated individuals upon reentry and those opportunities are worth exploring further. Individuals that have accumulated data during incarceration, in the form of educational coursework or health documents for example, are unable to take the data with them when they are released. Upon release, returning citizens often find the cost of devices and internet access to be a challenge.

The Department of Corrections has an opportunity to examine the educational program and associated resources and plan for how to better align resources in the future. A discussion through the lens of digital equity presents an opportunity to plan at programmatic levels to be ready for filing requests to acquire necessary resources when funding is made available. Participants believed that meeting regularly to discuss resource needs could lead to better preparedness to capture funding in the future.

Participants noted community colleges as key partners in building digital skills in incarcerated individuals during incarceration and after reentry. Other organizations and programs that may be potential partners include IowaWorks and Iowa Vocational Rehabilitation Services, workforce development programs, and the Iowa Consortium for Higher Education in Prison (ICHEP).

Available Opportunities for Incarcerated Individuals

Prison Education Program through the US Department of Education. Incarcerated students may have access to Federal Pell Grants to pursue postsecondary education when they are enrolled in an approved prison education program (PEP). Approved postsecondary education institutions can provide prison education that leads to credentials through the Second Chance Pell grant. Participants in the session noted that prison education programs are available to incarcerated individuals currently, but could be expanded to offer more CTE programming.

Iowa Workforce Development's Reentry Workforce Advisors provide incarcerated individuals with career counseling and classes as part of a joint Returning Citizen Program between Iowa Workforce Development (IowaWORKS) and the Iowa Department of Corrections. Reentry Workforce Advisors teach resume skills, evaluate work histories, and try to match each "returning citizen" with a potential career on the outside. Currently, advisors are working in six Iowa correctional facilities located in Mitchellville, Newton, Mount Pleasant, Rockwell City, Clarinda and Fort Dodge.

Iowa Department of Corrections offers 29 different apprenticeships across nine facilities with approximately 300 active apprentices at any given time. Apprenticeships cover everything from welding and maintenance-based skills to cooking and baking.

Proposed Strategies

- Goal 3 – Broadband Affordability. The incarcerated individuals population has limits related to affordability due to department budgets. Increasing the adult education budget, stagnant over the last seven years, can open up more opportunities to increase access to broadband. Additionally, the Department of Corrections can consider multi-state collaborations when working with private sector vendors to achieve economies of scale/increased buying power to free up funding for further digital equity pursuits.
- Goal 4 Strategy B. Create a device ecosystem that provides Incarcerated Individuals with donated devices, similar to the DMACC model, to increase the number of available

devices. Once the Incarcerated Individual earns release, allow the individual to take their device with them to retain records, such as classwork, and have a device to use.

- Goal 5 – Digital Skills. Seek Community College and University administration buy-in for expanding Pell programming.
- Goal 5 – Strategy A, Statewide Digital Skills Curriculum. Create a statewide Learning Management System (LMS) specific to the needs of Incarcerated Individuals and the Department of Corrections (cybersecurity concerns). This includes researching and purchase of non-internet connected programs and resources (e.g. courses, encyclopedias). Further, create an ongoing method for tracking recidivism based on education access (e.g. transfers to colleges, jobs, success stories) to show the importance of digital skills development.
- Goal 5 – Strategy C, Digital Navigators. Formalize a navigator program that includes an "inside navigator" to guide individuals through a reentry program and an "outside navigator" to continue with the individual, helping them make connections and access resources.
- Goal 7 – Privacy and Cybersecurity. Research flexible filtering software for individual access to the internet while protecting the safety of the Incarcerated Individual, the Department of Corrections, and those of the public. Work with partners to find funding for filtering software.

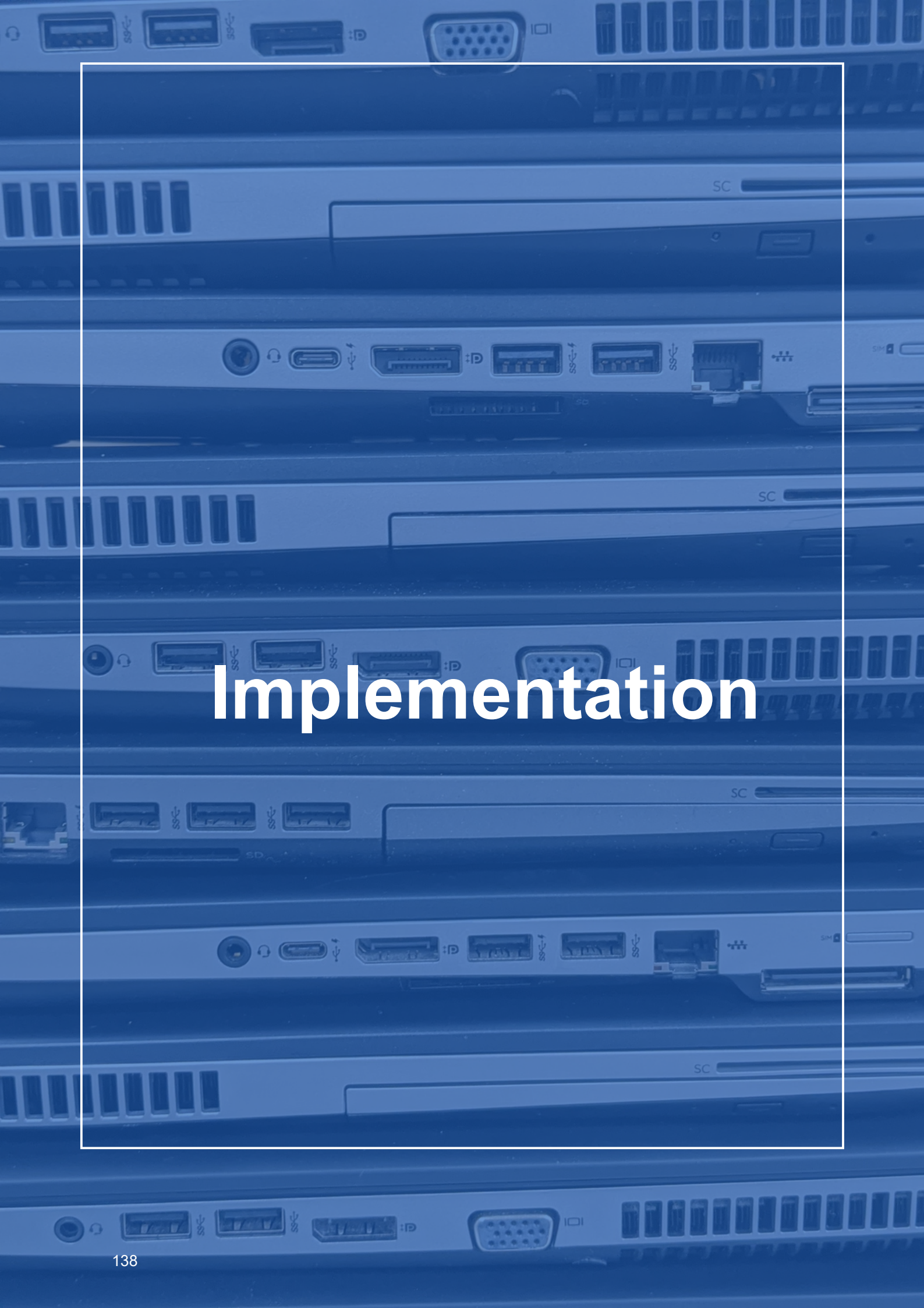
Measurable Objectives for Incarcerated Individuals:

Unlike the first seven covered populations, incarcerated individuals were not part of the data collection efforts in the statewide survey. To help close that gap in data, DOM approved a plan to conduct focus groups to better understand the barriers faced by individuals and staff. The summary conclusions from those sessions is included in Section 2.1.1 and the full report and methodology is available in the statewide survey, found in Appendix D.

However, due to those data collection challenges, incarcerated individuals lack the same kind of information from which to set measurable objectives in a digital equity plan. Upon reentry, incarcerated individuals will not be incarcerated any longer and by definition not part of this covered population. However, they may identify with one or more of the other seven covered populations, in which case they would be accounted for in a different section. Focusing solely on incarcerated individuals, as defined by the Digital Equity Act, for measurable objectives this plan will work with Department of Corrections to improve digital equity where possible.

Goal #	Incarcerated Individuals (Covered Population Goal)
Goal 1 Broadband Access	100% of correctional facilities provide access to incarcerated individuals participating in approved educational programs by the end of 2029
Goal 2 Broadband Reliability	This goal is about satisfaction of internet service provided, tied back to the statewide survey, and is therefore not applicable to incarcerated individuals.
Goal 3 Broadband Affordability	100% of incarcerated individuals are provided information about the Affordable Connectivity Program as part of reentry consultations by the end of 2029

Goal #	Incarcerated Individuals (Covered Population Goal)
Goal 4 Digital Devices	Digital device inventory is updated and doubled by the end of 2029.
Goal 5 Digital Skills	25% of incarcerated individuals complete a digital skills training course before reentry by the end of 2029
Goal 6 Essential Services	100% of incarcerated individuals are provided information on how to access
Goal 7 Privacy & Cybersecurity	25% of incarcerated individuals complete a privacy and cybersecurity training course before reentry by the end of 2029.



Implementation

5 Implementation

5.1 Implementation Strategy & Key Activities

The “Digital Divide” is a complicated term that impacts Iowans in many different ways. While some of the challenges in the digital divide can be solved with enough time and funding, other challenges will persist as long as people age and technology advances. To ensure that Iowans remain competitive in the classroom and the workplace, retain access to quality medical care, and have opportunities to participate and thrive in society, DOM is committed to searching for sustainable solutions. For example, a one-time device giveaway program would help alleviate immediate needs in a community, but investing in developing a device ecosystem sustained by Iowa’s businesses, institutes of higher education, and government institutions can help close an aspect of the digital divide for good.

Sustainability takes a level of coordination with Iowans to better understand shifting needs of communities and adapt programming to meet those needs. In order to accomplish this, DOM will look to continue to convene a “Coordinating Council” made up of representation from covered populations and experts in the facets of digital equity. Further, the “captains” of the Coordinating Council will be encouraged to convene a group of interested citizens and organizations, similar to those organized in the facilitated sessions described in Section 4, to focus on issues specific to that population or digital equity facet. This will allow for a network to help coordinate funding opportunities, share success stories, and provide a forum to elevate challenges.

Figure 59 Basic conceptual model of Coordinating Council

Ideally, the Coordinating Council and associated groups would convene at least once per quarter to share updates, challenges, and funding opportunities. An annual conference on digital equity would serve as an important platform for organizations to share the progress and challenges faces in closing the digital divide.

Many of the measurable objectives DOM has identified in the digital equity plan tie back to the statewide survey. In many cases, this survey provided the best information available on many facets of digital equity in the state and for the covered populations. A survey conducted in 2029 will provide DOM with a progress report from the baselines established above in coordination with anticipated funding closeouts associated with initial Digital Equity Act capacity grants. Given that the statewide survey serves as the gold standard for determining progress within many of the goals, it will be useful for the state to develop a dashboard to help track progress in real time to the ultimate goal. This dashboard may use publicly available information, such as Affordable Connectivity Program enrollment data, or collect information from Iowans to serve as a proxy before the survey is redeployed in 2029.

A statewide survey conducted in 2029 would also provide ample information from which to guide the update of Iowa's Digital Equity Plan. A 5-year plan update would serve the Digital

Equity Plan well given the novelty of the digital equity concept in Iowa at the time of the original plan's release, the speed of technology evolution, and the desire to retain flexibility in programmatic structure and approaches.

As DOM and other entities in Iowa pursue Digital Equity Act capacity grant funding, the following prioritization methodology will be employed. Implementation ideas will be mapped on a simple two by two prioritization matrix with the considerations of difficulty and/or cost to implement on one axis with relative value or impact on the other axis. This methodology will yield projects in four major categories as illustrated below.

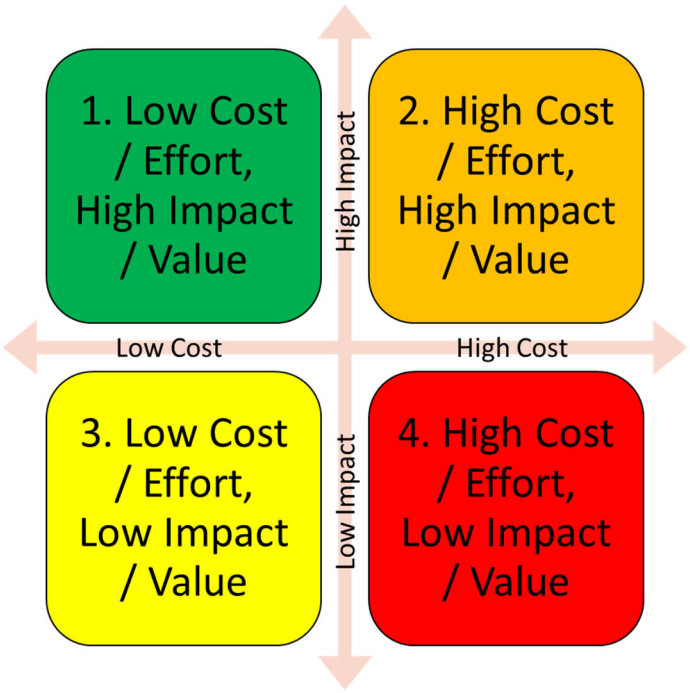


Figure 60 Basic conceptual matrix for prioritization

Projects in the upper left box that have a low cost or a low effort to implement and have a high impact or value to Iowans will be top priority. These are typically ideas that make sense to all involved but may just need an entity to take the lead. An example from the Plan would be Goal 1, Strategy B in creating a public Wi-Fi access program to coordinate and promote free access Wi-Fi points across the state. Projects in this box usually constitute the "low-hanging fruit" of any implementation strategy and usually get "picked" first as a result.

The upper right box are projects with a higher cost or effort and yield a high impact. Programs and ideas that map to box 2 typically have a bigger price tag and need varied experts to dedicate work to unlock a complex problem. These projects also retain high value like projects that map to box 1 but typically sit longer in need of funding and subject matter experts. In many cases, a state agency can serve as the best organization to coordinate these projects to take advantage of convening power. An example of this from the Plan would be the Goal 4, Organizing a Device Ecosystem.

The lower left box would contain ideas that may be relatively easy or lower cost to implement but may not deliver a relatively high level of impact. Important to note that depending on the initiative, the impact may be large to a specific set of people but may lack universal impact. That

does not mean that idea shouldn't be acted on but that it may be best for a group with a more focused mission to take the lead.

The lower right box would contain ideas that have a higher cost or effort to implement and would produce a relatively low impact or value. These are typically ideas that would not proceed without some level of reexamination or breaking out into smaller pieces. For example, a complex project may have constituent components that would provide higher value on their own. Those smaller, more focused projects could be broken off and acted upon to help close the digital divide.

While this Digital Equity Plan is designed, in part, to prepare for State Digital Equity Capacity Grant funds, some activities may be funded by other interests in the future. Any funding that helps advance the interests of the Digital Equity Plan will be coordinated back through this plan so as not to duplicate efforts moving forward. That includes the Broadband Equity, Access, and Deployment (BEAD) Program funds, which will focus efforts on addressing Goal 1a of this Plan, namely bringing high speed internet access to all Iowans. This coordination will take place via active participation from BEAD staff in digital equity activities. Iowa does not anticipate any non-deployment funds to be available to help implement other aspects of the Digital Equity Plan.

Overall, DOM will look to coordinate with interested partners and stakeholders in the state to either take the lead or act in a supporting role, depending on what's best for the project. By helping convene interested stakeholders regularly to help share and disseminate information, the efforts of many will far outpace the efforts of a single organization acting in isolation.


This section satisfies Additional Requirements #6, #7, and #10.

5.2 Timeline

In addition to satisfying the requirements of the Digital Equity Act Planning Grant funds, Iowa's Digital Equity Plan is designed to take advantage of Digital Equity Act State Capacity Grant dollars when available. Those funds are expected to be available for DOM to apply for at some point in 2024. We anticipate that these dollars will have an implementation time horizon of five years, thus using the end of 2029 as the end of the lifecycle of Iowa's first Digital Equity Plan. Additionally, DOM designed this plan to provide partners in Iowa a foothold to apply for competitive grant dollars under the Digital Equity Act and for other funds outside of the Digital Equity Act funding stream. This uncertainty in funding creates a number of unknowns including what programs and projects described in the plan will receive funding over the timeline. Details from funding opportunities will sharpen the focus of the plan as they are made available in the future. For now, the enclosed timeline represents a big picture idealized version of events over the course of the life of the project.


This section satisfies Additional Requirement #9.

	Launch 2024	Implement 2025-2028	Evaluate & Reassess 2029
DOM Activities	-Apply for DEA State Capacity Grant -Launch Digital Equity website -Determine dashboard components for monitoring	-Host annual Digital Equity Workshops / Conference -Track & report progress on performance indicators & program development	-Commission statewide survey to gather information for DEA State Capacity Grant closeout -Update or write new Digital Equity Plan based on progress and lessons learned
Covered Population Committee Activities	-Form committees of interested stakeholders & organizations for each of the 8 covered populations -Apply for DEA Competitive Grants -Search for alternative funding to help close gaps where available	-Meet on regular basis to share progress and ideas -Collect information to better understand the needs of the population -Disseminate digital equity information to partners and individuals to increase participation -Participate in annual DE workshops	-Close out and report on all DEA Competitive Grants
Goal 1 Broadband Availability: Universal access & Public Wi-Fi Program	-Work with BEAD Program to help support administration of grant program -Develop marketing and outreach material for public Wi-Fi access Program	-Launch website / app to show public Wi-Fi access locations -Promote through multi-media and workgroups to encourage participation -Update locations regularly	-Address access gaps as necessary -Report on public Wi-Fi access program location map and usage
Goal 2 Broadband Reliability – Service evaluation	-Work with Internet Service Providers to promote Broadband labels -Develop step-by-step process to evaluate home internet service	-Work with digital navigator network to update best practices on Wi-Fi set up and broadband speed labels -Promote broadband map challenge to help resolve speed discrepancy issues	-Evaluate progress with digital navigator network
Goal 3 Affordability – ACP Enrollment & Wi-Fi Hotspot programs	-Develop marketing material aimed at promoting ACP Program -Evaluate current Wi-Fi hotspot checkout programs in libraries	-Continue to push marketing materials and hold sign up events to increase ACP enrollment -Steadily increase the hotspot checkout program to serve more libraries	-Reach parity with the national average enrollment for ACP -Evaluate how to push enrollment even higher -Evaluate check out rates of Wi-Fi hotspot program

	Launch 2024	Implement 2025-2028	Evaluate & Reassess 2029
Goal 4 Digital Devices – Create Digital Device Ecosystem	-Inventory current device access locations and distributors -Forge long-term relationships for sustainable device donation -Incentivize device refurbisher to establish in Iowa -Explore technical assistance resources	-Launch device distribution program including establishment of eligibility -Track progress toward device distribution goals -Promote technical assistance and digital skills training at device distribution events	-Evaluate supply and demand for digital devices -Survey recipients to better understand needs and longevity of devices -Evaluate usage of technical assistance resources
Goal 5 Digital Skills: Customize curriculum and evaluate platforms	-Customize statewide digital skills curriculum -Determine virtual training platform -Determine how to support a network of Digital Navigators -Create certification or digital skills badge for navigators in other fields serving Iowans	-Create new and update existing digital skills programs to meet needs of population -Work with digital navigators to share best practices with network -Promote digital skills courses to elevate confidence in Iowans	-Evaluate digital skills catalogue to determine gaps in knowledge (content) -Evaluate usage rates -Evaluate reach of digital navigator network
Goal 6 Essential Services: Create Accessibility Review Process	-Establish scope of “essential services” in Iowa	-Establish an accessibility review process to advise essential services organizations on the techniques and practices to continuously improve accessibility of online services. -Address identified issues with existing data collection programs and databases that may create obstacles for achieving comprehensive levels of accessibility and inclusivity.	-Evaluate implementation progress of suggested remediation activities
Goal 7 Privacy & Cybersecurity: Training Programs	-Establish cybersecurity training and awareness curriculum	-Deliver as part of digital skills offerings -Work with digital navigator network to have as part of services -Continue to conduct statewide Cybersecurity Awareness Campaign	-Evaluate Iowan’s confidence in key cybersecurity digital skills

While DOM understands the time and funding uncertainty of implementing a wide variety of programming, the following provides a potential operational timeline with the above tasks and milestone check points where appropriate. It is important to note that this exercise is conducted with the knowledge that grant requirements for implementation will help further shape the scope of any effort.

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
DOM Activities	Apply for DEA State Capacity Grant		■																						
	Launch Digital Equity website			■																					
	Determine dashboard components for monitoring				■	■																			
	Host annual Digital Equity workshops / conferences						■				■				■				■				■		
	Track and report progress on performance indicators and program development							■				■				■				■				■	
	Commission statewide survey to gather info for DEA State Capacity Grant Closeout																	■	■	■	■				
	Update or write new Digital Equity Plan based on progress and lessons learned																				■	■	■	■	

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
Covered Population Committee Activities	Form Committees of interested stakeholders and organizations for each of the 8 covered populations			■	■																				
	Help groups apply for DEA Competitive grants			■	■																				
	Search for alternative funding to help close gaps where available			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Meet on regular basis to share progress and ideas			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Collect information to better understand the needs of each population					■	■	■	■	■	■	■	■												
	Disseminate digital equity information to partners and individuals to increase participation			■	■	■	■	■																	
	Participate in annual DE workshops						■				■				■				■				■		
	Close out and report on all DEA Competitive Grants																						■	■	

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
Goal 1: Broadband Availability	Work with BEAD Program to help support administration of grant program																								
	Develop marketing and outreach material for public Wi-Fi access program																								
	Launch website / app to show public Wi-Fi access locations																								
	Promote through multi-media and workgroups to encourage participation																								
	Update locations regularly																								
	Address access gaps as necessary																								
	Report on public Wi-Fi access program location map and usage																								
	Measurable Objective: 100% Access																								

*All projects under grant agreement

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
Goal 2: Broadband Reliability	Work with Internet Service Providers to promote Broadband labels																								
	Develop step-by-step process to evaluate home internet service																								
	Work with digital navigator network to update best practices on Wi-Fi set up and broadband speed labels																								
	Promote broadband map challenge to help resolve speed discrepancy issues																								
	Evaluate progress with digital navigator network																								
	Measurable Objective: 500 public Wi-Fi $/or charging station points					*100				*200				*300				*400				*500			
	Measurable Objective: Reduce dissatisfaction rate in statewide survey amongst Iowans in covered populations from 30% to 20%							*Annual evaluation with dashboard data collection																	

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Goal 3: Affordability	Develop marketing material aimed at promoting ACP Program																								
	Evaluate current Wi-Fi hotspot checkout programs at libraries																								
	Continue to push marketing materials and hold signup events to increase ACP enrollment																								
	Steadily increase the hotspot checkout program to serve more libraries																								
	Evaluate how to push enrollment even higher																								
	Evaluate checkout rates of Wi-Fi hotspot program																								
	Measurable Objective: Reach parity with national average enrollment rate by end of 2029							*Annual evaluation with dashboard data collection																	
	Measurable Objective: 50% of public libraries will offer hotspot checkout programs to Iowans in covered populations by end of 2029					*10%				*20%				*30%				*40%				*50%			

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Goal 4: Digital Devices	Inventory device access locations and distributors																								
	Sustainable device donation																								
	Incentivize device refurbisher to establish																								
	Explore technical assistance resources																								
	Launch device distribution program																								
	Track progress																								
	Promote technical assistance																								
	Evaluate supply and demand for digital devices																								
	Survey recipients																								
	Evaluate usage of TA																								
	Measurable Objective: 50% reduction in covered population households that report not having enough digital devices at home (12% --> 6%)																								
	Measurable Objective: Distribute 75,000 refurbished or donated devices to Iowans in covered populations									*10,000				*25,000				*45,000				*75,000			

*Annual evaluation with dashboard data collection

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
Goal 5: Digital Skills	Customize curriculum																								
	Determine platform																								
	Establish network of Digital Navigators																								
	Create certification or digital skills badge																								
	Create digital skills programs																								
	Digital navigators share best practices																								
	Promote digital skills courses																								
	Evaluate catalogue to determine gaps																								
	Evaluate usage rates																								
	Evaluate reach of digital navigator network																								
	Measurable Objective: 10% increase in digital skills confidence in statewide survey																								
	Measurable Objective: Establish 250 digital skills information desks									*75				*150				*250							
	Measurable Objective: 20,000 Iowans in covered populations complete digital skills training									*3,000				*7,000				*12,500				*20,000			

*Annual evaluation with dashboard data collection

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Goal 6: Essential Services	Establish scope of "essential services" in Iowa																								
	Establish an accessibility review process to advise essential services organizations on the techniques and practices to continuously improve accessibility of online services																								
	Address identified issues with existing data collection programs and databases that may create obstacles for achieving comprehensive levels of accessibility and inclusivity																								
	Evaluate implementation progress of suggested remediation activities																								
	Measurable Objective: 100% of essential online services for state government that serve covered populations participate in review process																								

		2024				2025				2026				2027				2028				2029			
	Task / Milestone	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
Goal 7: Privacy & Cybersecurity	Establish cybersecurity training and awareness curriculum																								
	Deliver as part of digital skills offerings																								
	Work with digital navigator network to have as part of services																								
	Continue to conduct statewide Cybersecurity Awareness Campaign																								
	Measurable Objective: 10% increase in cybersecurity related digital skills confidence in statewide survey among Iowans in covered populations							*Annual evaluation with dashboard data collection																	
	Measurable Objective: 25,000 Iowans in covered populations complete cybersecurity training									*4,000				*9,000				*16,000				*25,000			

Appendices

6 Appendices

6.1 Appendix A – Plan Review Requirements

This section includes the five statutory and ten programmatic requirements this plan must meet. To help with the review process, a colored symbol appeared in the body of the text of the plan to indicate that an element was addressed in that section. Blue stars indicate one or more statutory requirements while a red star indicates one or more programmatic requirements.

 Statutory Requirement  Programmatic Requirement

The statutory requirements for the contents of State Digital Equity Plans are set forth in Section 60304(c)(1) of the Infrastructure Act, and are listed below and in Section IV.C.1.b.i of the SDEPG NOFO ("Statutory Requirements"):

1. Identification of barriers to digital equity faced by Covered Populations in the State.
2. Measurable objectives for documenting and promoting, among each Covered Population located in that State—
    a. The availability of, and affordability of access to, fixed and wireless broadband technology;
    b. The online accessibility and inclusivity of public resources and services;
    c. Digital literacy;
    d. Awareness of, and the use of, measures to secure the online privacy of, and cybersecurity with respect to, an individual; and
    e. The availability and affordability of consumer devices and technical support for those devices.
3. An assessment of how the measurable objectives identified in item 2 above will impact and interact with the State's—
    a. Economic and workforce development goals, plans, and outcomes;
    b. Educational outcomes;
    c. Health outcomes;
    d. Civic and social engagement; and
    e. Delivery of other essential services.
4. In order to achieve the measurable objectives identified in item 2 above, a description of how the State plans to collaborate with key stakeholders in the State, which may include—
    a. Community anchor institutions;
    b. County and municipal governments;
    c. Local educational agencies;
    d. Where applicable, Indian Tribes, Alaska Native entities, or Native Hawaiian organizations;
    e. Nonprofit organizations;
    f. Organizations that represent—
        i. Individuals with disabilities, including organizations that represent children with disabilities;

ii. Aging Individuals;
iii. Individuals with language barriers, including—
1. Individuals who are English learners; and
2. Individuals who have low levels of literacy;
iv. Veterans; and
v. Individuals in that State who are incarcerated in facilities other than Federal correctional facilities;

g. Civil rights organizations;
h. Entities that carry out workforce development programs;
i. Agencies of the State that are responsible for administering or supervising adult education and literacy activities in the State;
j. Public housing authorities in the State; and
k. A partnership between any of the entities described in clauses (a) through (k).

5. A list of organizations with which the Administering Entity for the State collaborated in developing the Plan

In addition to the above requirements, the State Digital Equity Plan developed with planning grant funds shall, at a minimum, include the following ("Additional Requirements"):

1. A stated vision for digital equity;
2. A digital equity needs assessment, including a comprehensive assessment of the baseline from which the State is working and the State's identification of the barriers to digital equity faced generally and by each of the covered populations in the State;
3. An asset inventory, including current resources, programs, and strategies that promote digital equity for each of the covered populations, whether publicly or privately funded, as well as existing digital equity plans and programs already in place among municipal, regional, and Tribal governments;
4. To the extent not addressed in connection with item 4 of the SDEPG NOFO, Section IV.C.1.b.i, a coordination and outreach strategy, including opportunities for public comment by, collaboration with, and ongoing engagement with representatives of each category of covered populations within the State and with the full range of stakeholders within the State;
5. A description of how municipal, regional, and/or Tribal digital equity plans will be incorporated into the State Digital Equity Plan;
6. An implementation strategy that is holistic and addresses the barriers to participation in the digital world, including affordability, devices, digital skills, technical support, and digital navigation. The strategy should (a) establish measurable goals, objectives, and proposed core activities to address the needs of covered populations, (b) set out measures ensuring the plan's sustainability and effectiveness across State communities, and (c) adopt mechanisms to ensure that the plan is regularly evaluated and updated;
7. An explanation of how the implementation strategy addresses gaps in existing state, local, and private efforts to address the barriers identified pursuant to Section IV.C.1.b.i, item 1, of the SDEPG NOFO;
8. A description of how the State intends to accomplish the implementation strategy described above by engaging or partnering with:
    a. Workforce agencies such as state workforce agencies and state/local workforce boards and workforce organizations;
    b. Labor organizations and community-based organizations; and

   c. Institutions of higher learning, including but not limited to four-year colleges and universities, community colleges, education and training providers, and educational service agencies;
9. A timeline for implementation of the plan; and
10. A description of how the State will coordinate its use of State Digital Equity Capacity Grant funding and its use of any funds it receives in connection with the Broadband Equity, Access, and Deployment Program, other federal or private digital equity funding.

6.2 Appendix B – Summary of Public Comments

Comment #	Organization	Summary of Comment	DOM Response
1	Easterseals	Easterseals Iowa promoted their Assistive Technology Program that works with Iowans to learn about and access the assistive technology they need to learn, work, play, and participate in community life safely and independently. Easterseals appreciated the opportunity to be part of the planning process and "support this plan and project to increase access for all Iowans" including participation in the Coordinating Council. Easterseals emphasized the importance of providing individual choice for Iowans with disabilities and older Iowans. Easterseals Assistive Technology Center Lending Library service delivery model was noted as a possible implementation approach.	Easterseals participated in facilited sessions regarding the Individuals with Disabilties and Aging Covered Populations. This comment reiterates Easterseals interest in the importance of digital devices and digital skills. Easterseals has indicated an interest in staying involved in implementation efforts for Digital Equity in Iowa and will be a valued member moving forward. DOM appreciates the comment. No change to the Plan needed based on this comment.
2	Citizen	Citizen described a lack of connectivity as a problem in their rural area. They stay connected via a cellular plan that is expensive to maintain and they constantly check data usage to ensure they are not violating data caps. That means no streaming services.	This is a citizen comment on the availability, reliability, and affordability of broadband internet in rural areas, specifically this individual's home. This was a theme heard regularly during the public meeting tour. The Digital Equity Plan speaks to all three issues extensively throughout the plan and specifically in the goal section and the rural residents Covered Population section. No change to the Plan needed based on this comment.

Comment #	Organization	Summary of Comment	DOM Response
3	Iowa Primary Care Association	Iowa Primary Care Association (Iowa PCA) represents thirteen federally qualified health centers and a migrant farm worker health center. Eighty-eight percent of their patient population is under 200 percent of the federal poverty level and nineteen percent of our patient population is uninsured. Technology (such as access to patient portals, remote monitoring devices, and virtual care), advances in healthcare, and digital equity are vitally important for patients of Iowa's community health centers. Community health centers can be a key partner in ensuring access to digital devices, tools, and support. By developing trusted relationships with the covered populations and community partners defined in the Digital Equity Plan, community health centers are essential to support this work. The vision of the Digital Equity Plan aligns with the Iowa Primary Care Association's vision of health equity for all, and the benefits outlined in section 4.2.3 support the mission of the Iowa PCA - to enhance community health centers' capacity to care. Iowa PCA outlined "several clear opportunities to support the goals of this plan through partnership" including Wi-Fi hotspot checkout programs, partnerships with community health centers, emphasizing the importance of the No Wrong Door System (Strategy 4c) to align with other state activities, supporting multiple modes of digital skills training, developing a digital navigator network in the state, and improving online accessibility. The letter closes with "the Iowa Primary Care Association would be a valuable and engaged partner in developing innovative and impactful strategies to ensure digital equity in our state."	The Iowa Primary Care Association submitted a thorough comment in support of the goals of the Digital Equity Plan, particularly as they relate to Iowans accessing telehealth. Iowa Primary Care Association will be an important partner in building digital equity programming as we move forward, particularly with respect to telehealth. DOM looks forward to engaging Iowa PCA in implementation work moving forward. No change to the Plan needed based on this comment.
4	Benton Institute	The Benton Institute shared research on the importance of a Vision statement in digital equity plans.	The Benton Institute provided Digital Equity planning materials for consideration as the office moves forward with visioning and plan implementation. No application or analysis was provided on Iowa's Vision. No change to the Plan needed based on this comment.

Comment #	Organization	Summary of Comment	DOM Response
5	Education Superhighway	The Education Superhighway submitted multiple pages of proposals about focusing on the Affordable Connectivity Program with model language on how to work on increasing ACP adoption in the future.	The Plan discusses the ACP in depth with a plan for Iowa to achieve parity with the national average. The language in the Plan reflects the sentiments of the planning group and therefore DOM did not incorporate the model language suggested by ESH. No change to the Plan was made in response to this comment.
6	Human-I-T	Human-I-T provided a national-level broad perspective on the importance of digital navigations, digital skills, and establishing trusted relationships with community institutions. The national perspective was not applied to any specifics in Iowa's Plan but rather a best practices comment.	The comments provided are consistent with the goals and objectives of Iowa's Digital Equity Plan. No change to the Plan was made in response to this comment.
7	Environmental Health Trust	The Environmental Health Trust submitted a 42-page comment addressing a broad range of health concerns related largely to wireless technologies and impacts on health.	DOM will continue to engage our health care planning partners as necessary as we work through digital equity issues. No change to the Plan was made in response to this comment.

Comment #	Organization	Summary of Comment	DOM Response
8	Community Broadband Action Network	The Community Broadband Action Network provided various policy recommendations proposing a State-funded program to replace the federal ACP, proposing amendment of Iowa Code to allow municipal providers to charge different rates based on demographics, suggesting that Iowa create a state-run provider-funded programs to replace the ACP that could be used to support disadvantaged populations, a proposal to expanding a device ecosystem, and a suggestion related to expansion of digital navigator programs.	CBAN was an active partner throughout the planning process and brought great ideas to the planning process, as currently reflected in the plan. Many of the ideas in the comment letter spoke to tactics DOM could take during implementation activities. DOM will continue to work with CBAN throughout implementation on these and other ideas over the course of the implementation performance period. However, due to the nature of the comments (tactics vs more broad objectives, some beyond the scope of the Plan's authority) we did not make any changes in the Plan document but will look to CBAN to continue their involvement during the implementation phase.
9	Iowa State University	ISU noted that the plan was solid and comprehensive and provided thoughts as to how ISU could participate and/or contribute to the effort. Their ideas included ISU extension offering courses, cybersecurity expertise, including indoor/outdoor public wireless in the ISU/Ames area, sharing research in Rural Broadband, and partnering with Extension for outreach options to increase enrollment in the Affordable Connectivity Program.	Iowa State University and Iowa State Extension played an important role as a partner in developing the plan. Their partnership will be instrumental moving forward and this comment from ISU offered potential partnership opportunities. No change to the Plan was made in response to this comment.

6.3 Appendix C - Digital Device Ecosystem Roadmap

DOM worked with Connected Nation and Digitunity to better understand how to create a “Digital Device Ecosystem” in Iowa. The following document will serve as a reference for DOM in tackling this challenge. Note that the document is self-contained with new page numbers in the lower left-hand corner.

A Roadmap to a Sustainable Statewide Device Ecosystem for the State of Iowa

DIGITUNITY®
DIGITAL OPPORTUNITY NETWORK

CONNECTED NATION®

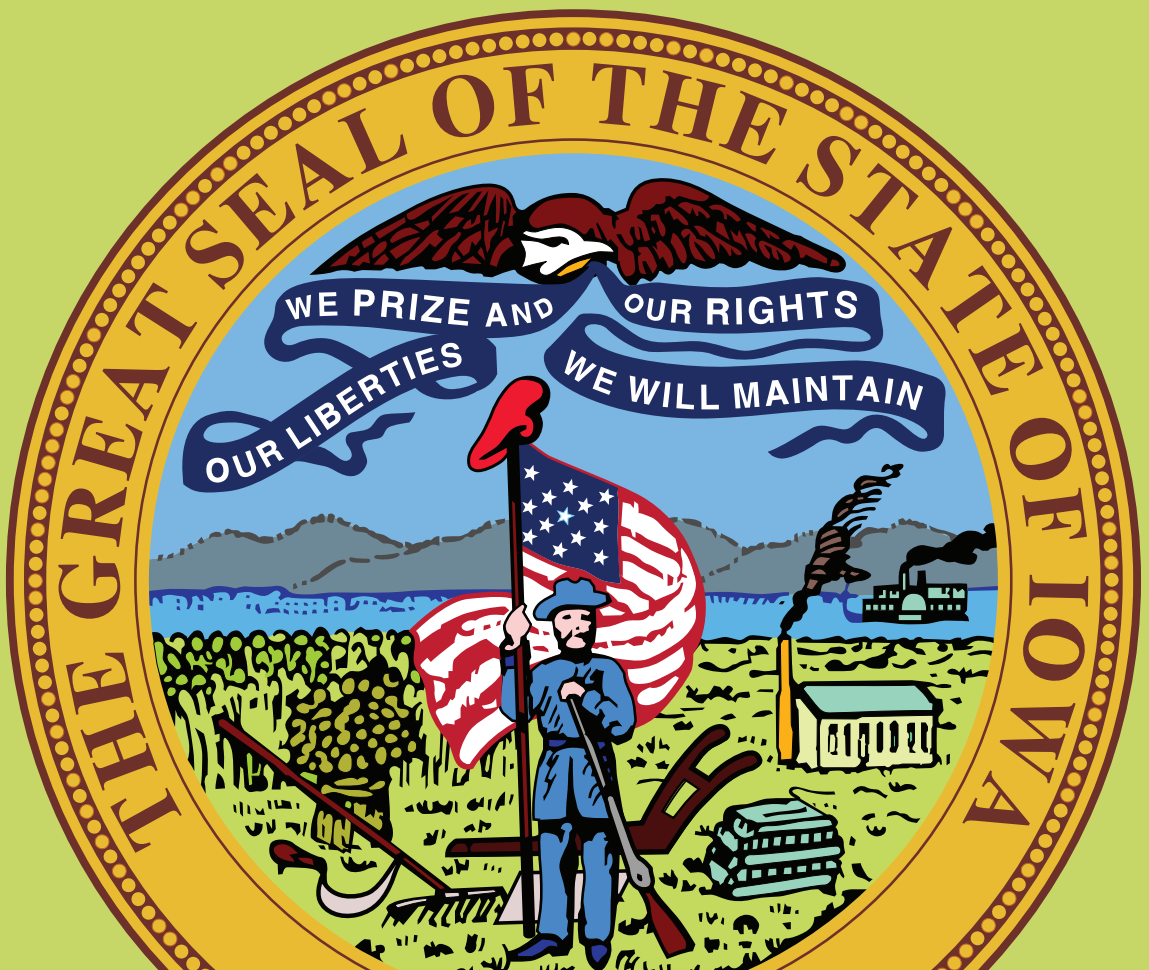


Table of Contents

Summary of Findings

The device roadmap charted for the State of Iowa is more than a series of directions; it represents a comprehensive strategy to harness the power of an ecosystem. This roadmap is a guide that goes beyond the mere distribution of devices — it aspires to establish a thriving, sustainable, and healthy ecosystem.

The State of Iowa, as outlined in its Digital Equity Plan draft, has set two ambitious Measurable Objectives regarding devices. These objectives include reducing the number of households without sufficient devices by 50% by the end of 2029 (equating to 75,000 households) and distributing 75,000 refurbished or donated devices, laying the groundwork for a robust device ecosystem.

At the heart of this work are four fundamental principles: a reliable supply, high quality preparation, effective deployment, and monitoring of the ecosystem's health. These principles also form the four strategic goals of the roadmap:

1. *The State of Iowa will have a highly effective, sustainable, and healthy device ecosystem that effectively serves residents within Covered Populations*
2. *The State of Iowa will have a reliable supply of free and low cost, large screen devices, both new and previously used, that meet quality and use case requirements for residents*
3. *The State of Iowa will have partners that can prepare free and low cost devices for residents*
4. *The State of Iowa will have community-level deployment systems to make devices available to Covered Populations, integrated with essential services*

The Three-Year Digital Roadmap for Iowa

The roadmap begins with the anticipation of surpassing the initial goal of lowering the number of households without a device by 50%, with system efficiencies playing a pivotal role. A three-year plan is set in motion, with a strategic outlook extending over five years. The model anticipates a steady state after year three, marked by continuous improvement.

While not captured in a specific measurable objective in the Plan, fostering the development and monitoring the health of a sustainable device ecosystem should, in itself, become a Measurable Objective. Doing so not only identifies it as a specific effort to monitor, it also cements the ecosystem concept as a key construct of the Plan.

A device ecosystem takes shape in three phases:

1. ***Discovery and Socialization:*** *This initial phase involves exploration, analysis, and socializing the ecosystem concept. It's a period of laying foundations and fostering shared understanding.*
2. ***Integration and Formalization:*** *The second phase focuses on integrating, coordinating, and formalizing the ecosystem. This is where alignment of resources becomes paramount for seamless functionality.*
3. ***Ongoing Monitoring and Growth:*** *The third and perpetual phase involves continuous monitoring, scaling, realization of efficiencies, and ensuring adaptability and sustained progress.*

The roadmap draws inspiration from Digitunity's forty years of digital inclusion experience, as well as common themes found within dozens of other state Digital Equity Plans. Key themes include: awareness, capacity building, collaborative efforts, community anchor institutions, comprehensive strategies, device affordability, digital skills training, diversifying funding, equitable access, program evaluation and adjustment, public access, role of digital navigators, rural needs, sustainability, and tailored strategies for Covered Populations.

Nine key categories of entities have been identified as being instrumental to the success of this endeavor. These categories include: businesses; labor organizations; community anchor institutions; Iowa's cooperative extension; state, county, and municipal government; education agencies including k-12 and postsecondary education; media; nonprofit organizations or agencies serving covered populations; philanthropy, and Iowa residents.

As the state embarks upon this journey to establish a resilient, adaptable, and sustainable device ecosystem, additional analysis, relationship cultivation, and strategic decision-making will be required to determine next steps. History and experience has clearly shown that the transactional approach of buying devices and distributing them to organizations that serve Covered Populations is not effective or sustainable. This roadmap's primary goal is to ensure a cost-effective, high quality, and sustainable system for obtaining a device is available for residents of Iowa, both today and long into the future.

Introduction

Device ownership is a crucial aspect of digital equity. Those without a computer are unable to harness the vast opportunities that the internet provides, such as employment, education, telehealth, commerce, finance, communication, and much more.

This document serves to support device-related efforts by providing an analysis of device themes found within state and territory plans published for public comment to date, an exploration of the wide array of strategies that states and territories plan to employ, and Digitunity's suggestions for how all states and territories could establish sustainable device ecosystems that meet the ongoing device needs of residents.

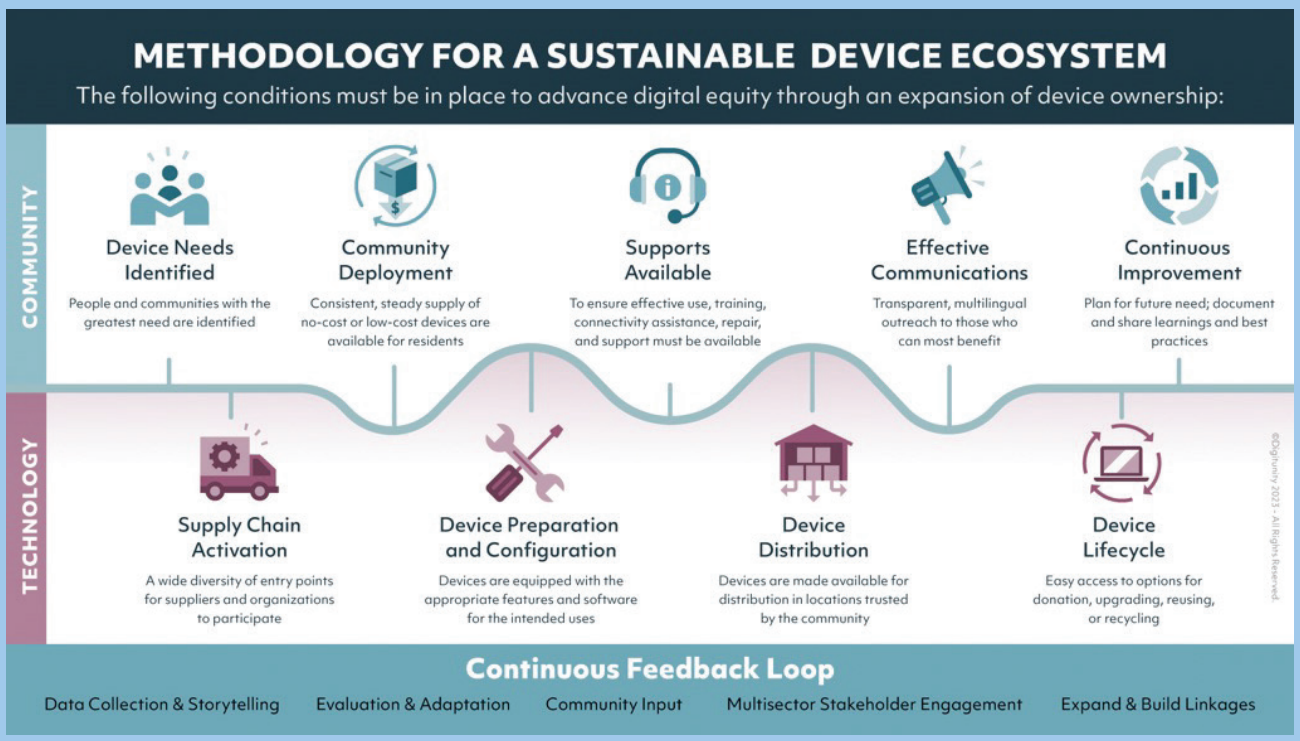
This "ecosystem" approach aims to meet the ongoing device needs of Covered Populations by allowing for a diversity of individuals and organizations to work collectively within an interconnected system dedicated to equitable device ownership. Information provided in this document is largely informed by Digitunity's experience as an independent national actor with a mission to make owning a computer possible for everyone. Digitunity's subject matter expertise in increasing device access for people who have been historically marginalized has been shaped by its support of and learning from its Digital Opportunity Network℠, a national practitioner network consisting of over 1,600 frontline community organizations.

A Sustainable Device Ecosystem

Iowa's Digital Equity plan calls for the organization of a device ecosystem, defined herein as a system that combines a robust supply of free and affordable devices with accessible community-level distribution systems and readily available supports (including technical support and digital literacy instruction) via the combined efforts of a diverse range of actors and stakeholders.

There are four practical areas that need intentional focus so that they can work together for an effective and impactful device ecosystem. They include:

1. *Supply: A robust, reliable supply of high quality, free and low-cost, internet-capable devices that meets the needs and intended uses of residents*
2. *Preparation: The means to ready devices for residents, paired with an effective distribution system that supports the movement of devices throughout the ecosystem*
3. *Deployment: Community-level systems of deployment that reach Covered Populations and are integrated with essential services including digital skills training, internet connectivity, and technical support*
4. *Ecosystem health: A sustainable approach, both systemically and environmentally, with the goal of a long-term ecosystem that is not solely reliant on inconsistent outside funding sources*



The graphic above illustrates the conditions to be met for a sustainable device ecosystem to develop and thrive.

Key Principles

The following are some overarching, key principles that must be in place for an effective, community-based device distribution and deployment ecosystem.

1. ***Large screen device ownership:*** *Large screen devices such as laptops, desktops, Chromebooks, and tablets, are critical for a full and equitable computing experience. While smartphones are often more affordable than the upfront cost of a computer, evidence shows the use of smartphones alone may limit the range of one's online activity and depth of overall digital skills.*
2. ***Sustainability:*** *While short-term gains are possible, collective efforts for sustainable strategies and solutions that outlast this five-year federal investment are paramount.*
3. ***Device quality and intended use:*** *Affordable devices must be reliable and match a recipient's intended use and context. While less expensive devices may be a quick win within a limited budget, a healthy device ecosystem will provide economical solutions that meet the full range of recipients' needs.*

> **"Personal device ownership provides a unique computing experience that cannot be replicated through public use of computers or shared devices."**
>
> ***Gonzales, 2021***
>
> https://digitalopportunity.network/resource-hub/research/the-importance-of-large-device-ownership/

The State of Iowa's Digital Equity Plan and Devices

OVERVIEW

The State of Iowa Digital Equity plan addresses statewide device issues in "Goal 4: Availability and Affordability of Devices and Technical Support." It aims to "organize a 'device ecosystem,' which includes supply of material, refurbishing, and distribution." The goal is divided into three strategies:

1. ***Strategy 4a:*** *Inventory the current device access locations and device distributors serving covered populations in Iowa and publicize that information via an asset inventory webpage*
2. ***Strategy 4b:*** *Develop, launch, and manage a program to provide devices to eligible Iowans*
3. ***Strategy 4c:*** *Explore the feasibility of including technical assistance for "device issues" and requests for digital devices to the resources available through Iowa's No Wrong Door (NWD) system*

The Plan goes on to identify the following device-related measurable objectives:

- A 50% reduction (6% overall, an estimated 150,000 households) of respondents that say they don't have enough devices in the home in the statewide survey by the end of 2029
- Establish a device ecosystem and distribute 75,000 refurbished or donated devices to Iowans by the end of 2029
- A 10% increase in digital skills confidence in the state-wide survey (defined as the change in response rate from those who responded with "not familiar with terms or tasks" or "don't know how to do this" to "can do, but not well" or "can do well" plus any measurable increase from "can do, but not well" to "can do well")
- Iowans will have access to a system of over 250 digital skills information desks and/or kiosks
- At least 50,000 Iowans will receive some type of digital skills training (online and/or in person) training through the statewide digital skills curriculum

Additionally, Iowa's Plan identifies specific Covered Populations and lays out considerations for device adoption with regard to these groups:

- **Aging individuals:** Create a tech support hotline or hub to take calls from people with tech issues. Create standards for people who take calls, potentially providing training or certification, and work with companies with tech-savvy individuals to volunteer hours. Create inventory of where people can go for in-person help as a reference for callers to use. Investigate the potential of a program structure similar to the Iowa Cafe program through Iowa's Area Agencies on Aging, but for tech support rather than meals. *(IA plan, page 105)*
- **Covered households (less than 150% of the federal poverty level):** Develop a device ecosystem with a focus on providing eligible households, particularly those enrolled in other state-assistance programs, enough digital devices to support all members of the household. Create a mobile IT desk to provide training and support for individuals to access a one-stop source to solve digital device issues. One solution may be adding digital device support to Iowa's No Wrong Door system. *(IA Plan, page 110)*
- **English Language Learners:** Investigate electronic sign language translation service software and how to utilize emerging technologies to allow for hearing impaired individuals to better use digital devices. Expand the Iowa Utility Board's Telecommunications Access Iowa program to include devices for all English Language Learners. *(IA Plan, page 121)*
- **Individuals with a disability:** Develop a standardized assessment process to understand individual hardware needs for individuals with disabilities. *(IA plan, page 125)*
- **Incarcerated individuals:** Create a device ecosystem that provides incarcerated individuals with donated devices, similar to the Des Moines Area Community College model, to increase the number of available devices. Once the incarcerated individual earns release, allow the individual to take their device with them to retain records, such as classwork, and have a device to use. *(IA plan, page 128)*
- **Rural residents:** Help promote a digital device helpline through Iowa's No Wrong Door system, particularly important to rural communities that do not have an in-person resource within a reasonable distance. *(IA plan, page 100)*
- **Veterans:** Work with the VA to incorporate mandatory training on how to use VA-issued devices and apps at the time of device distribution. *(IA Plan, page 112)*

Key Learnings from a National Scan of State Digital Equity Plans

Based on a thorough analysis of 41 draft state and territory digital equity plans published for public comment, Digitunity has identified a number of common themes among them. It should be noted that at the time of publication, only draft digital equity plans were reviewed for this paper.

Predominant device-related themes across all plans, along with individual examples and Iowa-specific context, include:

1. **Awareness:** Building awareness is a theme that is prevalent among state and territory plans. It includes being sure that residents are informed about the services and opportunities available to them, and putting effort into awareness-building among businesses, government, and philanthropy so that those sectors understand the needs of the community and have the opportunity to support those needs. Plans referenced utilizing a variety of channels for awareness-building, and including multilingual and assistive support. One of the strategies within the Arkansas plan provides an example of awareness-building, where they intend to "establish a device refurbishment campaign with corporate, philanthropic, and workforce partners across the state." Similarly, Florida aims to "increase outreach to promote affordable device availability programming."

   In Iowa's plan, a key aspect for ensuring that residents have seamless access to digital equity services is the utilization of the state's "No Wrong Door" (NWD) approach. Iowa plans to "organize the information or hotline resources [regarding digital inclusion services] to be offered through Iowa's NWD." Efforts to conduct a statewide Cybersecurity Awareness Campaign is one of the ways that the state plans to reach residents. A similar statewide awareness campaign addressing the need for donated technology would help jumpstart the state's device ecosystem and ensure that available device-related services are integrated in NWD. A feedback loop on how this process is functioning is important to understanding and adapting messaging and awareness-building activities.

2. **Capacity building:** Throughout the plans reviewed, there is widespread focus on building capacity throughout the device ecosystem. Strategies include investing in and enhancing the capabilities of local organizations and communities. There is also interest by many states in working with subject matter experts to support successful implementation. Utah's plan, as an example, aims to potentially allocate 10% of its Digital Equity Act funding "towards supporting and codifying programs that refurbish and distribute devices; supporting innovative efforts to broaden the impact of device lending and public computer access; and requiring cybersecurity resources or education to be tied to all device distribution programs." Likewise, Delaware intends to "expand capacity of nonprofits to address device access, tech support, and device repair."

   In its plan, Iowa has noted that it "is unaware of a certified entity within the borders of the state that refurbishes devices that can serve statewide needs. In order to close the gap with regards to digital devices in the state, the refurbishment of devices stands as a critical piece to connect potential supply of devices from private business and public entities to the demand of Iowans in need of support." Identifying such a gap in the ecosystem will help stakeholders determine where to focus grantmaking efforts, what additional resources may be needed to build capacity, and what the most critical first steps may be in plan implementation.

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3. **Collaborative efforts:** Public-private partnerships, community engagement, and collaborations with internet service providers, philanthropy, government, and businesses are frequently mentioned throughout the plans. The emphasis on intentional collaboration underscores the recognition that achieving digital equity requires concerted efforts from a wide range of stakeholders. DC's Digital Equity Plan highlights the importance of partner diversity. "The digital divide cannot be closed without engaging a range of stakeholders. Such engagement may include collaboration between public, private and philanthropic organizations to execute sustainable, potentially transformative efforts that foster digital equity (e.g., a DC tech hub, omni-channel tech support, a break/fix ecosystem, and device-loan and distribution programs)." Pennsylvania's plan suggests a possible benefit of this kind of collaboration in the form of device supply. "Partnerships with industries that often cycle their devices, like banks or universities, and connecting with device refurbishment businesses, help continue the life cycle of otherwise defunct or unwanted devices and help get them into the hands of those who need them most."

   As noted in its plan, one of the ways that Iowa plans to do this is "by working with institutions and businesses to capture a portion of the devices that cycle through their device replacement system, pass them through a certified refurbishing process, and distribute through trusted distribution points, qualifying Iowans can obtain necessary devices." Iowa stakeholders may wish to recruit private sector partners to explore using existing help desk systems to supplement the No Wrong Door system related to digital technology.

4. **Comprehensive strategies:** A predominant theme is how states and territories plan to adopt a broad and comprehensive approach to expanding device ownership among Covered Populations, integrating various initiatives such as partnerships, affordability programs, awareness campaigns, and leveraging funding opportunities. These multifaceted strategies acknowledge the complexity of digital equity challenges, the need for a diverse set of solutions, and striving for the goal of sustainability. North Carolina's plan serves as an example of how a state is taking a broad, comprehensive approach to establishing and investing in a sustainable device ecosystem. Likewise, Nevada specifically aims to "create a sustainable device ecosystem that identifies a technology supply chain and manages the procurement, refurbishment, configuration, outreach, distribution and technical support of devices for low-income Nevadans." Iowa plans to "establish a device ecosystem that aims to deliver devices to qualified individuals. Device programming has a history of success in Iowa, but in isolated and one-time offers." In taking an ecosystem approach, and examining all the components in an ecosystem that need to be in alignment, including supply, preparation, deployment, and sustainability, Iowa will be well positioned to meet the ongoing device needs of residents.

5. **Community Anchor Institutions (CAIs):** Many plans emphasize the important role of libraries, community centers, and educational institutions in providing public access to devices. CAIs are seen as vital hubs for digital resources, skills training, and device lending programs that states are interested in investing in. As an example, Maine's plan identifies libraries and other CAIs as "core digital inclusion partners" and intends to fund a program that will "invest in facilities that support education, workforce, telehealth programming and public access to the internet, devices, and digital skills." Likewise, Idaho's plan strongly leverages the role libraries play in communities and includes activities such as developing "libraries as anchor institutions of local communities to improve device availability and affordability" and increasing "the number of devices available for use at public libraries or that can be checked out."

   In its plan, Iowa noted how CAI's play important roles in helping residents access essential services. Beyond access and loaning of devices, CAI's can be leveraged as trusted community partners that can identify residents in need of a device, provide space and staff to deploy, refurbish and/or repair devices, and donate used devices themselves for refurbishment.

6. **Device affordability:** Recognizing the fundamental role of affordable devices, most plans prioritize strategies that target the cost of devices, making them more accessible to individuals within Covered Populations. This theme emphasizes the importance of reducing financial barriers to device ownership. In its plan, Hawaii aims to create a statewide device discount program by 2026. New Jersey also targets affordability in their device strategy, intending to "provide funding (directly or through existing programs) to subsidize the cost of devices for Covered Populations" over the short term, and to "facilitate partnerships between and among public, nonprofit, and private organizations to increase the affordability of devices (e.g., via donations, match programs, or public-private partnerships) – with emphasis on reaching low-income households, non-English speaking households, and individuals with disabilities" over the long term.

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As noted in Iowa's plan, "the affordability of devices surfaced in conversations at almost every meeting during conversations about accessibility, affordability, and digital skills, underlining the interconnectivity of all facets of digital equity." Identifying sources of free and low cost devices can be part of the path toward increasing device ownership. However, a more holistic approach is needed to bring together various sources of funding, use cost-effective solutions such as refurbished devices to stretch funding to serve more people, and identifying systems efficiencies will help to address the affordability of devices.

7. **Device Metrics:** There is a wide range of approaches to measuring the effectiveness of device strategies. Broadly, states are setting device-related goals and plan to collect data and measure progress, both for residents in general and specifically for Covered Populations. The following is a list of some of the most common KPIs found among these plans:

- **Percentage of residents that own devices that meet their needs.** The most common device-related measurements found in plans relate to increasing the number of residents or households that own devices that meet their needs. This metric is not a measure of the number of new devices made available, it is instead a measure of how many residents report that they have access to the devices they need. More specific goals and metrics, such as lowering the percentages of "underdeviced" households or individuals who solely use a smartphone are often built into this category as well.
- **Percentage of residents confident with using technology.** This metric captures the availability of digital skills training (in person or online). Baselines in plans were often determined by population surveys that polled the confidence of residents with various online tasks, and goals were set that would factor in the increase in the digital confidence of residents.
- **Percentage of residents with access to repair services.** This metric generally intends to determine the technology repair needs of residents, surveying their proximity to and awareness of technology repair locations.
- **Percentage of residents with access to help desk support.** This metric found in many plans aims to determine the help desk needs of residents, surveying their access to and awareness of support options that are available.
- **Percentage of residents enrolled in ACP.** It is notable that most plans made specific mention of ACP, set goals regarding ACP adoption, and identified it as a key effort to measure. Given that ACP funds are projected to run out in May of 2024, states will need to adjust their plans and strategies accordingly.

8. **Digital skills training:** The frequent and recurring emphasis on digital skills training within state and territory plans underscores the fact that connectivity and device ownership are just part of the solution. Individuals within Covered Populations need the skills to navigate and utilize digital resources effectively. In its plan, Kentucky takes a broad approach to help residents "develop the digital skills necessary for work and life" by offering assessments and certifications, incorporating digital skills training into existing training and workforce development programs, integrating digital skills "along the education continuum from preschool to post-secondary" education, and increasing participation in telehealth services.

   Iowa's goal to "develop a culturally responsive, robust and sustainable learning model to implement statewide and at the local level" will help to ensure greater device adoption as digital skills learning opportunities are increasingly made available. It is critical that those interested in engaging in digital skills training programs have appropriate devices, and that a connection between the digital skills learning model and device ownership is established.

9. **Diversifying funding:** Many plans focused not only on funds made possible by the Digital Equity Act, but also extended to the introduction of state incentives for encouraging technology donations or ACP-like subsidy programs for devices. In its plan, California seeks to leverage a wide range of funding sources "to expand impact and catalyze additional opportunities for sustainable resourcing once one-time funding from the federal government is exhausted." Those sources include existing state programs, local funding, philanthropy, private sector investments, and "priority area funding sources" such as Workforce Investment Act funding.

   The suggestion from an Iowa digital equity stakeholder meeting to "develop a device ecosystem with a focus on providing eligible households, particularly those enrolled in other state-assistance programs, enough digital devices to support all members of the household" points to the opportunity to integrate additional funding sources to support the state's device ecosystem beyond the federal investment. Understanding an individual's participation in social service and employment programs such as SNAP and WIOA may allow for their eligibility to purchase a device.

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10. **Equitable access:** All plans have the overarching goal to ensure that individuals from Covered Populations have access to digital resources and opportunities, including devices. In order to do so, a wide range of strategies will be employed by states and territories to eliminate barriers to device ownership and digital participation. The Texas Digital Equity Plan, for example, articulates a multifaceted approach to ensuring equitable access to digital resources and opportunities. Underserved populations would benefit from initiatives like the Texas Technology Access Program (TTAP) and the Inmate Tablet Program to aid underserved populations, which emphasize improving digital literacy, expanding device access, and ensuring reliable internet connectivity. The plan also focuses on enhancing the digital skills necessary for economic competitiveness in rural areas through strategic partnerships and targeted programs. It also proposes expanding broadband adoption, subsidizing internet access, and working with state agencies and statewide partners to advance digital opportunity.

    In its plan, Iowa aims to "inventory the current device access locations and device distributors serving covered populations in Iowa, including agencies that are providing free phones, tablets, assistive technology lending libraries, hotspot check-outs, etc." An analysis of this inventory can then identify service and geographic gaps where investment and additional resources are needed.

11. **Program evaluation and adjustment:** There's a clear recognition of the need for continuous assessment and improvement throughout all of the plans. Regular evaluations are mentioned frequently within plans to ensure the effectiveness of programs and to make improvements based on evolving needs. In its plan, Michigan takes a unique approach to evaluating the efficacy of device programs by establishing a "device distress score" for each Covered Population and monitoring progress on an annual basis. The score includes the percentages of homes without a device, homes with only a smartphone, and homes with an insufficient number of available devices.

    Iowa's approach to continuous improvement includes "evaluating supply and demand for digital devices, surveying recipients to better understand their needs and longevity of devices, evaluating usage of technical assistance resources, and tracking progress toward device distribution goals." These measures will provide information that can be utilized to monitor progress. Next steps might include setting data capture processes, planning for how to make timely adjustments, and consideration of the development of an additional ecosystem health measure, as a means to monitor ongoing progress.

12. **Public access:** A number of plans highlighted public computer labs, particularly in libraries, where individuals can access the internet and use devices for various purposes. Data from public surveys indicated interest among residents in public access, and states have included it as a component of an overall device strategy. Some states and territories intend to invest in the expansion of public device access as well as loaning programs. It was generally acknowledged that such public access programs aim to bridge the digital divide by allowing individuals to borrow devices, such as laptops or tablets, for a specified period with the goal of having a pathway to ownership. Georgia specifically targets boosting public access programs in their plan, aiming for "a targeted 20 percent of Anchor Institutions serving Covered Populations will expand ready device access through lending programs and enhanced public computer labs" by 2027.

    Iowa's Digital Equity Plan makes several mentions of public libraries, colleges, and nonprofit organizations offering public access computers. While device ownership is the goal, public access is a necessary component of a device ecosystem, especially for those without homes. Additional planning for expanding or improving public access computers may be needed, such as expanded hours both for access and use. Clear information on how to acquire and own a computer should also be made available to residents in public access device locations.

13. **Role of Digital Navigators:** Several state and territory plans highlight the pivotal role that Digital Navigators play in providing ongoing support and offering guidance, so that residents gain access to digital resources and receive the support needed for sustained digital participation. Through the Arkansas Digital Skills and Opportunity Plan, for example, community partners would be trained as "Digital Connectors" and provided with comprehensive support from securing internet services to troubleshooting devices to utilizing key digital tools. The plan aims to enhance digital proficiency among residents by integrating resources like Northstar Digital Literacy, enhancing essential digital skills for personal and professional development.

    Outlined in the Iowa Digital Equity Plan is the goal to "develop a network of in-person Digital Navigators located across the state." Digital Navigators can serve to connect residents to device ownership and access options. However, they may not be trained or equipped to provide technical support. Digital Navigators can make significant contributions to a device ecosystem to ensure that residents who face barriers have the support to overcome them. It is important that Digital Navigators are aware of and kept up to date on the device services available.

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14. **Rural needs:** Many plans acknowledge the unique challenges faced by rural areas, and include the goal of establishing tailored initiatives to address these specific needs. This theme reflects an understanding that urban-centric solutions may not adequately address the digital divide in less populated or remote regions. Alaska's Digital Equity Plan, for instance, proposes partnering with post-secondary and technology institutions to develop a training program for refurbishing and repairing devices. In order to provide rural residents with access to devices that enable digital participation, an audit of rural refurbishment resources will be conducted within 24 months and a training program is proposed to begin by 2027.

    Findings from focus groups in Iowa's planning process show that rural residents encompass a mix of members from all of the Covered Populations. A variety of needs were shared from acquiring a wide range of digital skills, using many methods of communication, building trust, and wanting "amenities and conveniences, but may not want to turn into urban centers." Continued engagement of rural residents is important as well as working through partner organizations that work with rural communities. It is critical to understand the unique assets and challenges of a rural community to ensure that the pathway to device ownership is effective and sustainable.

15. **Sustainability:** The theme of sustainability is clear, as plans aim to create resilient device ecosystems, ensuring the impact of digital inclusion initiatives endures over time. Many plans also refer to environmentally sustainable practices, such as device recycling programs. Repurposing, refurbishing, and recycling devices contribute to environmental sustainability. With the Washington Digital Equity Plan, sustainability is emphasized by integrating environmental sustainability practices and systemic sustainability practices. In order to support device procurement and digital inclusion programs, the plan prioritizes user feedback, end-of-use support, and responsible recycling. It also explores expanding a statewide device-recycling program, involving community institutions like public libraries and schools in recycling efforts. The plan also emphasizes technology reuse, robust technical support, and outlines practical aspects—supply, preparation, deployment, and ecosystem health.

    Iowa's digital equity plan notes that "sustainability takes a level of coordination with Iowans to better understand shifting needs of communities and adapt programming to meet those needs. In order to accomplish this, DOM (Department of Management) will look to continue to convene a 'Coordinating Council' made up of representation from covered populations and experts in the facets of digital equity." Leadership and ongoing stakeholder engagement is a fundamental aspect of ensuring sustainability, and Iowa may wish to consider forming a device-specific sub-committee to ensure continued focus.

16. **Tailored strategies for Covered Populations:** Universally, state and territory plans acknowledge the broad diversity of challenges that are faced by different segments of the population and in different regions. States and territories are tailoring strategies and solutions to their residents' specific and unique device needs. This extends to assistive technologies. For example, Puerto Rico's Digital Equity Plan specifically highlights understanding and addressing the unique challenges faced by residents with disabilities. These individuals encounter not only the common barriers to digital access experienced by the general population but also require special adaptive technologies to overcome limitations in mobility, hearing, and interaction with devices. The plan commits to a "comprehensive study to determine the extent of these needs within the population," part of a dedicated effort to enhance digital inclusivity. By 2026, it envisions the provision of affordable, adaptive accessories, ensuring that residents with special needs have the tools necessary for personal and professional advancement.

    Iowa plans to "convene covered population stakeholders to determine the scope of assistance that could be provided through Iowa's No Wrong Door system." Covered Populations have specific and unique device, peripheral, and support needs, and having opportunities to expose these needs is important. Not only are the needs able to be identified, but readily available resources and support can help to drive digital adoption.

A Sustainable Device Ecosystem Roadmap for the State of Iowa

GOALS, OBJECTIVES, AND ACTIVITIES

Iowa's overarching device-related goal in its Digital Equity Plan is to establish a sustainable device ecosystem that ensures access to computers for residents within Covered Populations. It includes a focus on collaboration, comprehensive strategies, alignment with broader goals, and addresses the supply, preparation, and deployment of devices. Iowa's Plan draft identifies two measurable objectives related to devices:

1. *Reduce by 50% the number of respondents that report that they don't have enough devices in the home by the end of 2029, which would be a reduction of 75,000 households*
2. *Distribute 75,000 refurbished or donated devices to Iowans by the end of 2029*

The following goals, objectives, and activities can help guide the way to achieving the state's desired outcomes:

Goal 1: The State of Iowa will have a highly effective, sustainable, and healthy device ecosystem that serves residents within Covered Populations

Objective 1.1: Analyze the complete process and environment through which free and low cost devices are currently obtained by residents within Covered Populations

- **Activity 1.1.1:** Conduct a thorough review of current available data related to device supply, preparation, and deployment
- **Activity 1.1.2:** Spotlight the state's distinct assets, opportunities, and barriers related to devices
  - 1.1.2.1: Catalog existing device suppliers, preparation, and deployment sites across Iowa
  - 1.1.2.2: Pinpoint gaps and areas that require additional capacity or enhancement
- **Activity 1.1.3:** Determine priority areas in the process that need immediate action
- **Activity 1.1.4:** Craft a strategic plan and operational work plan based on the preceding analysis
- **Activity 1.1.5:** Conduct stakeholder engagement sessions involving representatives from Covered Populations and community organizations to gather qualitative insights to supplement data-driven analysis and provide feedback

Objective 1.2: Expand and diversify the range of funding sources available to support the ecosystem

- **Activity 1.2.1:** Engage various funding sources such as state and federal government programs, philanthropy, and private sector entities that currently provide funding or other support for devices (and related supports) for Covered Populations
  - 1.2.1.1: Identify amounts and funding requirements of all financial and in-kind sources that can be used to support the ecosystem
    - 1.2.1.1.1: Determine additional potential sources of funding that are currently not used for devices
  - 1.2.1.2: Expand awareness and communicate value of investment in the state's device ecosystem
    - 1.2.1.2.1: Build upon and align with the state's wider education, health, civic and social engagement, environmental, economic, and workforce development goals to find areas of mutual benefit
  - 1.2.1.3: Secure commitments of partners to provide and/or facilitate the funding of devices and related ecosystem activities
    - 1.2.1.3.1: Assess the viability of creating a digital equity fund for ongoing financial support of the ecosystem
    - 1.2.1.3.2: Assess the viability of a statewide device discount/subsidy program

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Objective 1.3: Strengthen and build local capacity, leadership, and collaborative engagement throughout the device ecosystem

- **Activity 1.3.1:** Establish statewide coordination and collaboration to enable the functionality of the device ecosystem
  - 1.3.1.1: Establish a centralized coordination mechanism to streamline communication and collaboration among the entities that make up the ecosystem
    - 1.3.1.1.1: Facilitate forums, events, and tools for stakeholders from diverse sectors to connect and collaborate, specifically regarding devices
  - 1.3.1.2: Utilize the No Wrong Door approach to organize information resources for digital inclusion services for all ecosystem participants
    - 1.3.1.2.1: Convene stakeholders from within Covered Populations to determine the scope of assistance that could be provided through Iowa's No Wrong Door system
  - 1.3.1.3: Align overall Digital Equity Plan goals with the missions of trusted institutions
    - 1.3.1.3.1: Integrate digital equity initiatives into existing programs and services provided by institutions to maximize impact
- **Activity 1.3.2:** Cultivate and establish ecosystem leadership
  - 1.3.2.1: Formulate a leadership structure such as a statewide working group, sub-committee of a coalition, or Device Council comprised of representatives from all ecosystem stakeholders and members of Covered Populations
  - 1.3.2.2: Define roles, responsibilities, and decision making processes

North Carolina's Department of Information Technology has convened and leveraged input from a device council made up of over thirty practitioners from across the state who meet regularly to discuss activities around North Carolina's device ecosystem. The group assists in identifying underserved communities in need of affordable devices, contributes to shaping the direction of the ecosystem, serves as a clearinghouse of best practices and helps to ensure accountability and community input.

- **Activity 1.3.3:** Through grantmaking, invest in local organizations that can effectively expand capacity and services within the ecosystem
  - 1.3.3.1: Identify and invest in local organizations that can serve as innovation hubs and/or pilots within the ecosystem

Objective 1.4: Establish and implement a statewide evaluation plan and process for the monitoring and continuous improvement of the device ecosystem

- **Activity 1.4.1:** Define key performance indicators
  - 1.4.1.1: Determine key data to be collected
  - 1.4.1.2: Identify the sources of the data
- **Activity 1.4.2:** Establish user-friendly data collection mechanisms and tools that capture diverse aspects of the ecosystem
  - 1.4.2.1: Conduct data collection on a continuous basis
    - 1.4.2.1.1: Implement regular opportunities for resident and ecosystem stakeholder feedback
  - 1.4.2.2: Create a data validation and analysis process that addresses all aspects of the ecosystem
- **Activity 1.4.3:** Communicate key findings and insights on a regular basis
  - 1.4.3.1: Gather and share learnings to improve the ecosystem
- **Activity 1.4.4:** Implement data-informed improvements to the ecosystem
  - 1.4.4.1: Surface and address policy issues within both the public and private sectors that can better support the ecosystem

Objective 1.5: Embed sustainability practices into device ownership initiatives

- **Activity 1.5.1:** Provide information regarding device end-of-use options for residents
  - 1.5.1.1: Identify current providers and processes for end-of-use services
  - 1.5.1.2: Collaborate with local recycling and disposal entities to establish environmentally friendly options for residents to responsibly dispose of or recycle devices
  - 1.5.1.3: Educate residents on available end-of-use options, promoting awareness and participation
- **Activity 1.5.2:** Collect data regarding the environmental impact of the device ecosystem

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Goal 2: The State of Iowa will have a reliable supply of free and low cost, large screen devices, both new and previously used, that meet quality and use case requirements for residents

Objective 2.1: Streamline and enhance the acquisition of devices

- **Activity 2.1.1:** Engage with key sectors for device donations
  - 2.1.1.1: Identify potential, high impact device donors and suppliers from the corporate, healthcare, government, and education sectors
  - 2.1.1.2: Identify and recruit institutions and businesses to be part of the donation program and understand potential barriers *(IA Plan, page 125)*
  - 2.1.1.3: Promote and facilitate the use of government technology surpluses as a viable source of device donations

In 2023, The City of New York passed Resolution No. 81 that amends "the administrative code of the city of New York, in relation to requiring the department of citywide administrative services to donate surplus city-owned computers to eligible organizations for beneficial use."
City of New York, 2023,

(https://nyc.legistar1.com/nyc/attachments/59d488d4-61b4-4cc6-b0c6-571db4781ddb.pdf)

In 2021, the State of North Carolina passed a bill "to enable nonprofit entities that donate refurbished computers to low-income students in this state to obtain surplus computer equipment at low or no cost from the state surplus property agency and the University of North Carolina."
North Carolina General Assembly, 2022,

(https://www.ncleg.gov/BillLookup/2021/S627)

  - 2.1.1.4: Collaborate with local resellers, managed service providers, and other technology hardware providers
    - 2.1.1.4.1: Encourage donation of excess or obsolete device inventory (new in box or refurbished)

Objective 2.2: Optimize technology donation and procurement processes

- **Activity 2.2.1:** Develop and implement streamlined processes for device donation to simplify and encourage participation from potential donors
  - 2.2.1.1: Research and secure user-friendly online platforms or tools to streamline the donation process for donors
- **Activity 2.2.2:** Analyze state IT procurement contracts for potential cost-effective bulk purchasing
- **Activity 2.2.3:** Collaborate with local resellers, managed service providers, and other technology hardware providers
  - 2.2.3.1: Negotiate discounted bulk purchases of new devices
- **Activity 2.2.4:** Share minimum device guidelines and specifications with donors to ensure devices meet both quality and use-case requirements
- **Activity 2.2.5:** Advocate for policy changes at both the donor and supplier levels to create a more supportive environment for device donation
  - 2.2.5.1: Engage with state policymakers to reform regulations, incentivize donations through tax benefits or other means, and remove barriers that currently hinder the donation process
  - 2.2.5.2: Work with corporate and other entities to encourage procurement, Corporate Social Responsibility (CSR), and Environmental, Social and Governance (ESG) policy changes that support device donation

Goal 3: The State of Iowa will have partners that can prepare free and low cost devices for residents

Objective 3.1: Strengthen the device preparation ecosystem in the State of Iowa to ensure an efficient flow and quality of devices

- **Activity 3.1.1:** Catalog current technology suppliers, refurbishers, resellers, and recyclers operating within Iowa
  - 3.1.1.1: Identify assets and gaps in device preparation capacity in Iowa
  - 3.1.1.2: Identify assets and gaps in device refurbishment capacity in Iowa

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- **Activity 3.1.2:** Determine the preparation providers needed to allow the state to meet its device goals
  - 3.1.2.1 Determine the key attributes, services, and price points available for preparation of devices
  - 3.1.2.2: Identify technology suppliers, refurbishers, resellers, and recyclers that may fit these guidelines and requirements
  - 3.1.2.3: Consider issuing a Request for Information to identify and gauge potential interest and capabilities of providers
- **Activity 3.1.3:** Ensure prepared devices meet quality and usability standards
  - 3.1.3.1: Identify minimum hardware specifications and preinstalled software for devices
    - 3.1.3.1.1: Convene a task force to confirm minimum hardware and software requirements
    - 3.1.3.1.2: Establish standardized protocol for cleaning, testing, and configuring devices to ensure they are ready for their intended use
  - 3.1.3.2: Issue an RFP to secure a range of preparation services
    - 3.1.3.2.1: Publish and disseminate hardware and software guidelines to device preparers and ecosystem partners
    - 3.1.3.2.2: Evaluation, selection, and award of contracts
    - 3.1.3.2.3: Implement training materials for partners on the established protocols
- **Activity 3.1.4:** Determine what resources would be required to set up, support, and expand nonprofit refurbishers operations within Iowa *(IA plan, page 88)*
  - 3.1.4.1: Consider, through grantmaking, investing in out-of-state entities that may wish to expand operations to Iowa
- **Activity 3.1.5:** Plan and implement logistic and distribution processes for device flow within the ecosystem
  - 3.1.5.1: Map and explore the implementation of a hub and spoke, point-to-point, or other logistic model will optimize the flow of devices from suppliers to deployment sites across Iowa
  - 3.1.5.1 Research user-friendly online platforms or tools to streamline the logistic process
- **Activity 3.1.6:** Develop strategies and action plans to fill identified capacity, performance, and access gaps, potentially including investment in additional infrastructure or resources

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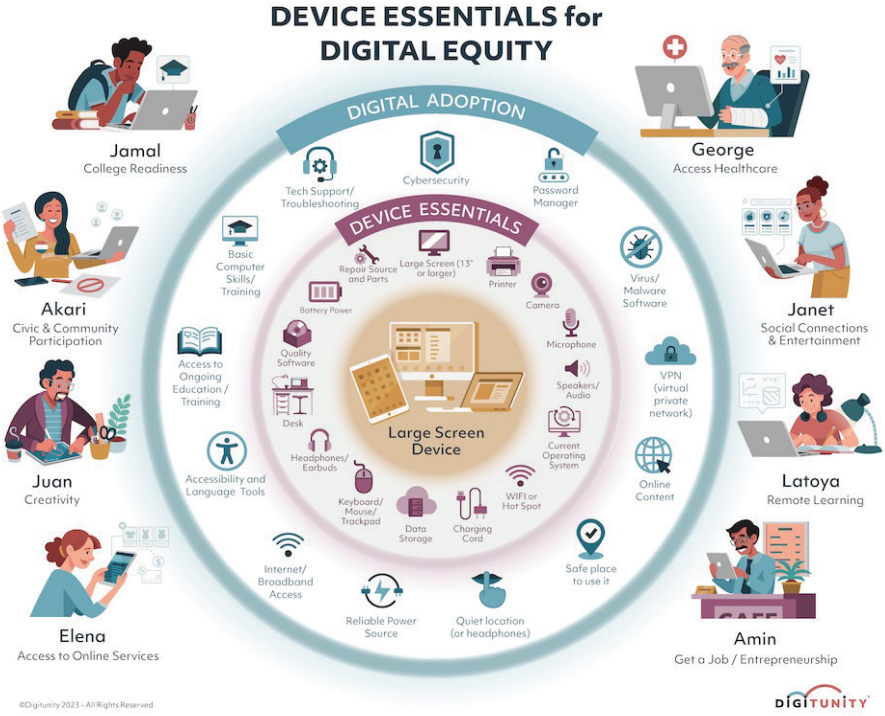

This graphic highlights the myriad ways that residents can utilize technology, along with the additional supports, services, and peripherals necessary for those uses.

Objective 3.2: Determine the level of investment in building capacity and skills for device refurbishment within the State of Iowa

- **Activity 3.2.1:** Evaluate feasibility of workforce development programs aimed at enhancing technical skills related to device refurbishment
  - 3.2.1.1: Identify gaps in the technical workforce skills essential for enhancing device refurbishment capacity in Iowa
  - 3.2.1.2: Collaborate with educational institutions and training centers to develop and offer relevant training programs
- **Activity 3.2.2:** Validate, develop, and deploy training programs specifically designed for refurbishing devices as needed
  - 3.2.2.1: Design curriculum and training materials focused on the technical aspects of device refurbishment
  - 3.2.2.2: Research and incorporate industry standard certification or credentialing pathways into the refurbishment training programs (e.g. CompTIA certifications)

There are numerous examples of refurbishing programs that employ people from Covered Populations across the country, including this sampling:

- **Castle Square Tenants Organization, Boston, MA**
- **E2D, Davidson, NC**
- **Electronics Recycling Solutions, Gallatin, TN**
- **Mission Ignite, Buffalo, NY**
- **MN Tech for Success, Minneapolis, MN**
- **Repowered, St. Paul, MN**
- **Urban Tech Hero, Wilmington, DE**

Goal 4: The State of Iowa will have community-level deployment systems to make devices available to Covered Populations, integrated with essential services

Objective 4.1: Develop and implement a comprehensive device deployment process

- **Activity 4.1.1:** Determine eligibility requirements, a process to match a device to the use case(s) of the recipient, the application process, and distribution methods for the program
  - 4.1.1.1: Prioritize Covered Populations and geographic areas to determine where deployment efforts should be focused
  - 4.1.1.2: Develop and implement a standardized needs assessment to understand individual resident requirements
  - 4.1.1.3: Design and establish a transparent and accessible process for obtaining a device, ensuring that residents can easily navigate and understand eligibility criteria
    - 4.1.1.3.1: Implement user-friendly interfaces and communication channels to facilitate a smooth experience
    - 4.1.1.3.2: Develop a process to continuously gather feedback from recipients, community leaders, and stakeholders to make data-driven adjustments for improved deployment outcomes
- **Activity 4.1.2:** Determine what device costs may be considered affordable for Covered Populations.
  - 4.1.2.1: Gather data to determine which populations can afford a nominal fee for devices
    - 4.1.2.1.1: Decide whether to tie price points to particular economic and income eligibility benchmarks that are employed in other social service programs

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Objective 4.2: Establish a vetted and trained deployment network of trusted community organizations

- **Activity 4.2.1:** Assess existing deployment processes and assets
  - 4.2.1.1: Inventory existing community assets involved in device deployment
  - 4.2.1.2: Identify programmatic and geographic areas that require prioritization based on gaps and community needs for deployment support
    - 4.2.1.2.1: Survey organizations that serve Covered Populations, community advocates, libraries, school districts, and state agencies providing assistance and education programs regarding their device distribution, including limitations or restrictions placed on devices *(IA plan, page 88)*
  - 4.2.1.3: Utilizing information learned here and in Objective 1, Activity 5.1, validate whether a hub and spoke model will best optimize the flow of devices to deployment sites from suppliers
- **Activity 4.2.2:** Increase the capacity of deployment partners
  - 4.2.2.1: Recruit deployment partners from trusted and interested community organizations that align with priorities
  - 4.2.2.2: Establish a vetting process for ensuring high quality and qualified deployment partners
    - 4.2.2.2.1: Through grantmaking, select and fund deployment sites, taking into account each entity's experience, capacity, ability to serve the priority Covered Populations effectively, and ability to meet reporting duties and minimum deployment requirements
      - 4.2.2.2.1.1: Define key performance indicators and reporting requirements to assess the impact of device deployment efforts
      - 4.2.2.2.1.2: Create a standardized reporting framework for deployment partners to ensure consistent and transparent reporting
    - 4.2.2.2.2: Consider a partnership with employers and workplaces to identify opportunities for device deployment within the workforce
  - 4.2.2.3: Define and set deployment partner standards to ensure effectiveness
  - 4.2.2.4: Provide ongoing training and support to deployment partners
    - 4.2.2.4.1: Develop and offer training tools and materials to deployment partners
    - 4.2.2.4.2: Create and utilize an assessment to match devices to intended recipients' needs
    - 4.2.2.4.3: Uplift best practices to address the unique challenges faced by different segments of Covered Populations to own devices
    - 4.2.2.4.4: Establish recognition mechanisms to acknowledge and celebrate the achievements of deployment partners

Objective 4.3: Build awareness among residents and diverse sectors about device related digital equity services in the state

- **Activity 4.3.1:** Develop resident-friendly materials regarding device related digital equity services available and benefits of device ownership
  - 4.3.1.1: Conduct community outreach and education programs and materials to raise awareness for residents about the device ownership pathway
    - 4.3.1.1.1: Collaborate with local media outlets and community influencers to amplify awareness and engagement, emphasizing increased access to education, employment opportunities, and civic engagement through device ownership
    - 4.3.2.1.2: Create templates for communication and outreach materials that explain how and where residents can acquire free and low cost devices. Standard language, terminology, and branding can help achieve cost savings and consistency in messaging and materials will help make them more easily recognized
  - 4.3.1.2 Collaborate with local leaders, schools, and community organizations to disseminate information and encourage participation
  - 4.3.1.3: Organize information/hotline digital equity resources to be offered through Iowa's No Wrong Door *(IA plan, page 89)*
  - 4.3.1.4: Create and make available to the public an inventory of device providers participating in the ecosystem; market the webpage to advocates and individuals *(IA plan, page 88)*

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- **Activity 4.3.2:** Maximize public access programs and provide a pathway to device ownership
  - 4.3.2.1: Review data regarding public device access in Iowa to determine usage patterns, demographic information, and the effectiveness of current programs
    - 4.3.2.1.1: Organize and share public device access information widely to Covered Populations
    - 4.3.2.1.2: Utilize data insights to identify areas for improvement and inform strategic enhancements in public device access
    - 4.3.2.1.3: Create and distribute a guide on how to transition device lending/public access programs to serve longer-term lending periods and achieve device ownership
  - 4.3.2.2: Ensure that materials and support for residents to own a computer are consistently available to public device users
    - 4.3.2.2.1: Collaborate with libraries, community centers, and other access points to provide information on digital literacy, online resources, and steps toward device ownership

Objective 4.4: Provide tech support that meets the needs of new device owners

- **Activity 4.4.1:** Determine how tech support will be handled within the state
  - 4.4.1.1: Consider developing a menu of tech support services to be offered
    - 4.4.1.1.1: Identify hours of operation
    - 4.4.1.1.2: Determine support modality to be offered (centralized help desk system, tech support guides; virtual, hybrid, or in person)
    - 4.4.1.1.3: Determine whether workforce development programming can be integrated with tech support
    - 4.4.1.1.4: Implement regularly scheduled focus groups and/or surveys to ensure tech support meets the needs of Covered Populations
- **Activity 4.4.2:** Evaluate existing statewide IT infrastructure and resources that could potentially contribute to a comprehensive community tech support system
  - 4.4.2.1: Tie tech support into device supplier requirements as much as possible
    - 4.4.2.1.1: Identify state agencies, educational institutions, and other entities with expertise in tech support
    - 4.4.2.1.2: Determine if identified entities have interest in participating in the ecosystem
    - 4.4.2.1.3: Recruit private sector partners to explore using existing help desk systems to supplement the No Wrong Door system related to digital technology
      (IA plan, page 89)

Objective 4.5: Provide supportive and essential services that lead to device adoption

- **Activity 4.5.1:** Offer workshops, training sessions, and online resources to enhance residents' understanding of technology and its applications
- **Activity 4.5.2:** Develop standardized referral and educational materials that can be customized to local contexts for effective referrals to technical support, skills training, and affordable connectivity; the materials can also include multilingual instructions for taking the first steps towards using newly-acquired devices, as well as basic digital skills training materials and cybersecurity information

Milestones

Ecosystem building is an iterative process where activities are analyzed to make sure they are meeting intended goals, adjustments are made, and best practices and knowledge is shared. Overall, there are three phases:

1. ***Discovery and Socialization:*** *This initial phase involves exploration, analysis, and socializing the ecosystem concept. It's a period of laying foundations and fostering shared understanding.*
2. ***Integration and Formalization:*** *The second phase focuses on integrating, coordinating, and formalizing the ecosystem. This is where alignment of resources becomes paramount for seamless functionality.*
3. ***Ongoing Monitoring and Growth:*** *The third and perpetual phase involves continuous monitoring, scaling, realization of efficiencies, and ensuring adaptability and sustained progress.*

Following are key milestones and potential timeline to be considered and help guide the development and maturation of a sustainable device ecosystem:

Table 1. Sustainable Device Ecosystem Roadmap: Strategic Milestone Overview

		Year*		
Goal and Objective	**Milestone**	**2025**	**2026**	**2027**
Goal 1: The State of Iowa will have a highly effective, sustainable and healthy device ecosystem that effectively serves residents within Covered Populations				
Objective 1: Analyze the complete process and environment through which free and low cost devices are currently obtained by residents within Covered Populations	Completion of data review and analysis	x		
Objective 2: Expand and diversify the range of funding sources available to support the ecosystem	Engagement with various funding sources initiated	x		
	Commitments secured			x
Objective 3: Strengthen and build local capacity, leadership and collaborative engagement throughout the device ecosystem	Alignment of digital equity goals with other institutions		x	
	Leadership structure formulated and roles, responsibilities, and decision-making processes defined		x	
	Investment in local organizations initiated	x		
Objective 4: Establish and implement a statewide evaluation plan and process for monitoring and continuous improvement of the device ecosystem	Key performance indicators confirmed	x		
	Data validation and analysis process developed	x		
	Data collection initiated	x		
	Key findings communicated regularly		x	

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Objective 5: Embed sustainability practices into device ownership initiatives	End-of-use options identified and processes established	x		
	End-of-use options initiated		x	
	Environmental impact data collection initiated		x	
Goal 2: The State of Iowa will have a reliable supply of free and low cost, large screen devices, both new and previously used, that meet quality and use case requirements for residents				
Objective 1: Streamline and enhance the acquisition of devices	Identify and recruit potential device donors and suppliers from corporate, healthcare, government, and education sectors	x		
	Secure commitments from donors and suppliers to participate in the donation program, including government surplus	x		
Objective 2: Optimize technology donation and procurement processes	Share minimum device preparation guidelines	x		
	Identify and advocate for policy reforms to incentivize donation and remove barriers		x	
	Implement user-friendly online platforms or tools for donors to easily navigate through the donation process	x		
Goal 3: The State of Iowa will have partners that can prepare free and low cost devices for residents				
	Identify, catalog and recruit potential	x		

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Objective 1: Strengthen the device preparation ecosystem in the State of Iowa to ensure an efficient flow and quality of devices	preparation partners from public and private sector			
	Define and set standards for device preparation partners	x		
	Implement logistics solutions for efficient device distribution.	x		
Objective 2: Determine level of investment in building capacity and skills for device refurbishment within the State of Iowa	Assess device preparation partners' capacity and plan necessary investments for sustained success.		x	
	Develop, and deploy training programs specifically designed for refurbishing devices as needed		x	
Goal 4: The State of Iowa will have community-level deployment systems to make devices available to Covered Populations, integrated with essential services				
Objective 1: Develop and implement a comprehensive device deployment process	Define and establish deployment partner standards	x		
	Define key performance indicators and reporting requirements	x		
	Decision on implementation of a hub and spoke model		x	
Objective 2: Establish a vetted and trained deployment network of trusted community organizations	Completion of a survey of organizations serving Covered Populations, community advocates, libraries, school districts, and state agencies		x	

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	involved in device distribution			
	Identification of programmatic and geographic areas requiring prioritization based on gaps and community needs		x	
	Establishment of a vetting process		x	
	Selection and funding of deployment sites		x	
	Development and offering of training tools and materials		x	
	Creation and utilization of an assessment to match devices to intended recipients' needs		x	
Objective 3: Build awareness among residents and diverse sectors about device related digital equity services in the state	Launch of community outreach and education programs and materials to raise awareness among residents about the device ownership pathway		x	
	Utilization of data to identify areas for improvement and inform strategic enhancements in public device access	x		
Objective 4: Provide tech support that meets the needs of new device owners	Determination of how tech support will be handled within the state, including a consideration		x	

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	of a menu of tech support services, hours of operation, support modality, and integration with workforce development programming			
Objective 5: Provide supportive and essential services that lead to device adoption and digital equity	Development and distribution of standardized referral and educational materials for effective referrals		x	

**Projected through Year 3 (2027). Assumes consistent progress with minimal adjustments in Years 4 and 5 of the funding, as forecasting for shifts beyond 2027 is unknown.*

Solutions

While the roadmap offers a foundational guide, a deeper dive into analysis, relationship cultivation, and strategic decision-making is required to determine next steps. This can be frustrating, as immediate solutions are often desired. However, creating space for thorough investigation along the way will ensure greater success, impact, and sustainability.

A key marker of future success is the degree of state/local decision making versus an outside entity, emphasizing the importance of streamlining the decision-making process to minimize complexity by limiting the involvement of disparate organizations. This approach underscores the necessity for a centralized coordinating body — similar to a general contractor in construction projects — to manage the device ecosystem effectively, ensuring both efficiency and cohesion. History and experience has clearly shown that the transactional approach of buying devices and distributing them to Covered Populations is not effective and certainly not sustainable. By minimizing complexity through the consolidation of decision-making entities and appointing a centralized coordinating body, akin to a general contractor, the program aims for efficiency and coherence. Additionally, the involvement of subject matter experts is crucial to guide this streamlined process, guaranteeing that decisions are informed, strategic, and aligned with best practices.

This roadmap's primary goal is to ensure a cost-effective, high quality, and sustainable system for obtaining a device is available for residents today and long into the future. Before forging ahead, clarity is needed in several areas related to values, priorities, and leverage points. This clarity will serve as the bedrock for subsequent actions and guide the ecosystem's evolution:

Validating Values and Priorities

1. How much time and resources will be directed toward building local capacity and/or engaging external entities? This decision will shape the collaborative landscape, determining the extent to which local resources are harnessed or external expertise is brought in. For some states, they have explicitly chosen a local/state commitment first, filling in gaps with outside the state entities as needed.
2. Are there Covered Populations which will have particular priority to receive devices or is there urgency or a strategic reason to focus on some groups first? While required to serve all Covered Populations, it may make sense to identify groups that are in particular urgent need or should be prioritized.
3. What are implicit and explicit expectations from the state, NTIA, residents, and other stakeholders? These need to be surfaced as early as possible. Is it critical to the state's political landscape that early, bold wins are evident? Are there other state priorities that may help move this work forward?
4. What are impactful leverage points and potential initial wins? These victories will help fuel momentum.
5. How can the state support a broad understanding and commitment to the ecosystem approach? Continuous learning and sharing data will solidify the collective commitment. This step requires patience and often level setting of terminology and ongoing education.

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Addressing Key Decision Points

1. **Supply**
   a. What are considerations for prioritizing new or refurbished computers?
   b. What corporate relationships can the state leverage immediately to increase technology donations?
   c. How can partnerships with policy makers and corporate entities be formed to encourage policy changes that enhance the device donation ecosystem?
   d. How can the device donation process be simplified and incentivized to increase participation for potential donors?
   e. How can donors be informed about minimum device guidelines to ensure their donations meet quality requirements and fit the needs of Covered Populations, without deterring or discouraging their willingness to donate?
2. **Preparation**
   a. What data and resources are available currently, and what tools are still needed for the state to effectively map and identify the gaps and assets in Iowa's device preparation and refurbishment ecosystem?
   b. What are the necessary hardware specifications and software requirements to ensure devices meet quality and usability standards?
   c. How do we secure strategic partnerships with device preparation providers to maintain high-quality output and meet growing demand? What considerations are needed to assess the capabilities, expertise, and scalability of device preparation providers?
   d. How can we determine the most efficient model for device shipping and logistics to effectively serve the entire state's needs?
   e. What investments are necessarily in infrastructure and technical workforce development initiatives to enhance device refurbishment capabilities?
3. **Deployment**
   a. How much support and funding do current and/or potential partners need to meet deployment standards?
   b. What considerations should be in place for determining the participation of deployment partners?
4. **Ecosystem health**
   a. Who will spearhead the overall device ecosystem? Will it be state personnel with management responsibilities or collaboration through subgrants to other entities?
   b. Based on data, what individuals and organizations can be connected to provide mutual benefit?
   c. How can the distribution of funding be optimized through RFIs or RFPs? These processes require significant preparation to clarify the state's expectations and requirements including data collection and reporting. These are also critical tools to shape the ecosystem.
   d. Are the current measurable objectives adequate to support a device ecosystem? Should they be adjusted? What other context-specific indicators that should be considered?

Collecting Additional Data

1. How can a deeper collection and analysis of data to better comprehend the intricacies of the device ecosystem be completed? A thorough understanding of the assets and challenges in supply, preparation, deployment, and ecosystem health will pave the way for optimal solutions. Several areas where additional data is needed are noted throughout the roadmap such as:

   a. Supply

   i. What information on past and potential future device donations is available, including types of devices, quantities, and conditions?
   ii. What is the anticipated demand for devices for Covered Populations? This information is necessary in order to align supply with community needs.

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a. Supply (continued)

iii. What are current inventory levels of devices at suppliers, preparation providers, and deployment partners, including types, quantities, and conditions (new, refurbished, etc.)?

iv. What are the cost structures of suppliers, refurbishers, and logistics providers, including bulk purchase discounts, repair costs, peripherals, shipping costs, and associated fees?

Collecting Additional Data

b. Preparation

i. What key attributes, services, and price points of device preparation providers should be systematically cataloged to identify the best partners for the State of Iowa?

ii. How can data on device failure rates, repair needs, warranty claims, and overall service satisfaction be collected to ensure quality and usability (use-case) standards are met?

iii. What specific skills and technical knowledge gaps exist in the current workforce that are critical for enhancing device refurbishment capacity within the state? Collected data can guide the tailoring of workforce development and educational curricula to cultivate a skilled technical workforce to meet the needs of the device preparation ecosystem.

c. Deployment

i. How do residents currently receive a free or low cost computer?

ii. What is working in how residents receive a free or low cost computer? When it works, why does it work and what makes it happen?

d. Ecosystem health

i. Based on data, what individuals and organizations can be connected to provide mutual benefit?

ii. Is there cross-sector representation, including from each Covered Population, of groups and people that have a stake in the work? For devices, this can be achieved through a coalition or device subgroup.

iii. Who are the individuals and entities that exhibit high enthusiasm and energy for the device ecosystem? These individuals can be referred to as catalysts or champions who can help drive positive outcomes and momentum.

2. Where can best practices and efficiencies be identified within the current system for how Covered Populations obtain devices? The State of Iowa has a device ecosystem as people currently do obtain free and low cost devices. What can be learned from these current practices and what should be retained?

3. What future steps can be taken to conduct a comprehensive cost study for each component of the device ecosystem? An ecosystem approach should realize cost and process efficiencies and understanding and monitoring costs is critical, especially to allow more residents to obtain a device.

4. How can an annual survey of residents be designed to gather meaningful insights into the effectiveness of the ecosystem? An annual survey to residents is identified in the state's plan to monitor if they have enough devices in their home and can be slightly expanded to get additional feedback that aligns with the roadmap's goals.

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Tying Outcomes to Measurable Objectives

The State of Iowa Digital Equity Plan currently lists two measurable objectives related to devices. In an effort to operationalize the objectives and further set measurable targets, the following is proposed:

Measurable Objective 1: According to the Plan, the objective is to achieve a 50% reduction of respondents in an annual statewide survey "that say they don't have enough devices in the home" by the end of 2029. In the most recent survey, 88% of Iowans currently report having sufficient devices, and the target is set at a 94% positive response rate at the end of 2029.

Year	Percentage of Households Reporting Sufficient Devices
Current	88%
2025	89%
2026	90%
2027	91%
2028	92%
2029	94%

Measurable Objective 1

Measurable Objective 2: Distribute 75,000 refurbished or donated devices to Iowans by the end of 2029.

Year	Number of Devices Distributed
2025	7,500
2026	10,000
2027	15,000
2028	20,000
2029	25,000
Total	77,500

Measurable Objective 2

Clarifying data collection processes will be critical for monitoring progress on Measurable Objective 1. As designed, it requires an annual survey of residents to determine the percentage of respondents that report having enough devices at home. It will be important to distinguish the measure as being households, as opposed to individual residents. Obtaining a truly representative and high response rate can be challenging, especially on an annual basis. Wherever this specific task can be incorporated into other survey efforts would be beneficial.

Measurable Objective 2 will be easier to collect data on as it can be controlled through reporting by deployment partners. The measure should be described as the number of devices deployed, rather than distributed. Residents may also obtain devices through other means that can add to the state's overall total; the two measurable objectives are not directly related.

As the plan becomes operationalized, there are secondary outcomes under each of the primary measurable objectives that could be helpful in monitoring the effectiveness, quality and impact of the ecosystem. These include:

Supply:

- Number of annual technology donations
- Quality of annual technology donations
- Number of new computer donations
- Level of engagement of technology donors
- Fail rate on distributed refurbished computers

Deployment

- Number of deployment partners
- Number of people that report knowing where to receive a free or low cost computer
- Number of people who recommend getting to a friend or family member

Impact on device recipients

- Number of recipients who report safe use of their computer over 6 months
- Number of recipients who enroll in a digital literacy course
- Number of recipients who report using their computer regularly for everyday tasks
- Level of social connectedness (i.e. lack of loneliness) reported by seniors (or other indicators for specific Covered Populations)

Ecosystem health

- Number of entities engaged
- Diversity of sectors involved
- Self-reported engagement of ecosystem partners
- Number of people directly impacted by digital inequity engaged
- Level of systems integration – for example, the number of recipients who participate in digital skills training

Incorporating the Device Ecosystem into Iowa's Digital Equity Plan

The executive summary of Iowa's Digital Equity plan calls for the elimination of the digital divide via "a sustainable infrastructure to address digital equity issues into the future," one that requires "cooperation, creativity, and coalition building" and creates "new partnerships to remove barriers for Iowans to fully participate, contribute, and thrive in society". This approach defines the work of organizing a device ecosystem: a system that requires a plurality of partners working towards a shared vision, and whose individual expertise is essential to its continued success. .

The virtues of collaboration and sustainability are essential here; a device ecosystem without sustainability is a temporary stop-gap at best, a wasteful expenditure of energy and resources at worst. Through collaboration, diversity, and continuous improvement, Iowa's device ecosystem will be equipped to thrive for years to come and serve as a cornerstone in the state's efforts to close the digital divide.

With that in mind, fostering the development and monitoring the health of a sustainable device ecosystem should, in itself, become a Measurable Objective. Doing so not only identifies it as a specific objective to monitor, it also cements the concept as a key construct of the Plan. The Plan already states that Iowa "will establish a device ecosystem that aims to deliver devices to qualified individuals." A third device-related Measurable Objective could be stated as "Establish a device ecosystem with identified partners for supply, preparation and deployment."

Communication Considerations

KEY ENTITIES AND STAFF TO ENGAGE

Collaboration among a diverse array of sectors and entities is a necessity, with each playing a unique and integral role in shaping the device ecosystem. There are nine identified categories of key sectors to be engaged, which include:

1. ***Businesses***
2. ***Community Anchor Institutions***
3. ***Cooperative Extension***
4. ***Education***
5. ***Government***
6. ***Nonprofit Organizations serving Covered Populations***
7. ***Media***
8. ***Philanthropy***
9. ***Residents***

Table 2 below features a list of key sectors to engage, broken out by the specific goals and objectives of the device ecosystem, along with accompanying reasons for doing so. Examples of specific entities found in Table 2 should not be construed as exclusive or exhaustive, they are the result of Digitunity's cursory review of Iowa's landscape including some entities noted in Iowa's Digital Equity Plan, along with groups known to Digitunity. A thorough landscape analysis is necessary to gain a deeper understanding of how each sector and which organizations can be specifically targeted to meet the needs of the state as a whole, and within each regional area or community as determined by the Iowa Digital Equity team.

Table 2. Mapping Engagement: Outreach Strategies

Goals and Objectives	Key Sectors	Where to Begin
Goal 1: The State of Iowa will have a highly effective, sustainable, and healthy device ecosystem that serves residents within Covered Populations		
Objective 1: Analyze the complete process and environment through which free and low cost	Community Anchor Institutions	Associations of hospitals, school administrators, libraries, housing authorities, or other groups composed of deeply embedded and networked community institutions with wide geographic spread. Examples include Iowa Hospital Association, Iowa Library Association, Iowa Rural Health Association, and School Administrators of Iowa.

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devices are currently obtained by residents within Covered Populations	Nonprofit Organizations	Statewide, regional, and local nonprofit associations composed, in large part, of direct-service, community-level organizations that work with and serve Covered Populations. Examples include Iowa Nonprofit Alliance, Nonprofit Association of the Midlands, Cedar Valley Nonprofit Association, and Iowa Association of Area Agencies on Aging. National organizations such as Connected Nation, the National Digital Inclusion Alliance (NDIA) and Digitunity can also provide support in this work.
	Education	While K-12 schools, community colleges, and other institutions of higher education are all considered to be anchor institutions, specific effort should be made to engage educational institutions. Schools reach students directly, often provide devices to them, and can be a conduit to immediate and extended families. Starting first by working through associations could be effective; examples include the Iowa Department of Education, Iowa School Districts, Iowa Association of Independent Colleges and Universities, Iowa Board of Regents, and Community Colleges for Iowa.
Objective 2: Expand and diversify the range of funding sources available to support the ecosystem	Businesses	Corporate philanthropy and other financial support can help provide funding for the ecosystem. A scan of corporate giving programs on The Grantsmanship Center could be a good first step to identify prospective funders. Further research and engagement with the corporate sector can be done through the Iowa Association of Business and Industry and Iowa Sustainable Business Forum.
	Philanthropy	The Iowa Council of Foundations is a good starting point for exploring the full range of potential funders in Iowa. Philanthropy can not only provide valuable financial resources, but also drive the statewide narrative and advocate for broad support for Iowa's device ecosystem. Moreover, an evergreen digital equity fund could be established within an Iowa foundation to provide ongoing support for digital inclusion efforts.
	Government	A scan of federal, state, and local government programs with a specific purpose of uncovering potential funding

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		sources for devices or ecosystem components could be fruitful. Programs like SNAP, WIOA, and others could be integrated so that people within Covered Populations could obtain devices.
Objective 3: Strengthen and build local capacity, leadership and collaborative engagement throughout the device ecosystem	Community Anchor Institutions	As highly effective connectors to Covered Populations with deep interest in advancing digital equity, CAIs could serve as conveners in communities. Individual entities such as Des Moines Area Community College, Iowa State University, Des Moines Public Library, and other CAIs across Iowa should be actively engaged.
	Nonprofit organizations	Community-level, direct service nonprofit organizations have deep knowledge of their clients and real-world experience in serving Covered Populations. Entities such as Boys & Girls Clubs of Central Iowa, individual American Legion posts, Easter Seals Iowa, and many others should be engaged in local efforts.
	Businesses	Local businesses are the economic backbone of communities, and as such, can play a significant role in supporting local or statewide ecosystems. With thousands of businesses across Iowa, starting first by engaging chambers of commerce via the Iowa Chamber Alliance or Iowa Chamber of Commerce Executives could be effective. Also, specific efforts to engage prominent Iowa businesses such as Hy-Vee, Wells Fargo, MercyOne, Principal Financial Group, HNI Corporation, Crystal Group, and First Whitney Bank & Trust could help provide visible and active support for the ecosystem.
	Philanthropy	Community foundations play a unique and impactful role in places throughout Iowa, and can contribute thought leadership, integration into funding programs, and advocacy to the local and statewide device ecosystem. Engaging them in this work through Iowa Community Foundations could be foundational to supporting digital equity efforts.
	Government	Local governments, tallying nearly 2,000 individual entities and encompassing counties, municipalities, and school districts, could be integral stakeholders in the successful development of Iowa's ecosystem and could support alignment of parallel or complementary efforts. Initial

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		outreach through the Iowa League of Cities or Iowa Association of Councils of Governments could generate deep and meaningful support for the ecosystem.
Objective 4: Establish and implement a statewide evaluation plan and process for monitoring and continuous improvement of the device ecosystem	Education	Colleges and universities can support ecosystem development with their unique expertise in research and evaluation. University of Northern Iowa played a key role in the development of the Iowa Digital Equity Plan, and additional institutions such as The University of Iowa, Iowa State University, Drake University, or many of Iowa's other institutions of higher education could be integrated into the ecosystem development and evaluation effort from the start.
	Philanthropy	In many cases, community foundations, philanthropies, and other grantmakers have specific expertise and deep experience in program evaluation, and could be leaned upon for support. Specific outreach to some of the larger entities within Iowa such as The Community Foundation of Greater Des Moines, Iowa West Foundation, and The Cedar Rapids Community Foundation could yield unique support for monitoring ecosystem development.
	Government	The Iowa Department of Management's Office of the Chief Information Officer plays a leading role in this entire endeavor, and will need the support of stakeholders across state, regional, and local governments in the ongoing development and evaluation of the ecosystem.
Objective 5: Embed sustainability practices into device ownership initiatives	Businesses	Businesses within the Iowa Sustainable Business Forum could be engaged to provide advocacy and support for the development of the Iowa device ecosystem, and help build business sector awareness of how technology reuse can align with CSR/ESG goals.
	Government	Other departments within the Iowa state government could be engaged to support sustainability practices within the ecosystem, and integrate with other environmental initiatives. Examples include the Department of Administrative Services and the Department of Natural Resources.
	Nonprofit organizations	Technology reuse, extending the life of devices and supporting communities through refurbishment and

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		deployment, generally aligns with the missions of environmentally-focused organizations because it reduces e-waste. These organizations could contribute to the development of the ecosystem by amplifying the effort and building greater public awareness. As an example, the Iowa Environmental Council or Iowa Shares could be worthwhile coalitions of organizations to engage in the effort.
Goal 2: The State of Iowa will have a reliable supply of free and low cost, large screen devices, both new and previously used, that meet quality and use case requirements for residents		
Objective 1: Streamline and enhance the acquisition of devices	Education	K-12 schools, colleges, and universities often have processes for disposing of or selling their retired or outdated technology. Engaging these entities en masse through associations or conducting direct outreach could yield understanding of these processes and surface whatever barriers may prohibit entities contributing retired devices to entities within the ecosystem. The Iowa Technology and Education Connection could be a strong entity to engage to reach IT directors at educational organizations.
	Government	State, regional, and local governmental entities have standing processes and policies governing the use of out-of-service devices. Researching which departments oversee IT assets and engaging key stakeholders could help to develop pipelines of supply. Engaging with the Iowa State Association of Counties, the Iowa Association of Council Governments and the Technology Association of Iowa could lead to strong allies.
	Businesses	Businesses looking to fulfill ESG/CSR initiatives could be engaged to contribute surplus or out-of-service devices to entities within the ecosystem. Working through the Iowa Chamber Alliance or Iowa Chamber of Commerce Executives could be effective in engaging many companies with modest effort. As an example, Principal Financial Group currently hosts on-campus recycling and donation events to keep electronics out of landfills.
		Secondary markets and direct sales outlets that have online marketplaces, forums, and platforms such as eBay, Craigslist, and specialized technology forums could be

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		identified and engaged as sources of devices and peripherals.
		Primary sources that may be engaged for new devices include manufacturers, retailers, and distributors. Manufacturers include Lenovo, Apple, and HP; retailers include Best Buy, Amazon, and Office Depot; and distributors include Tech Data, D&H Distributing, and Ingram Micro. Local resellers and managed service providers may also be engaged as sources of supply.
		Aftermarket sources that repair, refurbish, sell, and warranty reusable technology are another source of supply, including manufacturer, refurbishment, and recycling. Additionally, manufacturer refurbishment programs, IT asset disposition vendors, nonprofit refurbishers, and recycling and e-waste management companies all could be engaged to play a specific role in contributing to the overall and ongoing supply of devices.
Objective 2: Optimize donation and procurement processes	Community Anchor Institutions	Focusing on post-secondary institutions and specialty sources such as teaching hospitals is a strategic starting point. These entities typically have more capable devices compared to K-12 schools, making them ideal for sourcing quality devices. University of Iowa Health Care (the UI Roy J. and Lucille A. Carver College of Medicine), University of Iowa Hospitals and Clinics, and UI Physicians, the largest multi-specialty group practice in Iowa are just a few examples.
	Government	Researching state and local IT regulation and policies and targeting entities that can provide access to a wide range of devices for purchase including opportunities for participating in bulk purchasing agreements already in place. Starting with the Iowa State Association of Counties and the Iowa Association of Council Governments can be preliminary starting points.
	Business	Companies that frequently update their technology are ideal candidates for equipment donations. This includes sectors such as finance, technology, healthcare, and agriculture technology. Strategically focusing on corporations with ESG initiatives and those with in-state office presence, especially those with on-premise or

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		hybrid workforces, is ideal. These businesses standardize IT equipment across the organization and when combined with high employee density, are prime candidates for substantial donations. An example of a Iowa-based potential target in the agriculture technology sector is DuPont Pioneer.
	Nonprofit organizations	Organizations fostering technology education, device donations, and access, such as Digitunity, NDIA, and TechSoup, play a pivotal role in unlocking device supply. Their one-to-many advantage, especially as member based organizations, acts as an accelerator by connecting supply with need. Including nonprofit refurbishers enhances this network, ensuring widespread access to technology and furthering educational goals.
Goal 3: The State of Iowa will have partners that can prepare free and low cost devices for residents		
Objective 1: Strengthen the device preparation ecosystem in the State of Iowa to ensure an efficient flow and quality of devices	Businesses	Collaboration with businesses in IT and technology reuse, such as IT asset management and disposition vendors, as well as recyclers, supports the objective of providing free and low-cost devices to residents. Leveraging existing operations and resources within these companies identifies synergies to improve the supply and preparation of devices.
	Government	Tap into existing public sector operations, such as surplus technology programs to enhance the preparation and distribution of devices. The Community and Economic Development section of the Iowa State University Extension and Outreach is an example of an entity to consider engaging.
Objective 2: Determine the level of investment in building capacity and skills for device refurbishment	Businesses	Invest in building local tech talent, offer resources via economic development coalitions and partnerships, such as the Greater Des Moines Partnership, and local chambers of commerce.
	Community Anchor Institutions	CAIs can act as hubs for digital literacy and workforce development training, and may already have active programs in place. Performing a thorough scan of CAI programming could yield guidance for which to engage and in what way.

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within the State of Iowa	Education	Providing students with opportunities to learn about and play a role in the refurbishing process could lead to the generation of supply, and schools can act as hubs for digital literacy workforce development training. CSTA Iowa, the state's Computer Science Teacher Association, would be an example of an entity to research and engage.
	Government	Computer refurbishment may align with the state's broader workforce goals, and Iowa Workforce Development could be engaged to explore where synergies may exist.
	Nonprofit organizations	Local nonprofit organizations within the ecosystem may have experience, skills, or programs that could be used for refurbishment, or may also have specific interest in building such capacity. As an example, the Technology Association of Iowa serves the state's technology community, and includes nonprofit members. They could be engaged to support the generation of supply through advocacy, awareness-building, or making key connections.
	Philanthropy	Iowa's philanthropic sector, engaged by working through the Iowa Council of Foundations and Iowa Community Foundations, could consider co-investment as a workforce development strategy, and bring in additional funds and partners to support the generation of supply.
Goal 4: The State of Iowa will have community-level deployment systems to make devices available to Covered Populations, integrated with essential services		
Objective 1: Develop and implement a comprehensive device deployment process	Community Anchor Institutions	Organizations with statewide reach and experience in serving Covered Populations, especially those with familiarity in how residents currently attempt or get devices, are ideal partners to better understand their experiences and inform the ecosystem. Public libraries, the Iowa Library Association and the State Library of Iowa would be particularly helpful.
	Government	A deeper analysis of government's resources that can help support and integrate into the ecosystem such as logistical and communication channels will strengthen ecosystem planning. State departments such as Education, Workforce Development, Corrections,

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		Disabilities, Veterans Affairs and Health and Human Services have overlapping missions with the device ecosystem.
	Nonprofit organizations	Organizations with statewide reach and experience in serving Covered Populations, especially those with familiarity in how residents currently attempt or get devices to understand their experiences, are ideal partners. Organizational representation from each of the Covered Populations would be a strong starting point as well as CBAN members, AARP, Community Action Agencies, Farm Bureau, United Way, and League of Cities and other organizations that serve medium to large numbers of other nonprofit organizations or constituents would be good first step with subsequent steps pulling in all interested nonprofit organizations to the planning.
Objective 2: Establish a vetted and trained deployment network of trusted community organizations	Government	As a specific example, researching and identifying which among Iowa's 18 public housing authorities have experience in digital inclusion, broadband access and digital skills training would be a good starting point, as well as which authorities serve priority geographic and Covered Populations.
	Nonprofit organizations	Starting first with nonprofit organizations that have experience in deploying devices or want to begin doing so is recommended. Organizations that reach priority Covered Populations should be involved in these early steps as well. Starting with a small group of organizations with this experience and then extending the call to nonprofits located in priority geographic and/or Covered Populations would be a strong strategy.
	Community Anchor Institutions	Organizations that have experience in deploying devices or want to begin doing so, as well as those that reach priority Covered Populations and/or have specific resources that can support deployment should be engaged. A broad group of institutions from faith based to healthcare, libraries and recreation centers should be engaged to learn from their experiences and best practices in the state to then consider becoming deployment partners.

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	Cooperative Extension	With expertise in reaching rural communities and knowledgeable staff and systems in place, prioritizing specific geographic areas and Covered Populations will help determine, in partnership with Iowa State University Extension and Outreach's Community and Economic Development team, which specific locations to engage.
Objective 3: Build awareness among residents and diverse sectors about device related digital equity services in the state	Media	Working with diverse media organizations that reach Covered Populations through a variety of channels, a broad message can be efficiently conveyed. Engaging with Iowa State University's Granlee School of Journalism and Communication and Strategic Marketing Services at the University of Northern Iowa to help develop the messaging and reaching out to outlets such as Black Iowa News and the Iowa Bystander along with other ethnic and diverse news outlets and formats (podcast, social media, print, tv, radio) will help spread awareness.
	Community Anchor Institutions	Tapping into the communication channels of libraries, faith and recreation organizations and healthcare systems that are already connected to Covered Populations and can benefit from this information will help spread the word about how to obtain a device. Community Action Agencies are also key partners to reach and distribute messages of this kind to their clients.
	Education	Both K-12 and postsecondary institutions are key partners who reach large segments of Covered Populations and have shared interest in building awareness. This can be done both through education and teacher associations as well as through institutions that particularly serve Covered Populations including community colleges.
	Nonprofit organizations	Engaging with organizations that reach priority Covered Populations can allow for broad reach and targeted messaging. Messaging that can be shared across an email distribution list of nonprofit organizations is a good first step.
Objective 4: Provide tech support that	Workforce development entities	These entities can be key partners in both training residents from Covered Populations in tech support skills as well as providing funding to support these efforts.

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meets the needs of new device owners	Businesses	Businesses have tech support systems, resources and staff expertise that can be leveraged for community good. Device suppliers also hold responsibility for tech support. Initial outreach to the Technology Association of Iowa and CBAN members would be good starting points.
	Education	Tech support is a viable career pathway that schools and postsecondary institutions can integrate into their career programming and meet service requirements while building on-the-job skills for students.
Objective 5: Provide supportive and essential services that lead to device adoption and digital equity	Community Anchor Institutions	CAI's can offer physical space and resources, offer training and incorporate awareness about digital equity into their current programs
	Government	By utilizing their websites and social media platforms they can share information. They can also host training sessions.
	Education	Schools and postsecondary institutions can develop materials and facilitate training sessions for residents
	Nonprofits	Nonprofit organizations can offer physical space and resources for training and incorporate awareness about digital equity into their current programs. Potential initial partners to reach out to are listed in Iowa's Digital Equity Plan and include Outlook Village, Easterseals Iowa, OTAS, Evelyn K. Davis Center, and the ASK Resource Center as well as the Iowa Nonprofit Alliance and Iowa Commission on Volunteer Service.
	Philanthropy	By providing financial support for training, materials and technology, philanthropy can play an important role. They can encourage collaboration among grantees and exchange of information and resources. Engaging with the Iowa Council of Foundations and United Ways would provide a strong start.

KEY BENEFITS AND OUTREACH STRATEGIES FOR POTENTIAL ECOSYSTEM PARTNERS

As the device ecosystem is developed, it is important to keep in mind the specific benefits and outreach strategies for engaging potential partners. Prospective partners and stakeholders include the general public for technology donations, preparation and deployment entities, and state agency colleagues. Specific outreach strategies to reach them should be developed in order to build relationships and collaboration. Outlining the benefits to each group for the "why" they should want to engage with the device ecosystem is a critical thing to convey.

Technology Donations from the Public

Benefits

1. Technology donations play a crucial role in bridging the digital divide by providing access to essential digital tools. This support contributes to community-wide digital inclusion efforts, ensuring that fellow residents have the opportunity to participate in the community and access educational resources, employment opportunities, healthcare services, civic engagement and more.
2. Technology donations promote environmental sustainability by extending the lifecycle of electronic devices. Instead of contributing to electronic waste, these donations encourage the reuse and recycling of technology, reducing the overall environmental impact associated with electronic disposal.
3. The collective effect of technology donations from the community can result in a significant positive impact on the community. Small-scale technology donations can lead to meaningful change. Each donated device represents a step towards a more digitally inclusive society.

Outreach strategies

1. A key strategy to reach the public is to leverage existing volunteer networks to spread the word about the opportunity to organize technology donation promotion events. Volunteers can help collect devices from the community and launch social media campaigns. These efforts help raise awareness about the digital equity needs of their community and the impact their technology donation can have on others.
2. Employers can be encouraged to establish workplace technology donation programs. Employees can contribute their unused devices, and companies can organize drives or dropoff points to gather devices for donation.
3. By potentially offering incentives and/or recognition programs for individuals or groups who donate technology, more technology donations may be generated.

Preparation Partners

Benefits

1. Participation as a device preparation partner in a committed network made up of entities from the public, private, and social sectors offers significant advantages. It provides the potential for state, federal and other funding along with new opportunities for growth and collaboration.
2. Collaboration in an ecosystem not only boosts the volume of devices received that require services but also fosters local exposure, customer loyalty and brand equity by showcasing partners who are investing in the community.
3. Through engagement and investment in the capacity of businesses and organizations that provide device preparation services, jobs are created, skill development is increased, and economic activity is stimulated.
4. Partnerships can be forged between device preparation organizations and tech training entities that expand and/or enhance the workforce's skills, provide access to new opportunities for complementary funding sources such as the Workforce Innovation and Opportunity Act and develop a highly skilled workforce recruitment pipeline.

Outreach strategies

1. Targeted outreach to potential preparation partners should highlight the critical role they play in digital inclusion, outline the benefits of participation and encourage their collaboration.
2. Through media and awareness campaigns, potential preparation partners may better understand the importance of device donation and reuse for their communities. By highlighting the role that preparation partners play in bridging the digital divide, more partners may want to participate. Spotlighting the work that preparation partners do will help boost their brand.
3. By organizing educational forums, showcasing technical expertise and sharing best practices, preparation partners can increase their own knowledge and performance.
4. Through fostering opportunities for partnerships between training entities and device partners, doors may be opened for technical skill enhancement, internships, and practical skills application, ultimately, increasing the number of highly skilled candidates for technically advanced positions.

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Deployment Partners

Benefits

1. Organizations exploring this role may have pre-existing initiatives that align with advancing digital equity which can offer a seamless integration into their ongoing efforts, ensuring consistency and reinforcing their commitment to community well-being.
2. Entities surfaced in Iowa's digital equity asset scan may already be engaged in supporting the device needs of people within Covered Populations. These entities may be more formally engaged to participate meaningfully in the development of the ecosystem and could serve as a resource for other deployment partners.
3. Acting as a deployment partner signifies trust within the community. For organizations already serving Covered Populations, this role enhances their credibility. It leverages existing relationships and networks, creating a natural bridge for device deployment.
4. When clients become device owners, it's not just about technology; it's about empowerment. By facilitating device ownership, organizations contribute directly to their clients' independence and self-sufficiency, aligning with broader mission objectives.
5. Becoming a deployment partner doesn't mean navigating uncharted territory alone. Training sessions and funding support may be provided to ensure that organizations receive the necessary tools and resources.
6. Serving as a deployment partner elevates the organization's profile within the community. It establishes the organization as a pivotal player in fostering digital inclusion, attracting positive attention, and potentially expanding their sphere of influence.
7. Engaging in a digital equity initiative provides a compelling narrative for potential funders. It showcases the organization's commitment to comprehensive community development and positions them as a worthy investment

Outreach strategies

1. By identifying where residents currently get free or low cost devices, potential deployment partners can be identified and engaged.
2. Through talking with philanthropic funders about which community organizations reach Covered Populations could help identify and engage potential deployment partners.
3. By using a "one to many" approach, potential deployment partners can be reached through nonprofit and community associations.

State Agency Colleagues

Benefits

1. Residents owning devices contributes to improved accessibility to and overall reach of state agency services. It streamlines communication channels, allowing agencies to deliver information, support, and services more effectively and efficiently.
2. Involvement in the device ecosystem allows state agencies to align with broader government goals creating a more cohesive approach to addressing challenges facing residents.
3. Participation may allow prospective state agency partners to achieve their mandates, if there are any, related to digital inclusion and accessibility.
4. Being a partner in the state's device ecosystem showcases a commitment to digital inclusion and residents, fostering a positive perception among residents and stakeholders.

Outreach strategies

1. By identifying communication channels used by state staff and sharing regular updates highlighting the importance of the device ecosystem and digital equity, awareness will be increased. Through sharing success stories, including showcasing colleagues who actively contribute to the device ecosystem, interest will be heightened. This is an ideal way to encourage colleagues to get involved.
2. Through organizing informal lunch-and-learn sessions, colleagues can gather, learn about the device ecosystem, and ask questions. This creates a casual environment for information sharing.
3. Consistently including discussions about the device ecosystem in interdepartmental meetings and highlighting the collaborative nature of the work can also raise awareness and provide an opportunity for colleagues to share ideas and feedback.
4. By forming cross-functional teams with representatives from different departments to work on device ecosystem projects, a sense of collaboration is fostered and helps ensure that diverse perspectives are considered.
5. Periodically scheduling one-on-one meetings with key colleagues who may have a particular interest in the device ecosystem, allows for relationship building and the opportunity to address their specific concerns and questions.
6. By identifying champions who can serve as ambassadors for the device ecosystem, they are empowered to educate others and encourage their participation.

A comprehensive resource entitled "Targeting the Decision Makers" is in the Appendix and offers detailed scripts for soliciting technology donations from corporations. It also advises on which personnel within these organizations should be approached for the best outcomes.

Conclusion

The roadmap outlined for the State of Iowa presents a holistic strategy to establish a sustainable, resilient, and thriving device ecosystem. This document is more than a directional guide; it signifies a commitment to advancing digital equity, ensuring that residents have access to the transformative power of technology through device ownership.

Iowa's Digital Equity Plan, with its goal of developing a device ecosystem and objectives to reduce device disparities and distribute 75,000 devices by 2029, forms the cornerstone of this work. The four strategic goals encapsulated in the roadmap focus on creating an effective, sustainable, and healthy device ecosystem that serves people within Covered Populations.

Guided by fundamental principles encompassing reliable supply, quality preparation, effective deployment, and continuous monitoring, the roadmap unfolds over three distinct phases: discovery and socialization, integration and formalization, and ongoing monitoring and growth.

It is anticipated that the development of such an ecosystem will take three years, with "steady state" continuous improvement thereafter.

As Iowa integrates this comprehensive roadmap into its Digital Equity strategy, it paves the way for a future where device ownership is not merely a privilege but a shared reality for all.

Appendix: A

Glossary of Terms

1. **Deployment -** The process of distributing large-screen, internet-enabled devices to individuals.
2. **Deployment partners -** Community-level organizations that are trained and prepared to be engaged in deployment activities and are uniquely poised for success based on their trusted relationships in the community and ability to reach Covered Populations.
3. **Device ownership -** Personal ownership of a device, distinct from the use of loaner computers and publicly accessible options such as computer labs. Access to the internet in any form is valuable, but personal device ownership provides additional access and agency over when and how people get online.
4. **E-waste -** Short for electronic waste, e-waste refers to discarded electronic or electrical devices and equipment that have reached the end of their useful life.
5. **Help desk -** Help desk services play a pivotal role in bridging the gap between users and technical support by providing accessible and user-friendly assistance for everyday computer issues. Its primary function is to provide support for general computer-related issues and inquiries, with the capability to escalate more technical problems to a technical support team. Unlike technical support, help desk staff may not require an extensive technical background to excel in their role.
6. **Large screen devices -** Internet-enabled devices, such as laptops, desktops, Chromebooks, and tablets. Distinct from smartphones, large-screen devices are ideal for content creation, as opposed to smartphones, which are more suited to content consumption. Smartphones are indeed useful, but not enough for full and equitable participation online.
7. **Loan vs. own -** An operating philosophy that prioritizes device ownership over temporary, public use (computer labs, loaner laptops, etc), as individual device ownership represents a path to unfettered digital citizenship and equity.
8. **Logistics -** Logistics involves the steps of packaging, transporting, and storing devices, as well as managing inventory. This process covers moving devices from the donor to the preparation site and then to a deployment partner.
9. **New -** The concept of “new” in relation to computing devices refers to products that are brand new in their original packaging, either directly from retailers or original equipment manufacturers (OEMs). These devices are unused, which may include items returned to a retailer, reseller, or OEM, but have never been used. They come complete with all related peripherals, applicable software, and are covered by the manufacturer’s warranty.
10. **Non-deviced and under-deviced homes -** Households that either lack a large-screen device entirely, or don’t have access to the number of devices necessary for concurrent use by multiple members of the household.

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Glossary of Terms (continued)

11. **Ongoing support –** A wraparound support system, ideally integrated with a device, offering residents access to digital skills training, internet access and technical support.

12. **Public access –** These are computers that are available in public areas such as public libraries, schools, or dedicated facilities run by the government.

13. **Preparation –** The preparation of computing devices by entities within the ecosystem is a critical process that ensures they are properly configured, customized, and equipped with the necessary components to serve their intended purpose effectively, applicable to both new or refurbished systems. Proper preparation ensures that devices are ready for deployment and meet the specific needs of users.
    a. *For new devices, this process typically involves configuring the hardware and loading software tailored to the intended user population, such as specialized software programs designed for older adults or unique configuration for users with disabilities.*
    b. *For used or refurbished devices, preparation includes a comprehensive set of activities such as screening for disposition, data wiping to ensure data privacy, diagnostic testing, repair, refurbishment, configuration, and software loading.*
    c. *Additionally, both new and refurbished computers may undergo "kitting," which involves the assembling of associated peripherals and accessories to be bundled with devices, such as keyboards, mice, headsets, or assistive devices.*

14. **Refurbished device –** A refurbished device or computer is a previously owned product that has undergone thorough inspection, repair, and restoration to a like-new operational condition by authorized technicians or manufacturers. These devices are then tested to ensure they meet quality standards before being made available for reuse, offering cost-effective alternatives to new equipment.

15. **Regeneration –** The practice of technology reuse within an ecosystem, applied at the end of a device's useful life. Reuse of devices where appropriate, and the responsible recycling of end-of-life devices, is both environmentally responsible and essential to maintaining the sustainability of the ecosystem.

16. **Technical support –** Hardware repair, warranty support, and troubleshooting. This term can also be used to include user support of the actual device, including software and training.

Appendix: B

Targeting the Decision Makers

DIGITUNITY®

Guide to Corporate Engagement

TARGETING THE DECISION MAKERS

DIGITUNITY®

Targeting the Decision Makers

Identifying the titles of executives and employees that can provide significant influence and decision-making capacity to authorize the donation of technology to nonprofits will depend on the organization's size and structure. However, here are some common titles to look for:

1. Chief Information Officer (CIO): The CIO is typically responsible for managing an organization's technology infrastructure and may have the authority to authorize technology donations.
2. Chief Financial Officer (CFO): The CFO is responsible for managing an organization's finances and may have the final say on whether to authorize technology donations.
3. Director of Corporate Social Responsibility (CSR): The CSR director is responsible for developing and implementing an organization's corporate social responsibility initiatives, including technology donation programs.
4. Director of Sustainability: The Director of Sustainability is responsible for promoting and implementing sustainable practices within an organization, including technology reuse and recycling.
5. Director of IT: The Director of IT is responsible for overseeing an organization's technology infrastructure and may have the authority to authorize technology donations.
6. Procurement Manager: The Procurement Manager is responsible for managing an organization's purchasing processes and may have the authority to authorize technology donations.
7. Facilities Manager: The Facilities Manager is responsible for managing an organization's physical assets, including technology equipment, and may have the authority to authorize technology donations.
8. Executive Director/CEO: The Executive Director or CEO is responsible for overseeing all aspects of an organization, including technology donation programs.

Targeting the Decision Makers

It's essential to communicate with decision-makers in the organization and provide them with information on the benefits of donating technology to nonprofits to support community members in need. Highlight the positive impact the organization can make by donating technology, including reducing electronic waste, supporting community development, and advancing digital equity.

Additional Decision Makers by Role and Department

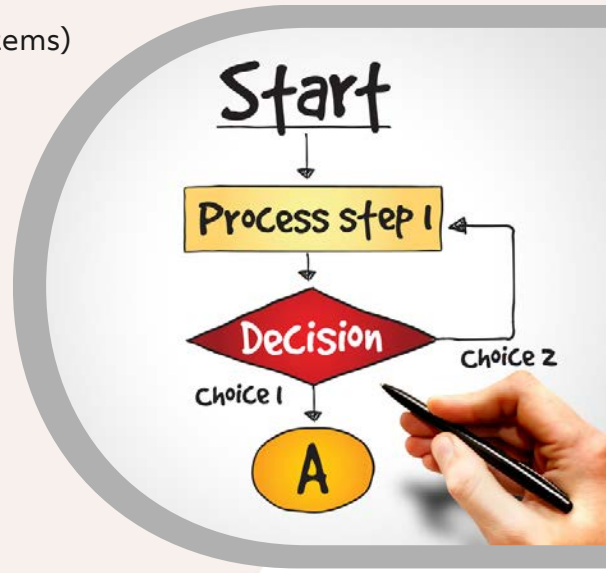
It's essential to communicate with decision-makers in the organization and provide them with information on the benefits of donating technology to nonprofits to support community members in need. Highlight the positive impact the organization can make by donating technology, including reducing electronic waste, supporting community development, and advancing digital equity.

Information Technology

- Chief information security officer (CISO)/Chief security officer (CSO)
- Chief technology officer (CTO)
- Chief Operations Officer (COO)
- EVP or SVP of Information Systems
- Director or Senior Director of IT (or Information Systems)
- EVP or SVP of Operations
- Chief Technology Officer (CTO)

IT Services

- VP of Technology Service Delivery
- VP of Service Delivery; Sr. VP of Service Delivery
- Director of Technology Service Delivery, Sr. Director of Service Delivery
- Vice President Asset Management
- Director IT Asset Management



Targeting the Decision Makers

Procurement

- Chief Procurement Officer
- Vice President of Procurement
- Director of Supply Chain; Sr. Director of Supply Chain
- Director of Purchasing, Sr. Director of Purchasing
- Director of Vendor Management; Sr. Director of Vendor Management
- Strategic Sourcing Manager

Other

- Chief Customer Officer
- VP of Product Design and Development
- Chief Design Officer (CDO), or Design Executive Officer (DEO)
- Corporate Social Responsibility
- Head of Ethical & Social Compliance
- Head of Global Environment, Social & Governance (ESG)
- Director (or Senior Director) of Diversity & Inclusion
- Director (or Senior Director) of Diversity, Equity, and Inclusion
- Director (or Senior Director) of DEI, Data and Analytics
- Director (or Senior Director) of Corporate Compliance and ESG

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Appendix: C

Guide to Corporate Engagement for Device Donations and Contributions

DIGITUNITY®

Corporate Engagement

GUIDE TO CORPORATE ENGAGEMENT FOR DEVICE DONATIONS AND CONTRIBUTIONS

Guide to Corporate Engagement for Device Donations and Contributions

Congratulations! You are at the point where you are ready to start identifying corporate partners interested in contributing to your community's device ecosystem. This is an exciting process that creates a win-win for all in your community. Finding interested corporate partners is something you can do and do well, given time and by staying organized.

There is no magic to identifying and stewarding corporate partners. It is a matter of following a process and aligning a corporation's priorities to the opportunity for supporting digital equity. For example, if the company's giving focus is traditionally on STEM (Science, Technology, Engineering and Mathematics), your conversations should be centered around how owning a computer is integral to being able to build STEM skills. Also, consider why the corporation has an interest in increasing the STEM skills of their community - it's likely to build a qualified workforce.

Identifying Companies

The first step is to identify corporations in your community. First, look at your current relationships and consider approaching them about donating devices. Also, ask the companies that you currently have a relationship with for referrals to other companies.

To find new corporations, there are a couple of methods to do this research. Use business directories and journals, the internet, and networking to identify the largest companies in your area. Sorting the companies by the number of employees can give you a priority list. If there are headquarters of businesses in your community, target those companies first as they likely have a strong interest in your efforts at improving your community. Also, think of industries where technology is essential to their work as they may likely have a stronger and more immediate understanding of digital equity. And of course, always think about who you or your board knows for referrals.

Who and What to Ask

The next step is to determine what you are asking for from the companies that you have identified. Are you looking for device donations or funding or both? There are several doors that you can go through to get to the key decision makers at the company. However the first step to identifying who you need to engage is to consider the type of support you are asking for. There are typically three main areas

- The corporate social responsibility (CSR) team has a vested interest in helping the community. CSR funding is often integrated into a company's overall strategy, and is designed to support causes that are related to the company's industry or mission.
- Philanthropic giving refers to charitable donations made by corporate foundations to support social causes and nonprofit organizations. These gifts are usually driven by a desire to make a positive impact on society, rather than a specific business objective, and are most often a completely separate entity from its corporate partner. If a company does not have a formal foundation, then charitable giving may be managed through a philanthropic department.
- Marketing-focused corporate sponsorship or sustainability funding is another type of corporate giving that is focused on generating positive brand awareness or promoting a company's products or services. In these cases, a company may provide financial support to a nonprofit organization in exchange for prominent branding opportunities or other marketing benefits while also supporting a social cause.

However, whom you talk with also might depend on the size of the company (see the "Targeting the Decision Makers" resource guide). Some companies might not be large enough to have a CSR department.

Funding

If you are pursuing funding, your pathway may be through the philanthropic door. Larger companies with a CSR department are great targets. Some companies even have foundations or a different team such as a sustainability department. In smaller companies, funding could be given at the executive level or through the HR department Sometimes funding can be given through the marketing department if you can align your project with a marketing initiative.

Technology

When looking for device donations, the CSR team could be helpful in encouraging the IT department to have a conversation with you. Sometimes, they might redirect you directly to IT or you may reach out to the IT department initially. In an ideal situation, working with the sustainability team can allow you to marry the need for devices in your community and funding to develop a holistic partnership.

THE PROCESS

Once you have determined the initial priority organizations that you'd like to approach, you begin the "calling" process. Stick to the "rule of 7," meaning reaching out at least seven times before giving up on a contact. The "rule of 7" is supported by data (and some experts would say you need to reach out even more). When reaching out, alternate among phone calls, emails, and LinkedIn messages to your contact. Focus on emailing as your primary method. Increasingly over the last 20 years, people have answered the phone less and less and this has accelerated after the pandemic. Even so, you'll still want to leave voicemail messages if you can't get in touch. Just like you, everyone has limited time, so when sending emails and making phone calls, be clear and concise about who you are and your ask.

Here is an example of an email message that you could send:

SCHEDULE A FACE-TO-FACE MEETING

First, when you are able to get a meeting with a corporate prospect try to meet in person. If that is not possible, ask to do a video meeting. Once a date and time are secured, here are some best practices that you should adhere to during the meeting.

A. Listen Twice as Much as you Talk

Your corporate colleague accepted the meeting with you so they want to hear from you, however, your main goal should be to understand their goals and priorities. Learn about their programs, their organization objectives, and their individual goals. Show that you are interested in their perspective and want to understand their challenges.

B. Share About Your Organization

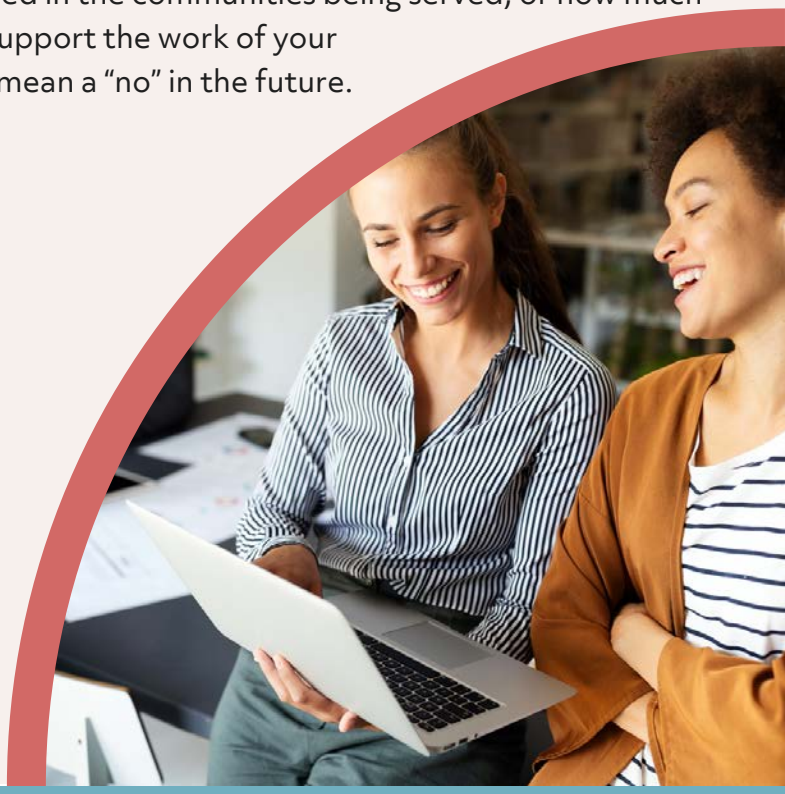
Once you understand more about the company's goals and context, share more about your organization and help them to see how your work aligns with their objectives and goals. Use the ESG Worksheet and the Corporate Reporting Checklist to develop potential talking points.

C. Don't Be Afraid to Ask for Support

Share what your need is (e.g. technology donations, financial sponsorships). Provide specific numbers (e.g. how many computers are needed in the communities being served, or how much funding you are looking for this year to help support the work of your organization. Remember a "no" now, doesn't mean a "no" in the future.

D. Establish Clear Next Steps

Be sure to end the meeting with clear next steps. Follow up according to their preferences (e.g. proposal, additional meeting with key leaders). One of your goals for the meeting is to leave with the knowledge of when and how to follow up, including an agreed upon timeline (e.g. Would you like me to follow up with you late next week, or would the following week be a better time to connect?).



E. Give Thanks
Thank them for their time and reiterate your agreed-upon next steps. Express appreciation for their potential support.

F. Follow Up
The final step is following up. Log all the notes from your meeting and then use an organized system to set next steps with dates. Even if they say no, make a note to check in 6 months later or whatever time period makes sense to stay in touch. You never know what might change over time.

G. Conclusion
Following the steps above will put you on the right track to success. While not everyone will say yes right away, however, continuing to grow your pipeline over time and fostering relationships will yield results

INTRODUCING SAMPLE MESSAGES

On the next few pages you will find some template examples for both email and voicemail messages. These templates can be used as a starting point, and you are encouraged to customize the content to align with your specific target audience. Use the folllowing samples as a foundation to craft personalized and engaging communications that resonate with your prospects.

Introductory Invitation Email - Sample

Subject
[Executive's Name], your retired computers can make a big impact - here's how!

Body:
Dear [Name],
I hope this email finds you well. I'm writing to discuss an opportunity that I believe may be of interest to you and your organization. I understand that many companies face the challenge of retiring their computers and other technology equipment in an environmentally responsible and cost-effective way that also provides significant value back to your local community.

Did you know?

An estimated [INSERT YOUR LOCAL STATISTICS] are without a connected device beyond a smartphone in our community. Of these, over [INSERT YOUR LOCAL STATISTICS] do not have any computing device, including a smartphone. That's where [INSERT TARGET COMPANY NAME] and [YOUR ORGANIZATION] comes in. Our organization accepts technology donations from companies like yours, helping you to re-use retired computers to support digital equity efforts by providing a valuable contribution to underrepresented people that live in the greater metropolitan [INSERT CITY, STATE, REGION] area.

I believe that [insert organization] would benefit greatly from partnering with [YOUR ORGANIZATION] to donate your retired technology. By doing so, you would not only be making a positive impact on the environment and helping people and families without computers in [INSERT CITY, STATE, REGION], but you would also benefit from the tax-deductible status of your donation.

Sincerely,

Introductory Voice Mail message sample

"Hello! I'm reaching out today to share a great opportunity for [INSERT TARGET COMPANY] to make a positive impact on the environment and help people and families without computers in [INSERT CITY, STATE, REGION]. Did you know an estimated [INSERT YOUR LOCAL STATISTICS]are without a connected device beyond a smartphone? Of these, over [INSERT YOUR LOCAL STATISTICS]do not have any computing device, including a smartphone. [YOUR ORGANIZATION] is accepting technology donations from organizations like yours, helping you to re-use your retired computers instead of disposing of them, while also providing a valuable contribution to those in our community who could benefit from them.

By donating your retired technology, you'll be promoting responsible re-use of the equipment by helping close the digital divide and receive tax benefits for your company. I'd love to chat more about how supporting [YOUR ORGANIZATION] can also benefit your organization. Are you available for a quick call to discuss further?"

Appendix: D

Summary of Device Strategies from States' Digital Equity Plans

The following section offers a brief summary of the main aspects of each state's Digital Equity Plan device strategies. This analysis provides a look at the wide array of approaches that states and territories have proposed.

Alabama Statewide Digital Opportunity Plan

- Provide guidance to localities and nonprofits on best practices, expertise, and partnership opportunities to develop and expand programs providing free devices to lower-income households
- Collaborate with partners to design and share data and informational resources promoting internet safety, ACP awareness, and device donation and refurbishment
- Enhance the ability to support, maintain, and repair devices
- Develop online resources on digital opportunity best practices for statewide reference by partners

Alaska Digital Equity Plan

- Create device refurbishment, distribution, and maintenance programs
- Collaborate with private sector, philanthropy, government, non-profits, and others to provide affordable devices
- Develop technical support programs to ensure Alaskans can access assistance for their devices including face-to-face options in local communities
- Work towards access to devices in community anchor institutions and public spaces
- Engage with partners in the disability community to expand in-person technical support opportunities at CAIs and remote support.
- Ensure access to devices and repairs in rural Alaska by initiating a training program for device refurbishment and repair with Alaska post-secondary and technology institutions
- Establish personnel and programming to help people identify devices that fit their needs

Arkansas Digital Skills and Opportunity Plan

- Develop a device refurbishment program to make historic broadband investments accessible to all communities and residents
- Explore partnerships with national non-profit organizations specializing in affordable device access and leverage expertise and potential collaboration with these organizations to enhance device access
- Establish a device refurbishment campaign with corporate, philanthropic, and workforce partners across the state
- Encourage device donation for refurbishment and redistribution to support access to reliable digital devices
- Tie affordable device distribution to the completion of one or more digital skills training courses
- Work with workforce development partners to identify organizations that can assist with physical device refurbishment

Continued >

California Digital Equity Plan

- Develop or fund a device subsidy program specifically targeting Covered Populations
- Conduct statewide and hyperlocal awareness campaigns to educate the public about the benefits of having in-home internet access and desktop/laptop devices
- Promote the advantages of using computers or tablets for a more comprehensive internet experience
- Create or enhance technical support services for internet-connected devices
- Collaborate with relevant stakeholders, including nonprofits, government agencies, and private sector partners, to expand access to technical support services

Delaware Digital Equity Plan

- Collaborate with entities like libraries to enhance the distribution network for devices to reach a wider audience and to loan devices and hotspots to the public
- Explore opportunities for libraries to play a more active role in device distribution, leveraging their existing infrastructure and community presence
- Partner with corporations, foundations, and nonprofits to refurbish and distribute donated or recycled computers and devices
- Provide guidance and support to localities and nonprofits to develop and expand programs that provide free devices to lower-income households
- Collaborate with partners to support eligible households in purchasing computing devices under the Affordable Connectivity Program
- Provide funding to libraries to offer tech support services for library users
- Enhance the technical capabilities of libraries to assist users in troubleshooting, maintaining, and effectively using their computing devices
- Expand the capacity of nonprofits to address device access, tech support, and device repair

DC Digital Equity Plan

- Establish sustainable programs to provide low-cost or no-cost devices and IT support to residents in need
- Execute a digital equity grant program to co-invest in programs demonstrating results in device distribution and device loaner programs
- Provide in-home and public use devices and broadband service to enable access to telehealth appointments and other healthcare-related services
- Leverage partnerships to provide refurbished computers and technology support to students and families
- Utilize initiatives led by private companies to address the digital divide
- Develop guidelines for determining residents' qualifications and distribute devices through online ordering systems, non-profits, tech hubs, or other accessible channels
- Ensure the sustainability of device distribution programs by offering devices at low cost and providing subsidized repairs
- Focus on inclusivity by offering a range of device options and pre-loading devices with relevant apps and bookmarks for essential services

Florida's Digital Adoption and Use Plan

- Collaborate with CAIs and other organizations to explore the expansion of device loan programs
- Establish or enhance programs that facilitate public access to digital devices in key community locations
- Engage with the private sector to encourage and promote efforts that increase access to devices or lower the costs of devices
- Collaborate with businesses to provide incentives for making devices more affordable for residents
- Provide support for refurbishment programs that focus on promoting device ownership.
- Encourage the refurbishment of devices, making them more accessible and affordable for resident
- Support programs that facilitate the purchasing of lower-cost devices and partner with organizations that offer affordable options for residents to acquire digital devices
- Advocate for and support refurbishment programs that provide affordable services and monitor and assess the effectiveness of refurbishment programs in meeting demonstrated needs

Continued >

State of Georgia's Digital Connectivity Plan

- Establish a foundational device ecosystem and secure stakeholder commitments
- Integrate community organizations for device distribution and training
- Expand device lending programs and enhanced public computer labs through CAIs serving covered populations
- Create an ecosystem for collecting, refurbishing, and distributing devices (laptops, tablets, desktops)
- Partner with manufacturers, retailers, private and public industry, and device refurbishers to make the device lifecycle sustainable and accessible
- Establish a dedicated helpline and online support center to serve the dual purpose of job training and providing essential support to new device owners
- Provide secure internet-enabled devices to incarcerated individuals to facilitate education, healthcare, and resource accessibility for effective societal reintegration
- Provide funding for libraries to offer technical support

State of Hawai'i Digital Equity Plan

- Establish a statewide device discount program
- Advocate for devices to be subsidized per individual rather than per household and eliminate credit as a necessity for purchasing basic devices and offer interest-free plans
- Collaborate with service providers to evaluate individual needs and connect individuals with the devices they need
- Fund device refurbishment and redistribution programs
- Change state and county policies to allow for the refurbishment and redistribution of government-owned devices
- Provide year-round use of a laptop or tablet-like device for K-12 public and charter school students as well as higher education students
- Ensure devices provided to covered populations are pre-loaded with necessary software, accessories, cybersecurity protections, and basic instructions
- Establish digital service hubs in rural areas that empower students to provide technical assistance and implement repair and maintenance curricula in high schools
- Partner with companies to supply centers with replacement parts, accessories, and chargers

Digital Access For All Idahoans Plan

- Hire Digital Navigators across the state to provide in-person or accessible technical support to Covered Populations
- Develop an online repository with instructions for common devices and technical issues
- Collaborate with refurbishing organizations, state agencies, colleges, and universities to create a source for inexpensive refurbished Internet-enabled devices
- Incentivize businesses and communities to establish device refurbishment opportunities
- Equip potential technical support centers with device repair shops and second-hand markets
- Explore the establishment of a state tax credit for device donations to these programs
- Conduct targeted marketing campaigns to raise awareness of device program options in each region
- Develop public libraries as anchor institutions of local communities to improve device availability and affordability

Kansas Digital Equity Strategic Plan

- Establish a comprehensive network of device distribution programs covering the entire state
- Work with leading partners to close identified gaps in device distribution
- Allocate funds for train-the-trainer programs to organizations rapidly expanding their digital navigation systems
- Equip trainers to provide support and guidance tailored to the needs of covered population members and ensure that trainers can address challenges related to device usage, accessing online services, and improving digital literacy
- Recognize the need for coordinated efforts to address awareness gaps in device affordability programs
- Engage with ISPs offering discounted device programs and encourage collaboration to enhance accessibility
- Adopt a holistic approach to address not only the availability of devices but also the associated technical support and awareness challenges
- Implement a strategy that ensures device ownership is complemented by adequate support systems, enhancing the overall digital experience for Covered Population members

Continued >

Kentucky Digital Equity Plan

- Create a Sustainable Device Ecosystem by working with existing partners and organizations to identify common needs and practices
- Identify policy barriers to device refurbishments and collaborate with policymakers to remove these barriers
- Provide free devices upon successful completion of digital skills training
- Partner with government agencies and schools to develop a framework for handling “refresh cycles” of devices and encourage colleges, universities, and vocational programs to be involved in device refurbishment
- Explore opportunities with the Registered Apprenticeship program to expand the workforce for device refurbishing
- Identify, support, and promote nonprofit electronic refurbishing programs
- Promote local grant writers to include device funding in grant requests
- Support local partners in applying for waivers from the FCC and enable non-providers to purchase devices for the ACP and recoup costs
- Conduct residential surveys at the end of Years 2, 4, and 5 to track progress in device adoption
- Encourage the practice of distributing devices with pre-installed icons linking to a helpdesk or Digital Navigator portal

Louisiana Digital Equity Plan

- Allocate funds to community anchor institutions, such as libraries, to purchase laptops, tablets, and hotspots and prioritize institutions offering digital skills classes or supporting digital navigators
- Support private sector efforts through grants or subsidies based on the sale of refurbished devices
- Track all public funding for devices with reporting by covered population to ensure progress toward digital equity
- Establish a digital equity advisory panel to meet at least twice annually
- Allocate public funding to support access to devices, leveraging bulk purchasing power when possible
- Encourage and promote private sector efforts to increase access to devices and lower costs through refurbishing and recycling
- Conduct outreach to covered populations to provide information about vendors offering discounted or low-cost refurbished devices
- Develop a mechanism for long-term public oversight to promote availability and affordability of devices for covered populations

State of Maine Digital Equity Plan

- Secure donated devices from businesses, institutions, and agencies for refurbishment
- Ensure that 100% of distributed devices include technical support
- Utilize ARPA Capital Projects Fund funding to support Connectivity Hubs in underserved regions and tribal communities to provide public access to the internet, access to affordable devices for public use and lending programs, workforce and digital skills training, education, and telehealth programming
- Enhance library capacity to provide affordable access to the internet, devices, technical support, digital skills training, and digital navigators
- Monitor progress through surveys, with a focus on reducing the percentage of people unable to fix their devices
- Build capacity for refurbishing and redistributing devices
- Research formal and informal policies by government agencies, institutions, and private sector partners that may be barriers to device donation
- Regularly evaluate and report on the effectiveness of device distribution and support initiatives
- Conduct targeted outreach to underrepresented groups, including low-income households and racial minority residents, addressing their specific device-related challenges

Continued >

State of Maryland Statewide Digital Equity Plan

- Conduct targeted outreach campaigns to increase awareness of the ACP and low-cost programs offered by ISPs
- Explore incentive programs for ISPs that actively contribute to bridging the digital divide by providing affordable services
- Utilize $30 million in ARPA funding to implement a device distribution program, providing approximately 145,000 devices to low-income families in fiscal year 2023
- Collaborate with local governments for the efficient distribution of devices
- Provide guidance and support to localities and nonprofits to develop and expand programs that offer free devices to lower-income households
- Collaborate with partners to assist eligible households in purchasing computing devices under the Affordable Equity Program
- Allocate funds to libraries to offer tech support services for library users
- Work with state and local partners to create opportunities for devices to be refurbished and repaired
- Facilitate partnerships with organizations specializing in device refurbishment to increase the availability of affordable devices

Massachusetts Statewide Digital Equity Plan

- Strengthen successful programs and expand efforts to reach broader demographics.
- Establish and support a robust device refurbishment ecosystem by coordinating with large-scale employers, school districts, higher education institutions, and e-waste recycling companies
- Create local distribution hubs to ensure efficient and equitable access to refurbished devices
- Develop and set state accessibility standards and principles for devices to ensure that devices are user-friendly and accessible to individuals with disabilities
- Expand digital navigator programs that provide technical support for the use of devices, particularly focusing on assisting individuals with disabilities
- Deploy device support programs paired with technical assistance to guide individuals through device upgrades and provide ongoing support
- Explore the implementation of intergenerational navigator programs, pairing youth and seniors, to provide comprehensive device support.
- Foster collaboration between libraries, digital equity organizations, Community Anchor Institutions, and other stakeholders involved in device access programs
- Solicit feedback from beneficiaries and adapt programs based on evolving community needs and technological advancements

State of Michigan Digital Equity Plan

- Partner with internal and external organizations involved in refurbishing internet-enabled devices for targeted populations
- Encourage responsible device ownership, including the promotion of digital skills and cyber-hygiene best practices with every device
- Develop and secure relationships with internal and external agencies for device distribution in distressed regions
- Promote device outreach strategies to Community Digital Navigators and regional businesses.
- Collect and analyze data to assess the effectiveness of device distribution programs and outreach strategies
- Engage community members in decision-making processes and gather feedback on device access programs

Continued >

Minnesota Digital Opportunity Plan

- Encourage and support school tech repair programs to enhance device longevity
- Monitor and report the number of devices repaired through school tech repair programs to gauge impact
- Investigate models for a statewide program, similar to ACP, offering device discounts for residents
- Prepare a comprehensive report exploring sustainable state-managed systems for circulating large-screen devices as long-term loans through collaborating public programs
- Collaborate with nationally-recognized computer refurbishers
- Leverage existing refurbishing infrastructure to support device ownership for individuals from low-income households
- Emphasize the importance of "digital navigators" who support people in gaining and sustaining internet access, acquiring devices, and developing digital skills and explore and potentially implement digital navigator programs to enhance device access
- Develop strategies to address the lack of computer and device repair services in rural areas
- Promote and support the establishment of repair services, potentially through partnerships with local organizations

Missouri Digital Opportunity Plan

- Consider incentivizing various stakeholders, including private sector entities, to participate in device distribution programs
- Identify potential areas of cooperation between state agencies/departments and local refurbishers to enhance the supply of fully Internet-capable devices
- Develop programming that matches graduates of credential programs with devices to enhance their digital access
- Pursue legislative and policy initiatives to encourage the donation of devices to communities in need
- Advocate for supportive policies that facilitate universal device availability, potentially via BEAD and DEA-related funding programs
- Encourage the growth of a robust recycling and refurbishing ecosystem to ensure sustainable access to affordable devices
- Provide support for initiatives that contribute to the recycling and refurbishing ecosystem
- Provide annual funding to libraries and other institutions engaged in lending devices to the community
- Support schools in establishing 1:1 student to device ratios to enhance digital learning opportunities
- Fund at least one program annually that matches formerly incarcerated individuals (FIPs) with device and skills training upon release

Montana Digital Opportunity Plan

- Identify additional CAI locations where loan programs should be established
- Provide funding for or purchase internet-capable devices in bulk to reduce costs
- Identify service kiosks and computer terminals for targeted populations such as veterans, incarcerated individuals, students, and individuals in rural areas
- Conduct interviews and surveys with state agencies to understand their device needs and identify specific requirements, such as tablets equipped with dictation services for on-site visits

Nebraska Digital Opportunities Plan

- Identify any legal barriers or restrictions hindering the donation process and formulate clear recommendations for addressing legal barriers, ensuring alignment with state regulations
- Conduct a comprehensive inventory of existing device refurbishment and repair programs in the state and evaluate the effectiveness, reach, and impact of each program
- Establish partnerships with current programs, fostering collaboration and shared resources and
- Leverage synergies to enhance the overall impact of digital device distribution efforts
- Collaborate with existing subsidized or low-cost device programs in the state and explore opportunities for joint initiatives to increase device accessibility
- Facilitate partnerships with internet providers participating in the ACP program to expand device distribution efforts
- Consider mobile device repair services or innovative solutions to overcome geographical barriers
- Conduct community outreach to educate residents about available device repair services and provide assistance programs for covered populations facing mobility or transportation challenges
- Implement a robust monitoring system to track the distribution and repair of devices

Continued >

Nevada Statewide Digital Equity Plan

- Explore and establish public-private partnerships to create a sustainable device ecosystem
- Leverage collaboration for procurement, refurbishment, and distribution of devices
- Collaborate with internet service providers to expand participation in and the reach of the ACP device benefit
- Identify and designate at least one Community Anchor Institution (CAI) in each community to serve as a hub for free community tech support
- Establish feedback mechanisms to continuously improve and tailor tech support services
- Identify and establish a technology supply chain for devices and manage the end-to-end process, including procurement, refurbishment, configuration, and distribution
- Create a matching fund to attract corporate, philanthropic, and private contributions and everage the fund to expedite device distribution, particularly in the short term
- Deploy Digital Navigators to CAIs to provide on-demand tech support

New Jersey State Digital Equity Plan

- Establish sustainable funding mechanisms for ongoing device subsidies
- Encourage sustained partnerships through initiatives like donation programs, match programs and public-private collaborations
- Consider immediate state-led device access programs, such as computer donation events, in partnership with community based organizations
- Explore opportunities to expand and replicate existing device programs to increase the availability of computers, software, assistive technologies, training, and technical support
- Consider public-private collaborations to ensure a sustainable supply chain for digital resources
- Allocate resources to programs that offer technical support to residents, especially those funded by DEA funds
- Explore opportunities for cross-strategy collaboration, ensuring that efforts to increase affordability, availability, and technical support are aligned and reinforce each other

New York State Digital Equity Plan

- Expand existing programs focused on distributing new and refurbished internet-enabled devices, prioritizing pathways for device ownership
- Explore direct partnerships with device manufacturers to afford obtaining and distributing newer and unused devices
- Link households participating in device distribution programs with convenient electronic waste recycling or disposal programs
- Fund existing and new programs providing technical support to residents experiencing technology challenges
- Fund existing and new programs providing device upgrading, disposal, recycling, and refurbishment services
- Explore engagement with state agencies to streamline state activities and investments at the intersection of cybersecurity and equipment recycling
- Engage with state agencies to coordinate activities and investments at the intersection of cybersecurity and equipment recycling

Continued >

State of North Carolina Digital Equity Plan

- Partner with key anchor institutions to develop strategies for increasing public computer labs and device lending programs
- Establish clear pathways for users relying on smartphones, loaned devices, or public access to transition to device ownership
- Identify, prioritize, and build relationships with public and private entities with a large inventory of computers for donation and refurbishment
- Leverage the Federal Computers for Veterans and Students Act, directing repairable federal computers to nonprofit technology refurbishing organizations
- Work on improving state laws and policies to encourage and facilitate donations from state and local government, colleges, and universities
- Leverage the expertise of refurbishers to expand services, including preparation and distribution throughout the state, using a regional "Hub and Spoke" model
- Explore device recycling programs to obtain a supply of devices for refurbishment and direct end-of-life equipment into recycling efforts
- Work with partners to develop workforce development programs to train individuals in technical skills and refurbishment
- Identify and train trusted community organizations as "deployment partners" to ensure devices are received by those who need them
- Develop minimum requirements for device deployment sites, including responsibilities, criteria for eligibility, and expectations
- Incorporate community organizations into the state's response and recovery programs to provide digital access and technical assistance during and after emergencies

North Dakota Digital Equity Plan

- Encourage and support public libraries in expanding their public device offerings
- Encourage ISPs participating in the ACP to offer connected devices eligible for the ACP discount
- Strategically expand the number of public devices and locations to address limitations in public device access
- Expand device loaner programs to allow North Dakotans to rent devices from state libraries, higher education institutions, and other state agencies

Ohio's Digital Opportunity Plan

- Develop a cohesive ecosystem that encompasses affordable devices meeting diverse user needs
- Collaborate with device manufacturers and suppliers to ensure a range of accessible options
- Implement awareness campaigns to inform Ohioans about the statewide device ecosystem
- Leverage corporate resources, including in-kind support such as hardware donations
- Establish programs or partnerships to help residents affordably upgrade old or unreliable devices
- Develop targeted initiatives to ensure sufficient device access for English Language Learners
- Encourage programs that focus on donation, refurbishment, and distribution of digital devices

Oklahoma Digital Equity Plan

- Collaborate with correctional institutions to ensure access to devices for incarcerated individuals
- Identify and engage local CAIs, technology centers, and nonprofits involved in device refurbishment programs
- Provide technical assistance and best practices to encourage participation in device distribution programs
- Explore the development of a grant program to incentivize and support organizations involved in device refurbishment and distribution
- Establish criteria for eligibility and impact measurement to ensure effective use of grant funds
- Collaborate with K-12 and higher education institutions to facilitate 1:1 device programs
- Encourage technology centers and educational institutions to implement technical support programs accessible to covered populations
- Identify and partner with other federal and state device programs such as Lifeline
- Equip Digital Navigators with the knowledge to assist communities in accessing affordable devices through the Lifeline program
- Evaluate success by the increased availability of technical support programs in communities

Continued >

State of Oregon Digital Equity Plan

- Engage with ISPs to increase the percentage offering low-cost products, including computing devices, for lower-income households
- Support the development and expansion of programs offering free or low-cost devices to lower-income households
- Allocate funding to libraries, K-12 schools (with emphasis on Title I schools), and higher education institutions
- Focus on promoting internet safety, increasing awareness of the ACP, and providing guidance on device donation and refurbishment (including basic software with all devices).
- Assess and enhance the accessibility of technical support for individuals from lower-income households

A Digital Equity Plan for the Commonwealth of Pennsylvania

- Designate $20 million for device purchases through the CPF device program
- Ensure a mix of device types is purchased to cater to the varied needs and abilities of recipients
- Establish and maintain a website resource listing device refurbishers in the state
- Highlight the ACP device credit benefit on the state's website
- Plan and budget for regular maintenance and upgrades for devices provided through borrowing programs
- Explore options for providing low-cost or free software licenses
- Develop strategies to navigate platform or product discontinuation

Puerto Rico Digital Equity Plan

- Launch affordable device initiative
- Enroll all eligible residents in the ACP's device discount program
- Ensure affordable adaptive accessories are available for Covered Populations by 2026
- Ensure all residents have access to technical support for devices through local channels, ISPs, or other distribution and support channels
- Strategically invest in device distribution efforts and leverage existing talents and resources for effective digital equity programs
- Develop services to address maintenance costs, software upgrades, technical support, and life cycle replacement costs
- Create Digital Navigators Centers staffed by trained professionals to provide ongoing assistance with affordable internet access, device acquisition, basic technical skills, and application support
- Develop a major device and service subsidy program
- Provide devices at Multipurpose and Internet Community Centers

Rhode Island's Digital Equity Plan

- Develop a plan for identifying, supporting, and investing in organizations in the state to serve as device partners. These partners will be responsible for sourcing, preparing, delivering, and supporting both new and refurbished devices
- Integrate workforce development into the operations of these device partners
- Target organizations already offering IT training and credentialing, such as workforce development organizations, postsecondary education institutions, and career and technical education programs
- Coordinate device deployment with organizations serving Covered Populations
- Work with deployment partners to ensure devices are received and effectively utilized by residents who need them the most
- Prioritize device deployment to support digital skills training and align with the state's goals in education, workforce development, health, and housing
- Engage partners involved in digital skills initiatives and device partners to facilitate coordinated efforts

Continued >

South Dakota's Digital Opportunity Plan

- Explore the purchase of additional computing devices (new or refurbished) to increase availability for public use
- Establish partnerships with internal and external stakeholders for the distribution of devices to the public
- Collaborate with universities and colleges to expand device loaner programs
- Develop a structured distribution plan to ensure efficient and equitable access to devices
- Explore financing options, subsidies, or discounted rates to make devices more affordable
- Collaborate with entities offering devices at discounted rates or through financing options
- Regularly assess the effectiveness and reach of public-use devices, loaner device programs, and device distribution initiatives
- Engage with public libraries to understand the demand for public computers and identify areas for expansion
- Foster relationships with entities capable of providing technical support for users

Texas Digital Opportunity Plan

- Implement awareness campaigns to inform eligible broadband subscribers about free or reduced-cost device programs
- Encourage refurbishing initiatives to make old devices available at a reduced cost
- Leverage state resources to facilitate the distribution of devices to underserved communities
- Develop a centralized helpline or online portal for residents seeking technical assistance
- Fund local partners to establish and expand technical support programs in their communities
- Encourage collaboration between local businesses, educational institutions, and nonprofits to offer technical support
- Maintain an up-to-date online resource center listing technical support options
- Develop user-friendly guides and materials on common technical issues and solutions
- Collect user feedback to identify areas for improvement and address gaps in services
- Establish partnerships with organizations capable of implementing and sustaining digital opportunity programs and provide funding and resources to support the ongoing efforts of these organizations

Utah Digital Equity Plan

- Maximize locally available resources and expertise by standardizing programs that recycle, refurbish, and redistribute existing devices
- Identify and address threats, including state code or administrative rules, preventing device refurbishment for government devices
- Create a policy pathway for public and private organizations to implement customizable refurbishment programs
- Designate a coordinator within the community backbone organization to act as a central point of contact between device providers and community groups
- Facilitate collaboration between device providers and community groups to optimize the impact of device distribution
- Work with K-12 to develop tools making 1:1 student devices useful for parents without detracting from their educational purpose
- Support libraries and organizations with public computer labs in offering connectivity without discrimination, allowing users access to quality of life digital services
- Expand utilization of federal funding mechanisms such as E-Rate and the Emergency Connectivity Fund to support internet connectivity and device lending
- Develop device availability measures within disaster readiness plans to ensure residents don't lose connectivity during critical times and work with rulemakers to allow expedited purchase and distribution of devices and neighborhood-based or mobile connectivity hotspots during emergencies
- Encourage basic cybersecurity measures by requiring resources or education to be tied to all device distribution programs
- Require all device distribution programs under this plan provide the free cybersecurity resource alongside distributed devices
- Within four years, create a pathway for local governments to refurbish devices safely and legally
- Allocate 10% of the whole budget towards supporting and codifying programs that refurbish and distribute devices, supporting innovative efforts in device lending, and requiring cybersecurity resources or education to be tied to all device distribution programs

Continued >

Vermont Digital Equity Plan

- Work closely with the Department of Education to design and implement a comprehensive device access program for high school students
- Initiate efforts to explore and cultivate public-private partnerships that can contribute to ensuring device access for all high school students
- Establish clear guidelines and incentives for private entities to participate in the program
- Develop community-focused assistance programs that provide strategies and resources to ensure device affordability
- Provide resources such as guides, brochures, and online materials to help communities navigate affordable options
- Develop a structured device loaning program to allow residents to check out/in computers, tablets, or assistive technology
- Collaborate with libraries, community centers, and educational institutions to serve as distribution points for the loaning program
- Implement an easy-to-use online platform for residents to request and return devices
- Launch a public awareness campaign to inform Vermont residents about the device access program
- Advocate for statewide policies that support digital inclusion and equitable access to devices for educational purposes and work with policymakers to identify and address any legislative or regulatory barriers to achieving the goals outlined in the digital inclusion plan

Virginia Digital Opportunity Plan

- Collaborate with technology experts to evaluate the specifications of devices distributed for free or at a reduced cost
- Identify gaps in processing power and capacity, and work with manufacturers or refurbishers to upgrade devices to meet modern user demands
- Strengthen partnerships with nonprofit refurbishing organizations in the state leveraging their expertise in providing devices to veterans and underserved populations
- Diversify the types of devices offered to covered populations, considering the specific needs of different user groups
- Engage with technology providers to secure a variety of devices, such as laptops, tablets, and desktop computers, ensuring compatibility with various digital tasks
- Launch an educational campaign to raise awareness about the limitations of mobile-only internet access for advanced digital tasks
- Provide resources and training to help users transition to more versatile devices and access a broader range of online services
- Work with internet service providers to develop discounted packages for low-income households
- Work with policymakers to create initiatives that address the root causes of digital inequity, including access to devices and affordable service options

Washington Digital Equity Plan

- Create a system to monitor the distribution of devices across the state
- Launch pilot programs in select correctional facilities to test innovative approaches to providing digital devices to incarcerated individuals
- Explore partnerships with technology organizations to provide updated and secure devices for educational and rehabilitative purposes
- Explore opportunities to expand or create a statewide device-recycling program in collaboration with private retailers, repair shops, and government organizations
- Partner with public libraries to establish locations for dropping off devices for recycling and repair
- Collaborate with schools and colleges to create apprenticeships that focus on local repairs within communities
- Highlight the benefits of recycling, such as environmental sustainability and the opportunity for communities to access affordable refurbished devices
- Identify device lending programs, assess their impact on covered populations, and explore opportunities for expansion
- Utilize the expertise of Digital Navigators to guide individuals in accessing device lending programs and other digital inclusion initiatives
- Use feedback to continuously improve device distribution programs, recycling initiatives, and digital inclusion efforts
- Participate in policy advocacy initiatives to promote affordability, access, and awareness of digital devices and internet connectivity

Continued >

West Virginia Digital Equity Plan

- Collaborate with existing partners experienced in managing programs to bring free or low-cost devices to individuals in need
- Develop a comprehensive plan covering device procurement, advertisement, distribution, and maintenance
- Establish channels for procuring devices, including donations from businesses and individuals, low-cost devices from manufacturers, and avenues for subsidies and Learn to Earn-style programs
- Work with the Department of Education to create pathways to device ownership after graduation
- Explore avenues for device lending programs to fill gaps that ownership alone cannot address
- Form a device recycling program for end-of-life devices, contributing to state and county-level recycling efforts
- Develop subsidy programs that provide financial support for securing internet-capable devices, devices for loan, and low-interest loans to secure devices
- Enhance the Digital Navigator Program to provide personalized assistance for securing internet service and devices

Wisconsin Digital Equity Plan

- Establish a statewide process for a refurbished device program and encourage and support initiatives for device refurbishing and recycling
- Implement programs for skills development related to digital devices
- Develop a structured distribution plan to ensure equitable access across the state
- Develop guidelines for device programs, considering cultural relevance
- Advocate for funding to provide internet-accessible devices for every student
- Support initiatives that enable libraries to offer device checkout to patrons
- Collaborate with organizations offering subsidized or low-cost devices
- Establish partnerships with federal funding sources, Tribal communities, and public schools
- Collaborate with schools to support one-to-one device programs for students
- Address privacy concerns in public spaces with device and Wi-Fi access
- Provide technical support and training to overcome barriers faced by low-income populations

Wyoming Digital Access Plan

- Foster partnerships with libraries and colleges to expand access to device loans
- Collaborate with the State Library to initiate a new device loan program, combining devices and Wi-Fi access
- Expand assistive technology services for device loans, demonstrations, and financial support
- Promote and support public computer labs in libraries
- Develop targeted initiatives to address device ownership gaps among specific demographic groups (e.g., Black citizens, Native Americans, individuals with disabilities)
- Assess transportation challenges faced by individuals without broadband or devices at home and explore mobile solutions, such as digital outreach programs or traveling digital resource centers
- Collaborate with local entities to provide mobile access points and skills training in underserved areas
- Support ongoing efforts to increase affordable devices through device loans, refurbishment, or other initiatives

6.4 Appendix D – Statewide Survey

DOM worked with the University of Northern Iowa's Center for Social & Behavioral Research to conduct a statewide survey. The full results and methodology are found, in full, in this appendix with the original page numbers of the UNI report displayed on the lower right of the page.

2023 Iowa Digital Services Survey Summary Report & Focus Group Findings

Prepared by
Kyle Endres, PhD
Mary E. Losch, PhD
Alyssa McCoy

Center for Social and Behavioral Research
University of Northern Iowa

Prepared for

Office of the Chief Information Officer
Iowa Department of Management

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UNI
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Center for Social & Behavioral Research

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Iowa Chief Information Officer Dr. Matt Behrens

Report Contact Information:
Jeff Berckes, Digital Equity Coordinator
Office of the Chief Information Officer
Department of Management
200 E. Grand Avenue, Des Moines, 50309
jeff.berckes@iowa.gov

For further information about the findings, contact:

Kyle Endres, Ph.D.
Associate Director, Center for Social and Behavioral Research
University of Northern Iowa
Cedar Falls, IA 50614–0402
kyle.endres@uni.edu

or

Mary Losch, Ph.D.
Director, Center for Social and Behavioral Research
University of Northern Iowa
Cedar Falls, IA 50614–0402
mary.losch@uni.edu

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Disclaimer:

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Introduction

The Center for Social and Behavioral Research (CSBR) at the University of Northern Iowa (UNI) partnered with the Iowa Office of the Chief Information Officer (CIO) to conduct a statewide survey of adult Iowans and focus groups with select subpopulations. The survey was titled the 2023 Iowa Digital Services Survey (IDSS) which was branded on all recruitment materials. We consulted other publicly available questionnaires and resources while developing the IDSS questionnaire, including the State Digital Equity Survey Template (Horrigan and Rhinesmith, 2023), the From Digital Skills to Tangible Outcomes Questionnaire (Helsper et al., 2015), and the Hawaii Digital Literacy & Readiness Questionnaire (State of Hawaii, 2021). Three subpopulations were selected for the focus groups from the list of "covered populations" specified by the funding agency, the National Telecommunications and Information Administration (NTIA), U.S. Department of Commerce, in their notice of funding opportunity for the State Digital Equity Planning Grant Program. Leadership in the Office of the CIO in consultation with their advisory board identified the three subpopulations as (1) aging individuals, defined by the funding agency as someone 60 years old or older, (2) English language learners, and (3) incarcerated individuals. The report first describes the 2023 IDSS followed by the focus groups.

Survey Data & Methodology

Data Collection

We obtained a random address-based sample (ABS) of 10,000 Iowa residential addresses for the 2023 IDSS. Each address was contacted by mail up to three times, depending on whether or not the recipient completed the questionnaire, the recipient declined to participate, or the prior mailing(s) were returned as undeliverable or vacant prior to the next scheduled mailing date. The statewide survey was a mixed-mode design with all sampled addresses given the opportunity to complete the questionnaire on the web or on paper by completing and mailing back a paper questionnaire. Each address was mailed an initial survey invitation packet on March 22, 2023. The packet contained a questionnaire booklet, a postage pre-paid business reply envelope, and a cover letter that described the study and included both a unique URL and QR code to complete the questionnaire on the web. Prior research has documented that facilitating access to the online questionnaire by including a QR code can improve survey response rates (Endres et al., 2023). A reminder letter was sent on April 12th and a final packet that contained each of the same components as the initial invitation was mailed on April 28, 2023. A $5 Amazon or Casey's gift card was offered as a thank you to all individuals who completed the questionnaire (either by mail or on the web) to encourage participation throughout the state. The survey recruitment materials specified a within-household selection protocol for households with more than one adult (18 or older). Specifically, all materials requested that the adult who had the last birthday complete the questionnaire. We received survey responses from 1,683 individuals (941 completed the paper questionnaire and 742 completed the questionnaire on the web) prior to the close of data collection on June 7, 2023 resulting in a response rate (AAPOR RR2) of 18.5%.

Profile of Survey Participants

The sample of participants who completed the questionnaire included respondents from throughout the state. All 99 of Iowa's counties were represented among the survey completions. As expected with a statewide probability sample, fewer respondents were from less populous counties and a greater number of respondents were from the state's most populous counties, as shown in Figure 1, with the darker shades of blue representing counties with a greater number of participants.

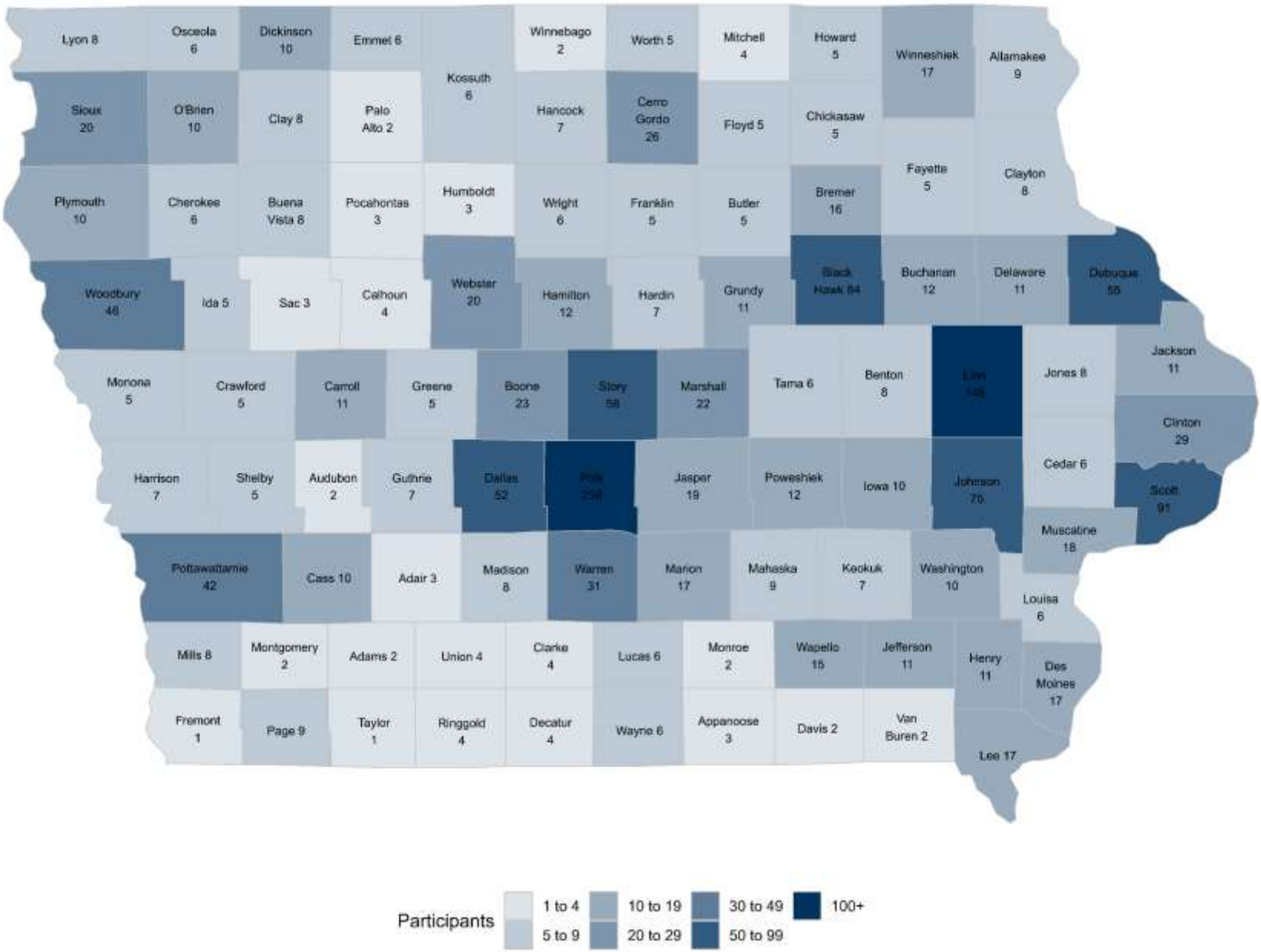

Figure 1: Number of adults who completed the survey in each county

The demographic characteristics of the individuals who completed the questionnaire are displayed in Table 1 alongside the population benchmarks for the state's adult population from the most recent Current Population Survey (CPS 2022, March Supplement). The large number of survey respondents included individuals from many different backgrounds. However, as is often the case with survey data collection, males, individuals with lower levels of formal education, and younger individuals participated at a lower rate than females, individuals with college degrees, and older individuals, respectively. Specifically, 39% of respondents were male and 61% of respondents were female compared to the state's 50/50 breakdown between the sexes. Respondents with a high school education or less were underrepresented in the survey at 14% compared to their share of the Iowa adult population (38%) while respondents with a graduate or professional degree were overrepresented at 20% compared to their share of the Iowa adult population (9%), as shown in Table 1. Young adults, 18-24, were also underrepresented at 3% of the survey sample compared to their share of the Iowa adult population (11%) while adults ages 65-74 and adults 75+ were overrepresented at 24% and 17%, respectively, compared to their shares of the Iowa adult population (65-75: 15% and 75+: 9%). The data was statistically weighted to adjust for differential response rates and undercoverage based on these and other demographic variables (education, income, location type, marital status, number of adults per household, and sex) so that the final weighted data reflects the overall adult population in the state of Iowa. More details about the weighting procedure are included in Appendix A.

Survey research, like all research, has limitations. Survey data collection may be subject to coverage error, sampling error, unit-level nonresponse, item-level nonresponse, measurement error, and survey mode effects (see Weisberg, 2005, 2018). In addition, other types of error may be introduced during the analysis and interpretation stages by researchers using the data.

Table 1: Participant characteristics (unweighted) compared to population benchmarks

	Survey Count	Survey Percent	Population Benchmark
Age			
18-24	55	3.3%	11.2%
25-34	186	11.1%	17.1%
35-44	246	14.6%	17.6%
45-54	208	12.4%	13.1%
55-64	312	18.5%	16.7%
65-74	398	23.7%	14.8%
75+	278	16.5%	9.4%
Sex			
Female	1,034	61.4%	49.9%
Male	649	38.6%	50.1%
Race			
White Only	1,619	96.2%	92.8%
Another Race or multi-race	64	3.8%	7.2%
Ethnicity			
Hispanic or Latino/a	43	2.6%	4.6%
Not Hispanic or Latino/a	1,640	97.5%	95.4%
Education			
High School or less	239	14.2%	38.0%
Some College or Vocational Training	380	22.6%	18.7%
Associate Degree	225	13.4%	11.5%
Bachelor's Degree	498	29.6%	22.9%
Graduate or Professional Degree	341	20.3%	8.9%
Income			
Less than $15,000	77	4.6%	4.4%
$15,000 to less than $25,000	129	7.7%	5.5%
$25,000 to less than $35,000	132	7.8%	5.3%
$35,000 to less than $50,000	192	11.4%	12.4%
$50,000 to less than $75,000	299	17.8%	15.1%
$75,000 to less than $100,000	314	18.7%	14.3%
$100,000 to less than $150,000	312	18.5%	20.8%
$150,000 or more	228	13.6%	22.2%
Marital status			
Currently married	1,021	60.7%	54.1%
Divorced, widowed, separated	370	22.0%	19.5%
Single, have never been married	292	17.4%	26.4%
Location			
On a farm or rural area	412	24.5%	19.0%
In a small town of less than 5,000 people	266	15.8%	19.9%
In a larger town of 5,000 to less than 25,000 people	275	16.3%	19.2%
In a city of 25,000 to less than 50,000 people	216	12.8%	10.0%
In a city of 50,000 to less than 150,000 people	330	19.6%	25.2%
In a larger city of 150,000 or more people	184	10.9%	6.6%

Note: Percentages may not sum to 100 due to rounding. Imputation was used for cases where the survey respondent did not provide a valid response to the demographic question. Population benchmarks are from the most recent Current Population Survey (CPS 2022, March Supplement)

Methodology

This report presents overall survey findings for the state of Iowa with additional selected subgroup findings based on rurality, age groups, and income. The federal funding agency defined rural areas as, "any area other than (1) a city or town that has a population of greater than 50,000 inhabitants; and (2) any urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants." Based on this definition, we used both the county of residence and the self-reported location of the respondent to classify each respondent as rural or metro (not rural). Specifically, any respondent who selected that they live "in a city of 50,000 to less than 150,000 people" or "in a city of 150,000 or more people" were coded as metro. In addition, all respondents residing in either Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, or Woodbury counties were coded as metro due to their proximity to a city or town with a population at or above 50,000 regardless of their selection for the location survey question. Based on this categorization, 45% (unweighted) of respondents were considered rural residents.

Age was asked on the questionnaire as a multiple-choice question with seven response options (18-24, 25-34, 35-44, 45-54, 55-64, 65-74, and 75+). The number and percentage of respondents in each group are shown in Table 1 on the previous page.

As is standard survey practice, household income was also asked as a multiple-choice question, which reduces both respondent burden and concerns about privacy. In addition, open-ended income questions typically have higher item nonresponse due to respondents skipping the item than bracketed or multiple-choice style questions. The income item had eight response options (less than $15,000, $15,000 to less than $25,000, $25,000 to less than $35,000, $35,000 to less than $50,000, $50,000 to less than $75,000, $75,000 to less than $100,000, $100,000 to less than $150,000, and $150,000 or more). The funding agency defined a "covered household" as one where "the income of which for the most recently completed year is not more than 150 percent of an amount equal to the poverty level, as determined by using criteria of poverty established by the Bureau of the Census" (NOFO page 8). Based on this definition, we used both self-reported household income and the number of people in their household (children and adults) to classify respondents as covered low-income households. Specifically, any respondent who met one of the following criteria was categorized as a covered low-income household: (1) their household's income was below $25,000 regardless of the number of people in the household, (2) households with 3+ people and a household income below $35,000, (3) households with 4+ people and a household income below $50,000, (4) and households with 6+ people and a household income below $75,000. Based on these decision rules, 258 (15%) survey respondents were classified as a covered low-income household.

Imputation was used for each of these demographic items for respondents who did not provide a response to that item. More details about the imputation process are included in Appendix A.

IBM SPSS statistics 28.0.1.1(15) and STATA version 18.0 were used to determine the population estimates of responses. STATA was used to assess the statistical significance of differences between rural and metro respondents, across age groups, and between low-income and higher income respondents. When comparing the distribution of each dependent variable of interest across age groups, we conducted chi-square tests to determine the overall relationship between the independent variable, age group, and each dependent variable. We do not present findings from statistical tests that evaluate possible differences between specific age groups (e.g., how respondents ages 18 to 24 compare to respondents ages 25 to 34). The significance level was set at 0.05 (or 5%) for all statistical tests. While there were statistically significant differences between some of the above groups, we must note that some of these bivariate relationships may not be statistically significant when other demographic variables are accounted for in multivariate analyses. Percentages throughout the text and tables may not sum to 100% due to rounding. All findings are statistically weighted to Iowa population metrics. Frequencies for the full sample – both raw and weighted values – for all items are provided in Appendix B. Breakdown comparisons for Rural/Metro are found in Appendix C. Breakdowns by age group are found in Appendix D and breakdowns by income are found in Appendix E.

Survey Findings

Devices, Internet Access, and Affordability

The vast majority of Iowans (97%) reported that they have at least one of the following computing and information devices in their home: a desktop computer, a laptop computer, a tablet (e.g., Ipad/Chromebook), or a smartphone with an internet connection. This percentage was similar when comparing rural (96%) to metro (98%) respondents and low-income (98%) to higher income (97%) respondents. There were some age group differences with 100% of respondents in the four age categories that encompass the ages of 18 to 54 reporting that they had at least one of the computing or information device in their home, whereas 93% of respondents who were 55-64, 94% of respondents who were 65-74, and 90% of respondents who were 75+ reported they had at least one computing or information device in their home.

Across the state, the most common device was a smartphone with internet connection (94%) and the least common device was a desktop computer (50%). The smartphone was the most common device that respondents reported having in their homes regardless of rurality, their age group, or income, as shown in Table 2. A desktop computer was the least common device statewide, for rural and metro respondents, for low-income and higher income respondents, and for all age groups except for respondents age 18-24. Among those age 18-24, a smaller percentage reported having a tablet at home (45%) than all other age groups.

Table 2: Percent who have each device in their home

	Desktop	Laptop	Smartphone	Tablet
Statewide	50%	78%	94%	68%
Rural	46%	76%	92%	65%
Metro	53%	80%	96%	69%
Age: 18-24	54%	77%	100%	45%
Age: 25-34	38%	84%	100%	71%
Age: 35-44	48%	84%	99%	75%
Age: 45-54	53%	88%	100%	82%
Age: 55-64	47%	74%	91%	69%
Age: 65-74	61%	67%	88%	61%
Age: 75+	55%	70%	79%	57%
Low Income	41%	80%	93%	67%
Higher Income	51%	78%	94%	68%

Notes: Question wording: What types of computing and information device(s) do you currently have in your home? Response options: Have; Do not have.

Regardless of differences in the types of devices owned, the vast majority of respondents (88%) reported their household had enough computer devices available to meet the needs of those living in their home. There were no significant differences based on rurality or age group. However, there was a significant difference based on income with a smaller proportion (77%) of low-income respondents compared to 90% of higher income respondents reporting their household had sufficient devices available to meet the need of those living in their home.

The majority of respondents (58%) reported that they routinely access the internet for employment or work they do outside their home. A smaller percentage of rural respondents (50%) than metro respondents (64%) reported that they routinely access the internet for employment or work they do outside their home. Approximately 3 out of every 4 respondents (73%-78%) in age groups under 55, (18-24, 25-34, 35-44, 45-54) indicated they routinely access the internet for employment or work they do outside their home compared to lower percentages in older age groups (55-64: 54%, 65-74: 30%, 75+: 11%). Additionally, fewer low income (44%) than higher income (60%) participants reported that they routinely access the internet for employment or work they do outside their home.

All survey participants were asked which, if any, technologies they (or any member of their household) used to access internet service in their home. Approximately 5% of Iowa adults reported that they do not have any internet at their home, as shown at the bottom of Figure 2. High-speed broadband internet (71%) was the most common technology used to access the internet at home, which was followed by using their smartphone to access the internet (65%), using their smartphone as a “hotspot” for internet access for other devices (23%), fixed wireless internet service (outdoor antenna with indoor Wi-Fi router; 20%), and “Dial-up” internet service (3%). Another 3% of Iowans reported having home internet, but not knowing which type.

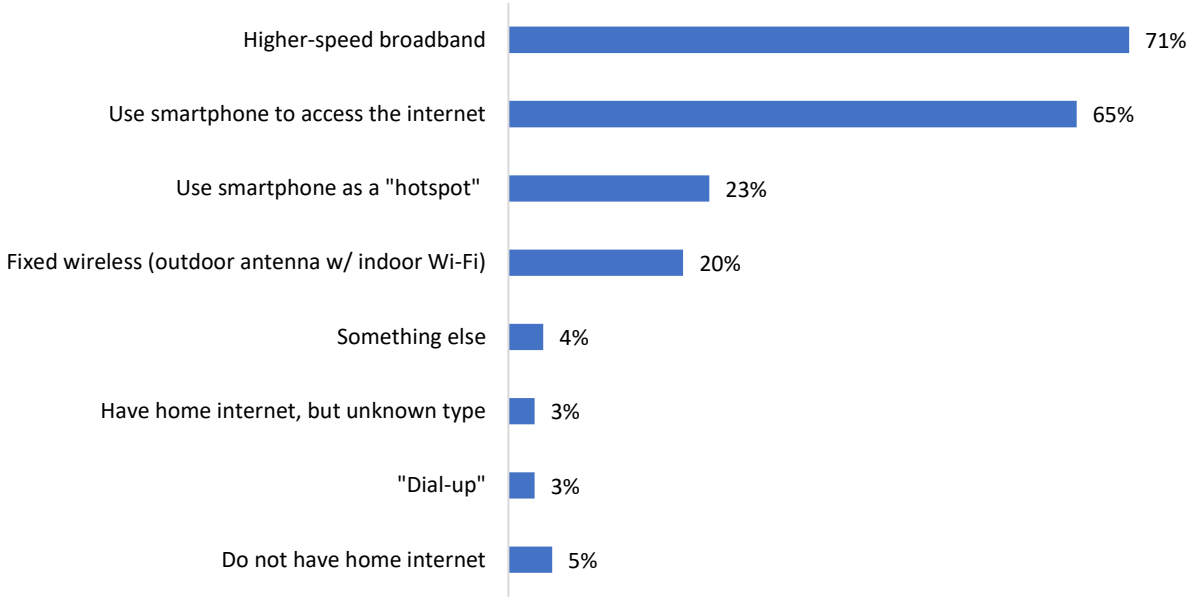

Figure 2: Technologies used to access internet service in your home

The percentage of rural respondents (66%) who reported having higher-speed broadband internet at home was significantly lower than the percentage of metro respondents (74%). There were no statistically significant differences for the other technology types based on rurality.

Significant age group differences existed for higher speed broadband, using your smartphone to access the internet, using your smartphone as a “hotspot” for internet access for other devices, and not having any internet access at home. There was a 30-percentage point difference between the age group with the least reported access to higher-speed home broadband internet (respondents 75+) and those with the most (respondents ages 45-54) reported access to higher-speed home broadband internet.

The percentages reporting access to high-speed internet for each age group (arranged lowest to highest) were:

- 53% for ages 75+
- 59% for ages 18-24
- 70% for ages 65-74
- 70% for ages 35-44
- 72% for ages 55-64
- 78% for ages 25-34
- 83% for ages 45-54

Using your smartphone to access the internet differed between the age groups, as well, with lower percentages among the three older age groups (55–64: 60%, 65-74: 59%, 75+: 53%) and higher percentages among the four younger age groups (18-24: 66%, 25-34: 75%, 35-44: 72%, and 45-54: 68%). The same pattern exists for using your smartphone as a "hotspot" for internet access for other devices. Lower percentages were reported among the three older age groups (55-64: 15%, 65-74: 8%, 75+ 5%) and higher percentages among the four younger age groups (18-24: 37%, 25-34: 38%, 35-44 27%, and 45-54: 31%).

More than 1 out of every 10 respondents 75 years old or older (11%) and more than 1 out of every 20 respondents ages 55-64 (8%) and 65-74 (6%) reported they did not have any home internet access, as shown in Figure 2. The percentages for all remaining age groups were at or below 4%.

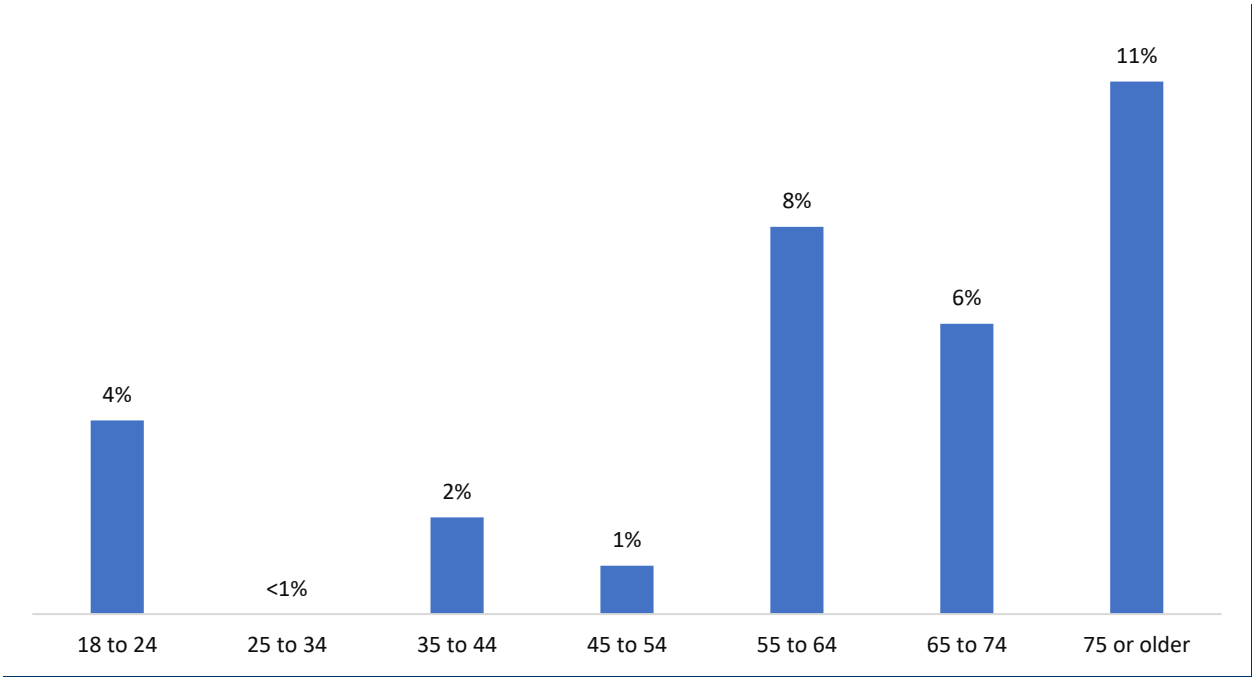

Figure 3: Percentage of respondents in each age group with no home internet access

There were two statistically significant differences for technologies used to access the internet between low-income and higher income individuals. A smaller percentage of low-income respondents reported having higher-speed home broadband (60%) than did higher income respondents (72%). Conversely, a larger percentage of low-income respondents reported using fixed wireless internet service (outdoor antenna w/ indoor Wi-Fi router) to access the internet at home (31%) than did higher income respondents (18%).

More than 9 out of every 10 Iowans reported that they either have wireless (Wi-Fi) internet coverage throughout their house (85%) or in some parts of their house (6%). There were significant differences in home Wi-Fi coverage between rural and metro respondents and between age groups. Approximately 80% of rural respondents reported they have Wi-Fi throughout their house compared to 89% of metro respondents. The percentage of respondents who reported having Wi-Fi coverage throughout their house generally declined as age increased:

- 95% for ages 18-24
- 94% for ages 25-34
- 87% for ages 35-44
- 86% for ages 45-54
- 82% for ages 55-64
- 82% for ages 65-74
- 65% for ages 75+

All survey respondents with some type of home internet service were asked, "Excluding the costs of other services that might be bundled, approximately how much do you pay on a monthly basis for home internet service?" Among all respondents who reported that they have, and pay for, home internet, the modal costs were $61 to $80 (31%), as shown in Figure 3. The majority of Iowans reported it was either not at all (40%) or not too (34%) difficult to fit their monthly internet bill into their household's budget. On the other hand, 1 of every 4 reported it was either somewhat difficult (20%) or very difficult (5%) to fit their monthly internet bill into their household's budget; the remaining participants (2%) selected "don't know." There were no significant differences in reported monthly costs or difficulty in fitting their monthly internet bill into their household's budget based on rurality, age group, or income.

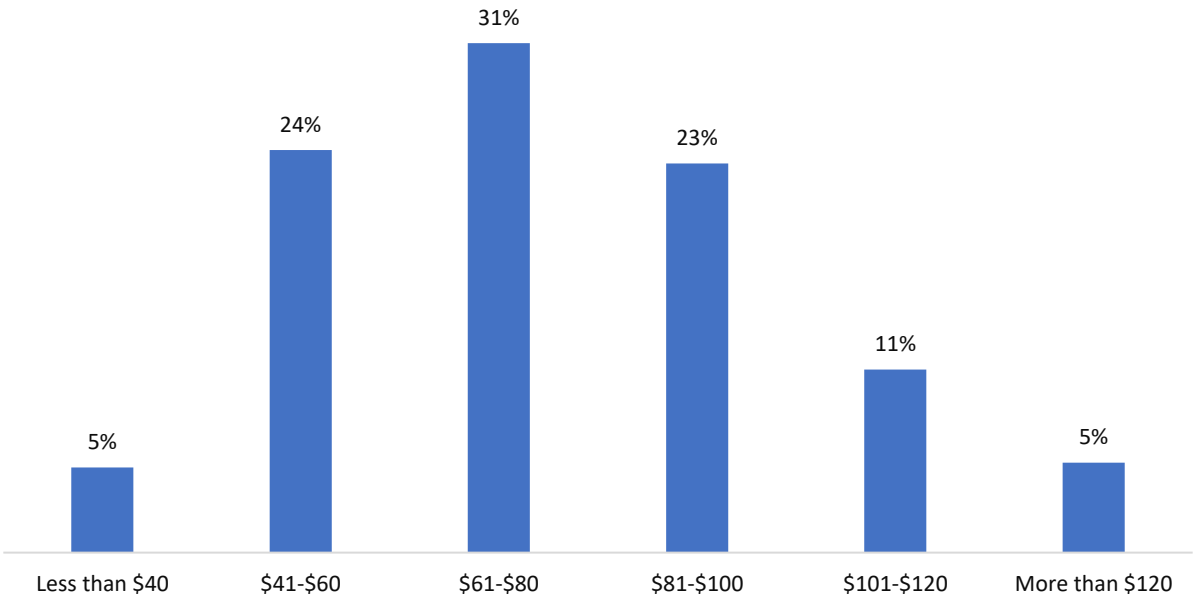

Figure 4: Monthly costs for home internet service

More than twice as many Iowans reported they were either very (30%) or somewhat (31%) satisfied with the quality of their home internet connection than reported they were very (11%) or somewhat (19%) dissatisfied with the quality of their home internet connection. The remaining respondents (9%) reported they were neither satisfied nor dissatisfied. There were no significant differences in satisfaction with the quality based on rurality or income. However, satisfaction with the quality of their home internet connection did vary between the age groups, as shown in Figure 5. For example, approximately 7 out of every 10 respondents in each of the age groups between 18 and 44 reported they were somewhat or very satisfied while approximately 6 out of every 10 respondents ages 45-54 and 55-64 reported they were somewhat or very satisfied, and approximately 1 out of every 2 respondents ages 65-74 and 75+ reported they were somewhat or very satisfied with the quality of their home internet connection.

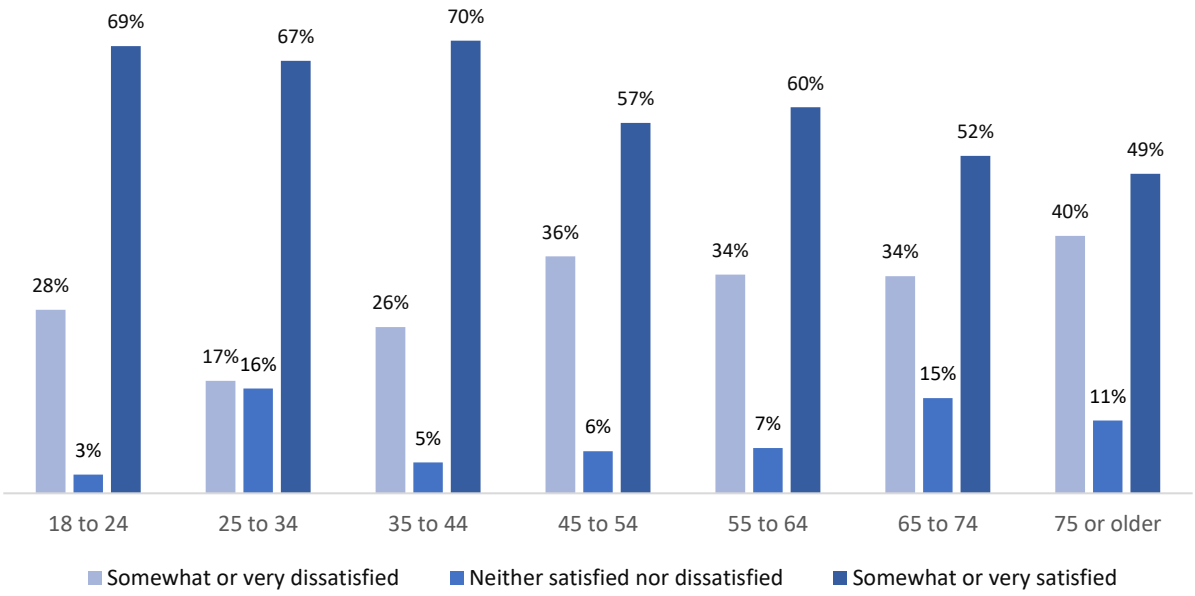

Figure 5: Satisfaction with the quality of their home internet connection by age group

When asked what aspects of their home internet connection could be improved, of the 1,683 individuals who participated in the 2023 IDSS, 738 (44%) provided a substantive response. Many others (323) indicated some satisfaction with their current internet connection by writing in “none," “not sure,” or a similar response; the remaining respondents did not write-in any feedback. Five categories emerged among the respondents who submitted a substantive response. The categories ranging from most to least mentioned included: a) internet speed, b) reliability, c) costs, d) Wi-Fi coverage, and e) service provider options. Respondents could have addressed multiple themes in their open-ended response. The themes and illustrative quotes shared by respondents are presented in Table 3. There were no significant differences in themes mentioned based on rurality or income, but there were some differences in the percentage of respondents across age groups who mentioned reliability, costs, and Wi-Fi coverage. Though, these

differences can be partly attributed to disparities in who provided an open-ended response with a smaller percentage of respondents 75+ (20%) and ages 65-74 (35%) writing in a response compared to between 47% and 57% for all other age groups. One noteworthy difference between age groups that remains when considering differential responses across higher ages was mention of the cost of internet connection. Only 1% of respondents ages 18-24 mentioned the costs compared to 9% among respondents ages 35-44 and 10% among respondents ages 45-54; 3-5% of respondents from all other age groups mentioned costs as an aspect that could be improved.

Table 3: Aspects of home internet connection that could be improved

Category	Illustrative Quotes
Internet speed (n=315)	• *Faster internet* • *It is supposed to be fast speed, but it is not - always slow to connect.* • *Need a higher speed internet.* • *Higher upload and download speeds.* • *We are in a rural area with no access to high-speed internet.* • *Faster speed*
Reliability (n=304)	• *Sometimes it goes off without obvious reason.* • *Connection fails occasionally.* • *Sometimes our internet goes out.* • *More stable connection with multiple devices in use at once.* • *Intermittent services even without storm or weather interference.*
Costs (n=127)	• *Cost, cost, and cost!* • *I wish the internet would cost less.* • *Lower cost.* • *Price. The internet connection is expensive for how much I use it* • *Less expensive would be appreciated.* • *The price could be lower.*
Wi-Fi coverage (n=56)	• *Broader coverages* • *I live in 560 sq. ft, and the internet does not reach in half of my home.* • *Better Wi-Fi range within the home* • *We have a large property, so the range does not cover outside the home very well.* • *Stronger coverage signals throughout the home* • *Better coverage throughout the house*
Service provider options (n=28)	• *[REDACTED] is a terrible company, but my best option.* • *We do not like our provider. They only do wireless. We prefer fiber optic, but that local provider does not cover our area. We only have one choice of internet provider.* • *We are in rural [REDACTED] and can only get internet from our current provider, and they are not improving the speed of our internet. No other providers are in our area.* • *[REDACTED] has a monopoly in Internet service in the area, so when they continually raise their prices, we have no competitive options to lower the cost. [REDACTED] has no reason to keep prices low. You pay it or have no good internet at all.* • *I am limited to only one provider due to my location, so I do not have options for internet service.*

Perceptions of Information and Communication Technology

The majority of Iowa adults (58%) reported they felt very confident using computers, smartphones, or other electronic devices to do the things they need to do online. Others expressed lower levels of confidence; 29% reported they were somewhat confident, 7% reported they were only a little confident, and the remaining 6% reported they were not at all confident. There were significant differences between rural and metro respondents, across the age groups, and between low-income and higher income individuals. There was a 12-percentage point difference between the percentage of rural (52%) and metro (64%) respondents who indicated they were very confident. A majority of respondents in each age group from 18 to 64 reported they were very confident with the highest percentage among respondents ages 25-34 (84%). The percentage of respondents who were very confident was much lower among the two older age groups at 34% for ages 65-74 and 22% for ages 75+. There was a 15-percentage point difference between low-income and higher income respondents; 46% of low-income and 61% of higher income respondents reported they were very confident.

To assess their general experience with and views about electronic technology, survey participants were asked how well a series of statements described them with a four-point scale from not at all well to very well, as shown in Table 4. The first statement was, "when I get a new electronic device, I usually need someone else to set it up or show me how to use it," and approximately 4 out of every 10 respondents reported that the statement described them either somewhat well (24%) or very well (17%). There were significant differences between rural and metro respondents as well as between the age groups. For example, among rural respondents almost 1 out of every 2 respondents reported the statement described them somewhat well (28%) or very well (21%), whereas among metro respondents 21% reported the statement described them somewhat well and 14% reported the statement described them very well. When comparing across age groups, a higher percentage of respondents ages 65-74 and 75+ reported the statement described them very well at 25% and 35%, respectively. The percentage for all other age groups who reported the statement described them very well was either 12% for age groups: 25-34, 35-44, and 55-64 or 15% for age groups: 18-24 and 45-54. Full tables with the percentages by rurality, age group, and income are included in Appendices C-E, respectively.

Table 4: P*erceptions of comfort with digital technology*

	Not at all well	Not too well	Somewhat well	Very well
When I get a new electronic device, I usually need someone else to set it up or show me how to use it	43%	16%	24%	17%
I am more productive because of all of my electronic information devices	10%	13%	42%	35%
I find it difficult to know whether the information I find online is trustworthy	24%	26%	37%	13%
Between phone calls, texts, emails, social media, or other messages, I deal with too much information in my daily life	18%	23%	44%	15%
I often feel frustrated when using technology	32%	32%	25%	11%

The second statement was, "I am more productive because of all of my electronic information devices," and approximately 3 of every 4 respondents reported the statement described them either somewhat well (42%) or very well (35%). There were significant differences between rural and metro respondents, across age groups, and between low-income and higher income respondents (tables for the Rural/Metro, Age, and Income subgroups are in Appendices C-E, respectively). Specifically, 28% of rural respondents reported the statement described them very well compared to 41% of metro respondents. Generally, the percentage of respondents who reported the statement about being more productive due to electronic devices described them decreased as age increased. For example, more than 8 of every 10 respondents in each of the five age groups from 18 to 64 reported the statement described them either somewhat or very well compared to approximately 7 of every 10 respondents ages 65-74 (72%) and less than 6 of every 10 respondents ages 75+ (56%). A smaller percentage of low-income respondents reported the statement described them somewhat well (36%) or very well (29%) compared to higher income respondents where 43% reported the statement described them somewhat well and 36% reported the statement described them very well.

The third statement was, "I find it difficult to know whether the information I find online is trustworthy," and 37% of respondents reported the statement described them somewhat well and another 13% reported the statement described them very well. There were significant differences in responses to this statement between both rural and metro respondents and across different age groups. A higher percentage of rural respondents than metro respondents reported the statement described them somewhat well (41% for rural and 34% for metro) or very well (16% for rural and 10% for metro). The percentage of respondents who reported this statement described them very well ranged from a low of 7% among respondents ages 18-24 to a high of 22% among

respondents ages 75+. The percentage of respondents who reported the statement described them somewhat or very well is listed below by age group:

- Ages 18-24: 27% somewhat well; 7% very well
- Ages 25-34: 34% somewhat well; 10% very well
- Ages 35-44: 28% somewhat well; 13% very well
- Ages 45-54: 32% somewhat well; 8% very well
- Ages 55-64: 43% somewhat well; 16% very well
- Ages 65-74: 51% somewhat well; 13% very well
- Ages 75+: 43% somewhat well; 22% very well

The fourth statement was, "Between phone calls, texts, emails, social media, or other messages, I deal with too much information in my daily life." The majority of respondents either reported the statement described them somewhat (44%) or very well (15%), and the remaining respondents reported the statement did not describe them at all (18%) or not too well (23%). There were no significant differences in responses to this statement between rural and metro respondents, among the age groups, or between low-income and higher income respondents.

The fifth and final statement was, "I often feel frustrated when using technology," and 25% of respondents reported the statement described them somewhat well and another 11% reported the statement described them very well. There were significant differences between rural and metro respondents and across age groups. Specifically, a higher percentage of rural than metro respondents reported the statement either described them somewhat well (29% rural and 22% metro) or very well (13% rural and 9% metro). When comparing the age groups, there was a clear association with age. The percentage who reported the statement described them very well ranged from 0% among the 18-24 years old age group to 33% among the 75+ age group. The percentage of respondents who reported the statement described them somewhat or very well is listed below by age group:

- Ages 18-24: 18% somewhat well; 0% very well
- Ages 25-34: 14% somewhat well; 10% very well
- Ages 35-44: 21% somewhat well; 6% very well
- Ages 45-54: 31% somewhat well; 8% very well
- Ages 55-64: 27% somewhat well; 10% very well
- Ages 65-74: 34% somewhat well; 13% very well
- Ages 75+: 33% somewhat well; 33% very well

Digital Experience and Skills

All survey respondents were asked whether or not they have used a phone or computer to search online for 7 different types of information in the past two years. Respondents were then asked to rate how easy or difficult it was or would be for them to search online for the specified type of information. Table 5 displays responses to these items among the full sample of Iowa adults who took the questionnaire. For each of the 7 types of information, a majority of survey respondents reported that they had searched online for the specified information in the past two years.

Searching for reliable information about a health or medical condition (85%), for information about personal health issues (85%), and for recreational, tourist, or vacation information (84%) yielded the highest percentages, as shown on the left side of Table 5. Searching online for jobs (55%) and for official government statistics or documents (57%) were the types of information where the smallest percentage of respondents reported searching for that information online in the past two years. The majority of survey respondents rated each of the searches as either somewhat or very easy. The type of information search with the highest percentage of respondents indicating searching for that type of information would be very or somewhat easy was for recreational, tourist, or vacation information where 60% selected very easy and 30% selected somewhat easy. On the other hand, searching for official government statistics or documents was rated the most difficult with 22% of respondents selecting somewhat difficult and 9% selecting very difficult.

Table 5: Experience and skills to search online for information

	Have you done this?	**How easy or difficult was it or would it be for you to do?**			
Search online in the past two years for…	Yes	Very easy	Somewhat easy	Somewhat difficult	Very difficult
Job(s)	55%	52%	31%	11%	5%
Information about public health issues	79%	48%	39%	9%	4%
Reliable information about a health or medical condition	85%	42%	39%	13%	5%
Information about personal health issues	85%	43%	41%	12%	4%
Information about government services or resources (e.g., voter registration, DMV, building permits)	75%	43%	37%	14%	7%
Official government statistics or documents	57%	33%	37%	22%	9%
Recreational, tourist, or vacation information	84%	60%	30%	7%	4%

There were differences in reported experience with each search type: between rural and metro respondents for five of the seven items, across age groups on all seven items, and on income for one item. For each of the seven types of information searches, the percentage of metro respondents was higher than the percentage of rural respondents reporting the experience, as shown in Table 6. However, the difference was NOT statistically significant for information about public health issues or reliable information about a health or medical condition. The largest

significant differences between rural and metro respondents was a 17-percentage point difference for searching for jobs online and a 15-percentage point difference for information about government services or resources. A higher percentage of younger respondents generally reported searching online for the listed information than older respondents. In fact, the smallest percentage across age groups for each item was among respondents 75+, as shown in the last column of Table 6. On the other hand, the percentage was highest among respondents ages 18-24 for five of seven items (all except: official government statistics or documents; recreational, tourist, or vacation information). The only significant difference based on income was for information about government services or resources where there was a 12-percentage point difference between low-income (65%) and higher income (77%) respondents. Full tables for income are included in Appendix E.

A significantly higher percentage of metro (59%) than rural (43%) respondents rated searching for jobs online as very easy. There were no significant differences between rural and metro respondents on the other six items. There were significant differences in easy/difficult rating for all seven information searches across age groups. For each of the types of information searches, the age group 75+ had the lowest percentage of respondents who reported the search was or would be very easy (range: 19% to 33%) and highest percentage who reported the search would be very difficult (range: 11% to 26%). There were no statistically significant differences between low-income and higher income respondents on the easy/difficulty ratings.

Table 6: Experience searching online in the past two years by rurality and age

Search online in the past two years for…	Rurality		Age Group						
	Rural	Metro	18-24	25-34	35-44	45-54	55-64	65-74	75+
Job(s)	45%	62%	87%	81%	70%	60%	52%	19%	9%
Information about public health issues	77%	81%	89%	87%	82%	87%	80%	71%	56%
Reliable information about a health or medical condition	82%	87%	93%	91%	91%	89%	81%	80%	65%
Information about personal health issues	81%	88%	98%	91%	85%	90%	82%	80%	66%
Information about government services or resources (e.g., voter registration, DMV, building permits)	67%	82%	91%	86%	86%	81%	72%	66%	41%
Official government statistics or documents	51%	61%	54%	61%	69%	62%	55%	49%	37%
Recreational, tourist, or vacation information	81%	87%	88%	96%	90%	87%	81%	78%	61%

All survey respondents were asked whether or not they have used a phone or computer to complete a variety of tasks in the past two years. Respondents were then asked to rate how easy or difficult each task was or would be (even if they had not done it). Table 7 displays responses to these items among the full statewide sample in order from lowest reporting use, enroll in Internet subsidy programs (7%), to highest reporting use, use email (95%). The two tasks with the next smallest percentages indicating they had done that activity in the past two years were also related to interactions with the government. Specifically, only 28% of respondents reported they used a phone or computer to apply for or manage government benefits and only 33% reported they used a phone or computer to access or apply for government benefits. Perhaps unsurprisingly, use and perception of ease were associated. The task where the respondents had the least experience, enroll in internet subsidy programs, was also the task where the largest percentage indicated that task would be somewhat difficult (23%) or very difficult (12%).[1] Relatedly, the task where the highest percentage of respondents reported they had done that task

[1] Among the subset of respondents who reported they had enrolled in an Internet subsidy program in the past two years, 45% indicated the task was very easy, 32% somewhat easy, 18% somewhat difficult, and 5% very difficult.

in the past two years, use email, was also the task where the highest percentage indicated the task would be very easy (81%) and the lowest percentage indicated it would be very difficult (2%).

Table 7: Experience and perceptions of difficulty with digital tasks

	Have you done this?	How easy or difficult was it or would it be for you to do?			
Used a phone or computer to…	Yes	Very easy	Somewhat easy	Somewhat difficult	Very difficult
Enroll in Internet subsidy programs (Affordable Connectivity Program)	7%	29%	36%	23%	12%
Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)	28%	33%	37%	19%	12%
Access or apply for government services	33%	36%	33%	20%	11%
Apply for job(s)	41%	51%	33%	10%	6%
Find tools or services to protect the privacy of your personal data	45%	38%	32%	21%	9%
Complete a course or training to improve your job skills	52%	53%	31%	10%	6%
Use a video application, such as Zoom or Teams, for work, school, or telehealth	70%	53%	29%	11%	7%
Create a document (e.g., Google Doc or Microsoft Word file)	73%	62%	20%	9%	8%
Access/use online banking or financial services	85%	67%	23%	6%	4%
Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat	86%	79%	13%	4%	4%
Shop online	90%	77%	16%	3%	3%
Use email	95%	81%	15%	3%	2%

There were statistically significant differences between rural and metro respondents on 6 of 12 items, across age groups on 11 of 12 items, and between low and higher income respondents on 4 of 12 items. The tasks where there were statistically significant differences between rural and metro respondents are shown in Table 8. For each of the tasks, the percentage of metro respondents was significantly higher than the percentage of rural respondents who had reported they had used either a phone or computer to complete the task in the past two years. The largest

gap was a 17-percentage point difference in completing a course or training to improve your job skills between rural (43%) and metro (60%) respondents.

Table 8: Experience with digital tasks – significant differences by rurality

Used a phone or computer to…	Rural	Metro
Apply for job(s)	33%	47%
Find tools or services to protect the privacy of your personal data	41%	49%
Complete a course or training to improve your job skills	43%	60%
Use a video application, such as Zoom or Teams, for work, school, or telehealth	61%	77%
Create a document (e.g., Google Doc or Microsoft Word file)	64%	79%
Access/use online banking or financial services	81%	88%

There were statistically significant differences across the age groups on all items except "enroll in Internet subsidy programs." The tasks with significant differences based on age are shown in Table 9. For each of the tasks, the age group where the smallest percentage reported completing that task in the past two years were respondents ages 75+.

Table 9: Experience with digital tasks – significant differences by age group

Used a phone or computer to…	18-24	25-34	35-44	45-54	55-64	65-74	75+
Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)	19%	24%	30%	21%	29%	47%	9%
Access or apply for government services	39%	37%	40%	33%	29%	38%	11%
Apply for job(s)	86%	65%	57%	41%	32%	9%	3%
Find tools or services to protect the privacy of your personal data	46%	51%	50%	42%	54%	39%	25%
Complete a course or training to improve your job skills	76%	79%	70%	69%	42%	18%	6%
Use a video application, such as Zoom or Teams, for work, school, or telehealth	93%	89%	85%	84%	60%	48%	25%
Create a document (e.g., Google Doc or Microsoft Word file)	99%	94%	85%	77%	65%	48%	39%
Access/use online banking or financial services	93%	97%	92%	96%	78%	78%	55%
Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat	99%	97%	94%	96%	80%	74%	61%
Shop online	100%	97%	97%	99%	83%	87%	65%
Use email	100%	97%	97%	100%	90%	96%	83%

Respondents were also asked how easy or difficult it would be for them to complete all 12 tasks using a phone or computer regardless of whether or not they have completed the task in the past two years. The distribution for the full sample is displayed above in Table 7 on page 19. The percentage of respondents who selected very easy ranged from a low of 29% for enroll in an Internet subsidy program to a high of 81% for use email. For 8 of the 12 tasks, a majority of respondents reported that the task was or would be very easy for them to complete. In the four tasks where less than a majority of all respondents rated the task as very easy, almost 2 of every three respondents considered the task either very or somewhat easy. The four tasks included: enroll in Internet subsidy programs (very easy 29%; somewhat easy 36%), apply for or manage government benefits (very easy 33%; somewhat easy 37%), access or apply for government services (very easy 36%; somewhat easy 33%), and find tools or services to protect the privacy of your personal data (very easy 38%; somewhat easy 32%). Perceptions of how easy/difficult each task would be to complete were significantly different between rural and metro respondents

for 7 of the 12 tasks (Table 10) and there were significant differences across age groups for all tasks (Table 11). There were no statistically significant differences between low-income and higher income respondents in how easy/difficult they perceived the tasks. The tasks with significant differences are presented in Table 10 for rurality and Table 11 for age group, with the percentage who rated that task as very easy displayed for each group. Full tables for all subgroup items with the full set of response options are in Appendices C-E.

Table 10: Percent who rated each task "very easy" – significant differences by rurality

Used a phone or computer to…	Rural	Metro
Apply for job(s)	44%	57%
Complete a course or training to improve your job skills	46%	58%
Use a video application, such as Zoom or Teams, for work, school, or telehealth	48%	57%
Create a document (e.g., Google Doc or Microsoft Word file)	56%	67%
Access/use online banking or financial services	61%	72%
Shop online	72%	82%
Use email	76%	85%

Note: The table only displays tasks where responses between rural and metro respondents were significantly different. All tasks and the percent who selected, "somewhat easy ," somewhat difficult," and "very difficult" are included in the tables in Appendix C.

Table 11: Percent who rated each task "very easy" – significant differences by age group

Used a phone or computer to…	18-24	25-34	35-44	45-54	55-64	65-74	75+
Enroll in Internet subsidy programs (Affordable Connectivity Program)	15%	45%	36%	32%	20%	17%	26%
Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)	23%	46%	40%	37%	24%	22%	23%
Access or apply for government services	30%	49%	48%	35%	28%	23%	27%
Apply for job(s)	67%	72%	61%	50%	37%	28%	23%
Find tools or services to protect the privacy of your personal data	41%	54%	47%	37%	30%	25%	16%
Complete a course or training to improve your job skills	57%	75%	62%	55%	41%	32%	26%
Use a video application, such as Zoom or Teams, for work, school, or telehealth	72%	78%	63%	52%	41%	27%	25%
Create a document (e.g., Google Doc or Microsoft Word file)	92%	85%	68%	61%	51%	40%	32%
Access/use online banking or financial services	55%	87%	71%	76%	65%	53%	41%
Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat	98%	95%	89%	83%	67%	58%	60%
Shop online	96%	91%	87%	86%	70%	57%	51%
Use email	94%	94%	83%	84%	73%	72%	64%

Note: The percent who selected, "somewhat easy," somewhat difficult," and "very difficult" are included in the tables in Appendix D.

All participants were asked to estimate their level of skill in completing 24 different tasks on a four-point scale with options: I can do this well/easily, I can do this but not well, I don't know how to do this at all, or I am not familiar with the task. The last two response options were combined into a single category, I cannot do this at all, for the main report. However, the full scale is included in tables in Appendix B. The tasks were presented to the survey participants in two sets. The first set had ten items (Table 12) and the second set had fourteen items (Table 13). In both tables, the tasks are arranged in descending order based on the percentage of survey respondents in the I cannot do this at all category. For the first set of items, shown in Table 12, the task with the highest percentage of I cannot do this at all was make changes or edits to a

PowerPoint, Excel spreadsheet, or Word file someone else created (27%) followed by use shortcut keys (27%). For 9 of the 10 items in Table 12, a majority of survey respondents reported they could do the task well/easily. The lone exception was that only 41% of respondents reported they could use shortcut keys easily/well, 32% reported they could use shortcut key but not well, and the remaining 27% reported they either didn't know how to use them at all or were not familiar with the term/task.

Table 12: Estimated skill level at completing digital tasks

	I can do this well/easily	I can do this but not well	I cannot do this at all
Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created	55%	18%	27%
Use shortcut keys	41%	32%	27%
Bookmark a website	70%	14%	16%
Share files and content using tools like attachments	69%	17%	14%
Open a new tab in my browser	77%	10%	13%
Save files or content from the internet (e.g., documents, pictures, music, videos, web pages)	70%	19%	11%
Open files downloaded from the internet	73%	17%	10%
Look for information online using a search engine (e.g., Google)	86%	8%	5%
Send an email	88%	7%	4%
Send a text message	92%	4%	4%

Note: Response options "I don't know how to do this at all" and "I am not familiar with the terms or task" were combined into a single category in this table, "I cannot do this at all." Tables in Appendix B include the breakdown with all four response categories.

There were statistically significant differences in estimated skill levels between rural/metro respondents for 7 of 10 tasks, across age groups for 10 of 10 tasks, and between low-income/higher income respondents for 3 of 10 tasks. To illustrate these differences, Tables 13-15 display the percentage in each group who reported they could do the listed task well/easily. These tables only present the tasks where the widest range in ratings on the overall scale significantly differed and only present the "I can do this well/easily" category for the age groups, however, the tables in Appendices C-E display all tasks and all response options.

For each of the seven tasks where there were statistically significant differences between rural and metro respondents (Table 13), the percentage of respondents who selected "I can do this well/easily" was lower for rural (range 34% to 70%) than metro (range from 46% to 83%) respondents. Conversely, the percentage of respondents in the "I cannot do this at all" category was higher for rural (range 13% to 35%) than metro (range from 8% to 23%) respondents. In one example, for the task, "open a new tab in my browser," among rural respondents 70% reported they could do the task well/easily, 13% indicated they could do it but not well, and 17% reported they could not do it all compared to metro respondents where 83% indicated they could do the task well/easily, 8% could do it but not well, and 9% could not do it at all.

Once again, there were statistically significant differences across the age groups for all ten tasks. Table 14 displays the percentage of respondents in each age group who reported they could do the task well/easily. For each of the ten tasks, the percentage who reported they could do the task well/easily was lowest among the 75 or older age group, followed by the 65 to 74 age group, followed by 55 to 64 age group.

There were three tasks that differed significantly between low-income and higher-income respondents. These tasks are presented in Table 15. For each of the three tasks, the percentage of respondents who could do the task well/easily was lower for low-income (49%-74%) than higher income respondents (55%-78%) while the percentage in the I cannot do this task at all category was higher for low-income (17%-40%) than higher income (10%-25%) respondents.

Table 13: Estimated skill level at completing digital tasks – items with significant differences by rurality

	Rural			Metro		
	I can do this well/easily	**I can do this but not well**	**I cannot do this at all**	**I can do this well/easily**	**I can do this but not well**	**I cannot do this at all**
Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created	47%	18%	36%	61%	18%	21%
Use shortcut keys	34%	34%	33%	46%	31%	23%
Bookmark a website	61%	19%	20%	77%	10%	13%
Share files and content using tools like attachments	62%	22%	17%	75%	14%	11%
Open a new tab in my browser	70%	13%	17%	83%	8%	9%
Save files or content from the internet (e.g., documents, pictures, music, videos, web pages)	60%	25%	15%	77%	15%	8%
Open files downloaded from the internet	65%	22%	12%	79%	12%	9%

Note: Response options "I don't know how to do this at all" and "I am not familiar with the terms or task" were combined into a single category in this table, "I cannot do this at all." Tables in Appendix C include the breakdown with all four response categories.

Table 14: Estimated skill level at completing digital tasks – items with significant differences by age group

I can do this well/easily	18-24	25-34	35-44	45-54	55-64	65-74	75+
Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created	81%	88%	71%	54%	41%	26%	15%
Use shortcut keys	48%	69%	57%	43%	27%	20%	11%
Bookmark a website	95%	93%	83%	77%	62%	41%	34%
Share files and content using tools like attachments	90%	96%	80%	82%	57%	44%	33%
Open a new tab in my browser	100%	99%	90%	87%	73%	52%	34%
Save files or content from the internet (e.g., documents, pictures, music, videos, web pages)	98%	98%	81%	68%	58%	45%	38%
Open files downloaded from the internet	100%	97%	83%	72%	63%	51%	42%
Look for information online using a search engine (e.g., Google)	100%	99%	97%	95%	79%	73%	55%
Send an email	94%	99%	93%	95%	82%	80%	74%
Send a text message	100%	99%	96%	99%	91%	84%	73%

Note: To improve readability, only response option "I can do this well/easily" is shown. Tables in Appendix D include the breakdown with all four response categories.

Table 15: Estimated skill level at completing digital tasks – items with significant differences by income

	Low-income			Higher income		
	I can do this well/easily	**I can do this but not well**	**I cannot do this at all**	**I can do this well/easily**	**I can do this but not well**	**I cannot do this at all**
Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created	49%	11%	40%	55%	19%	25%
Open a new tab in my browser	74%	4%	22%	78%	11%	11%
Open files downloaded from the internet	62%	21%	17%	75%	16%	9%

Note: Response options "I don't know how to do this at all" and "I am not familiar with the terms or task" were combined into a single category in this table, "I cannot do this at all." Tables in Appendix E include the breakdown with all four response categories.

For the second set of items, which are arguably more complex and shown in Table 16, the percentage of respondents who reported they could do the task well/easily ranged from 12% for design/build a website to 68% for create strong passwords to protect my online information. There were only three (of 14) tasks in this set where a majority of respondents reported they could do that task well/easily. The tasks included: look out for and try to avoid phishing attempts (53%), know how to solve some routine hardware/software problems (56%), and create strong passwords to protect my online information (68%).

The estimated skill levels were significantly different between rural/metro respondents for 12 of the 14 tasks (Table 17), across age groups for all 14 tasks (Table 18), and between low-income and higher income respondents (Table 19) for 10 of 14 tasks.

For each of the 12 tasks where there were statistically significant differences between rural and metro respondents (Table 17), the percentage of respondents who selected I can do this well/easily was lower for rural (8%-61%) than metro (15%-73%) respondents. Relatedly, the percentage of respondents in the I cannot do this at all category was higher for rural (9%-78%) than metro (range from 7% to 65%) respondents.

There were statistically significant differences across the age groups for all ten tasks. Table 18 displays the percentage of respondents in each age group who reported they could do the task well/easily. For each of the 14 tasks, the percentage who reported they could do the task well/easily was lowest among the 75 or older age group, followed by the 65 to 74 age group.

There were 10 tasks where there were statistically significant differences between low-income and higher-income respondents. These tasks are presented in Table 19. For each of the three tasks, the percentage of respondents who could do the task well/easily was lower for low-income (12%-56%) than it was for higher income respondents (20%-70%) while the percentage in the “I cannot do this task at all” category was higher for low-income (18%-74%) than it was for higher income respondents (6%-65%).

Table 16: Estimated skill level at completing more complex digital tasks

	I can do this well/easily	I can do this but not well	I cannot do this at all
Design/Build a website	12%	17%	71%
Edit a website or webpage	17%	22%	60%
Use online content confidently, knowing what licenses or permissions may be required	19%	23%	59%
Create new content from existing online images, music, or videos	27%	28%	45%
Share video content I created online	37%	24%	40%
Edit content produced by others like editing photos or videos	29%	36%	35%
Produce digital content like text, tables, images, or audio/video files	43%	30%	27%
Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)	44%	30%	27%
Use digital tools or online information to help me solve a technological or non-technological problem	44%	31%	24%
Look out for and try to avoid phishing attempts	53%	25%	22%
Take steps to protect my devices (e.g., using anti-virus software, strong passwords)	47%	34%	20%
Know how to solve some routine hardware/software problems (e.g., close program, re-start computer, re-install/update program, check internet connection)	56%	25%	19%
Find support and assistance when a technical problem occurs or when using a new device, program or application	47%	36%	16%
Create strong passwords to protect my online information	68%	24%	8%

Note: Response options "I don't know how to do this at all" and "I am not familiar with the terms or task" were combined into a single category in this table, "I cannot do this at all." Tables in Appendix B include the breakdown with all four response categories.

Table 17: Estimated skill level at completing digital tasks – items with significant differences by rurality

	Rural			Metro		
	I can do this well/easily	**I can do this but not well**	**I cannot do this at all**	**I can do this well/easily**	**I can do this but not well**	**I cannot do this at all**
Design/Build a website	8%	14%	77%	15%	20%	65%
Edit a website or webpage	13%	20%	67%	21%	24%	55%
Use online content confidently, knowing what licenses or permissions may be required	14%	21%	64%	22%	24%	53%
Share video content I created online	29%	25%	46%	42%	23%	35%
Edit content produced by others like editing photos or videos	24%	37%	39%	34%	34%	32%
Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)	37%	31%	32%	50%	29%	22%
Use digital tools or online information to help me solve a technological or non-technological problem	38%	30%	32%	49%	32%	19%
Look out for and try to avoid phishing attempts	43%	29%	27%	61%	21%	17%
Take steps to protect my devices (e.g., using anti-virus software, strong passwords)	42%	33%	25%	50%	35%	15%
Know how to solve some routine hardware/software problems (e.g., close program, re-start computer, re-install/update program, check internet connection)	50%	26%	24%	62%	24%	14%
Find support and assistance when a technical problem occurs or when using a new device, program or application	42%	36%	21%	52%	36%	13%
Create strong passwords to protect my online information	61%	30%	9%	73%	20%	7%

Note: Response options "I don't know how to do this at all" and "I am not familiar with the terms or task" were combined into a single category in this table, "I cannot do this at all." Tables in Appendix C include the breakdown with all four response categories.

Table 18: Estimated skill level at completing digital tasks – items with significant differences by age group

I can do this well/easily	18-24	25-34	35-44	45-54	55-64	65-74	75+
Design/Build a website	16%	27%	22%	5%	5%	1%	<1%
Edit a website or webpage	26%	37%	29%	11%	9%	4%	2%
Use online content confidently, knowing what licenses or permissions may be required	21%	33%	35%	15%	11%	5%	4%
Create new content from existing online images, music, or videos	43%	48%	38%	22%	19%	11%	6%
Share video content I created online	65%	67%	53%	31%	21%	12%	6%
Edit content produced by others like editing photos or videos	49%	46%	44%	22%	24%	10%	7%
Produce digital content like text, tables, images, or audio/video files	53%	71%	62%	36%	32%	21%	14%
Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)	57%	68%	61%	43%	34%	23%	11%
Use digital tools or online information to help me solve a technological or non-technological problem	50%	79%	61%	42%	34%	19%	13%
Look out for and try to avoid phishing attempts	59%	82%	64%	51%	39%	39%	29%
Take steps to protect my devices (e.g., using anti-virus software, strong passwords)	46%	68%	58%	42%	38%	36%	25%
Know how to solve some routine hardware/software problems (e.g., close program, re-start computer, re-install/update program, check internet connection)	56%	86%	70%	57%	47%	36%	29%
Find support and assistance when a technical problem occurs or when using a new device, program or application	51%	74%	60%	40%	39%	29%	30%
Create strong passwords to protect my online information	78%	80%	77%	70%	67%	52%	44%

Note: To improve readability, only response option "I can do this well/easily" is shown. Tables in Appendix D include the breakdown with all four response categories.

Table 19: Estimated skill level at completing digital tasks – items with significant differences by income

	Low-income			Higher income		
	I can do this well/easily	**I can do this but not well**	**I cannot do this at all**	**I can do this well/easily**	**I can do this but not well**	**I cannot do this at all**
Use online content confidently, knowing what licenses or permissions may be required	12%	14%	74%	20%	24%	56%
Edit content produced by others like editing photos or videos	21%	32%	47%	31%	36%	33%
Produce digital content like text, tables, images, or audio/video files	31%	30%	39%	45%	30%	25%
Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)	35%	24%	41%	45%	31%	24%
Use digital tools or online information to help me solve a technological or non-technological problem	31%	35%	34%	47%	31%	23%
Look out for and try to avoid phishing attempts	40%	21%	39%	55%	26%	19%
Take steps to protect my devices (e.g., using anti-virus software, strong passwords)	36%	29%	35%	48%	35%	16%
Know how to solve some routine hardware/software problems (e.g., close program, re-start computer, re-install/update program, check internet connection)	49%	17%	35%	58%	26%	16%
Find support and assistance when a technical problem occurs or when using a new device, program or application	40%	31%	28%	49%	37%	14%
Create strong passwords to protect my online information	56%	27%	17%	70%	24%	6%

Note: Response options "I don't know how to do this at all" and "I am not familiar with the terms or task" were combined into a single category in this table, "I cannot do this at all." Tables in Appendix E include the breakdown with all four response categories.

All survey respondents were asked if any of their devices failed to function properly at any time during the past 6 months. Those who reported that they had a device fail during the specified time period were asked which type of device failed most recently and how they addressed the problem. Almost half of the participants (47%) had a device that failed to function properly in the past 6 months, as shown on the left side of Figure 6. There were no significant differences between rural/metro and low-income/higher income respondents. There were significant differences across age groups. More than half of the respondents ages 45 to 54 (59%), ages 35 to 44 (57%), and 18 to 24 (52%) reported a device failure. Respondents ages 65 to 74 (36%) and ages 25 to 34 (37%) reported the lowest failure rates.

The type of device that failed is shown on the right side of Figure 6. Laptop computers (29%) followed by smartphone/cell phone (28%) were the most common devices identified as having failed.

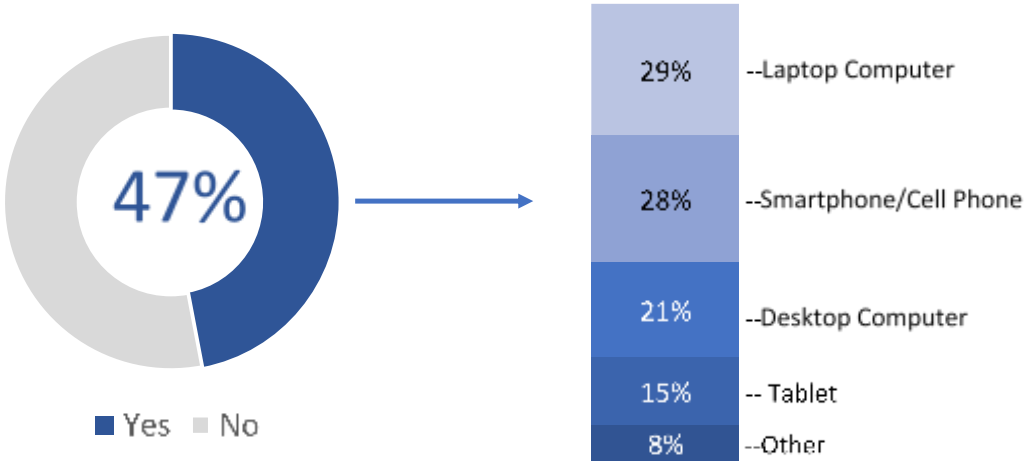

Figure 6: Respondents with devices that malfunctioned in the past 6-months

Finally, survey respondents who had a device fail in the past 6 months were asked how they dealt with the problems they encountered. The question had nine response options and allowed respondents to select multiple options. We collapsed the responses into three categories for the analyses in this report. The first category is for respondents who were able to fix the device either by restarting it, using their knowledge and experience with hardware/software, or receiving help from friends or family. Approximately 6 out of every 10 respondents were in this category (60%). The second category includes individuals who reported having sought help from user support, online, a computer store, or community institution such as a school, library, or church. Almost 4 out of every 10 respondents (37%) reported they sought help from one of these sources. The last category is for individuals who reported they were unable to fix the device, and this category includes 27% of the survey respondents. We do note that individuals could select multiple categories, and, for example, some of the individuals who sought help may have ultimately been able to fix their device while others may not have been able to fix the device. There were no statistically significant differences based on rurality, age group, or income in how the respondents reported the way they addressed the issue they encountered.

Focus Group Findings

To supplement the survey findings, qualitative focus groups were conducted with three of the covered groups: aging individuals (60 years old or older), English Language Learners, and incarcerated individuals. The focus groups with incarcerated individuals were supplemented with focus groups with administrators and personnel at correctional facilities. It is important to note that the qualitative design of this work does not allow findings to be generalized to the broader populations in these groups.

English Language Learners and Aging Iowans

Background & Methods

This section summarizes the findings from four focus groups conducted with English Language Learners (ELL) in Des Moines and Ottumwa, and aging Iowans in Waterloo and Marshalltown. Participation in the English Language Learners focus groups was restricted to native Spanish speakers who were learning or have learned English as a second language. Participation in the Aging Iowans focus groups was restricted to individuals who were age 60 and older. To aid the discussion, a semi-structured moderator guide was developed, covering topics similar to those covered in the statewide survey such as access to and use of internet and devices, perceptions of digital skills, internet access, quality and reliability, and value of the internet. Additionally, a brief background questionnaire was developed to collect participants demographic information. Before commencing the focus group discussion, participants were provided with an IRB consent form and completed the background questionnaire. The discussions were audio recorded, and each focus group session lasted approximately 75 minutes. English Language Learner groups were moderated by Mariana Calderon Quiroz and the Aging Iowans groups were moderated by Mary Losch.

Focus Group Recruitment

Recruitment of Aging Iowan participants was facilitated by Kyra Hawley at the Iowa Department on Aging and recruited by Greg Zars and Cara Ferch from the Northeast Iowa Area Agency on Aging (NEI3). The recruitment of the English Language Learners was facilitated by Monica Stone from the Iowa Department of Human Rights. Flyers promoting the focus groups were created and distributed to potential participants through a variety of organizational networks. The promotion of the focus groups was further extended through their social media platforms and disseminated via email listservs to relevant organizations with whom they collaborate or serve. Interested individuals contacted CSBR and all received reminders 1-2 days prior to the groups. As a result of these efforts, nine participants engaged in the Aging Iowans focus groups and six participants engaged in the English Language Learners focus groups. As sometimes occurs, multiple individuals who initially registered for participation did not attend the groups.

A total of four focus groups were conducted. In April 2023, focus groups with English Language Learners were conducted in Des Moines and Ottumwa. The Des Moines focus group was converted to an in-depth interview due to low recruitment numbers and poor turnout among

registered participants. In May 2023, focus groups with aging Iowans were conducted in Waterloo and Marshalltown (see Table 14).

Table 20: Focus Group Dates, Locations and Attendance

Date	Location	Group	# of Participants
4/1/23	Des Moines, IA	English Language Learners	1
4/29/23	Ottumwa, IA	English Language Learners	5
5/4/23	Waterloo, IA	Aging Iowans	6
5/24/23	Marshalltown, IA	Aging Iowans	3

Participant Profiles and Findings

The focus groups provided insights into how English Language Learners and Aging Iowans access and use the internet and devices, how they feel about their digital skills, their assessment of internet value and quality, and what they feel they need to know. The focus group topics were grouped by access to and use of internet and devices, digital skills and training, internet access, quality and reliability, and value of internet at societal and personal level.

English Language Learners

Demographic Profile

The six focus group participants included more women than men. The age of participants ranged from 18 to 44, and females between 25 to 34 was the largest group represented. All participants were Hispanic/Latino/a. Three of them had two children under the age of 18 within their households. Two participants were currently married, while four were unmarried or separated.

The participants lived in a range of locations including a metro area (one participant), a large town (three participants), and a small town (one participant). They were all employed, including self-employment, in jobs with a range of annual gross household incomes. Four participants reported incomes below $25,000 and two participants had an annual gross household income in the range of $50,000 to less than $100,000. Regarding education, two participants had completed some education beyond high school, two held an associate degree or a 2-year degree, one participant was a high school graduate and the remaining reported they did not finish high school.

Key Findings

Access to and Use of Internet and Devices

Participants in the ELL focus groups reported typically connecting to the internet using devices such as smartphones, laptops, or personal computers via Wi-Fi. One participant also mentioned using an Apple watch and Apple TV to access the internet. Aside from home, common locations for internet use include workplaces or schools. Two participants mentioned they preferred to use

cellular data service on their personal phone (instead of Wi-Fi) while away from home for privacy reasons.

Internet use among these participants spanned a variety of activities and tasks, such as remote work, school assignments, communication through email and social media, and even exercise routines. These activities were reportedly usually performed on a daily basis by many participants. Participants with children also reported relying on the internet to correspond with and receive information from their children's school.

Digital Skills and Training

Most of the ELL participants believed their digital or computing skills were adequate. One participant stated:

> *I'm pretty familiar with how to work everything. If I don't know how to, I will look it up on Google or YouTube videos.*

Important digital Skills and Challenges

English Language Learners reported experiencing language barriers. Participants described experiences with language-related challenges, which can interfere with their ability to obtain information. One woman shared:

> *Sometimes apps or slides are not translated…Getting information can be difficult because you're not able to understand it from the beginning. And sometimes you have to get help from someone else.*

Additionally, a few participants faced dual challenges in acquiring new digital skills. These difficulties arose from not only language barriers but also their lack of familiarity with upgrades such as a new/different digital operating system, such as when moving to Android mobile system from iPhone operating system.

Many participants responded that the most important digital skills required today are to be able to communicate in many ways. A few expressed the need to learn more about how to get and share information online, which could be beneficial for their family members or others. Two examples of responses reflect this emphasis among participants.

> *Basic communication skills through computers are important. I think communication in any kind of way, either through writing an email or face to face on Zoom and FaceTime, or just a call.*

> *Just to stay in communication with the world. I guess we all learned that back in the pandemic season. There was no other way to communicate with others but texting and calling and sending out emails.*

Resources and training

The focus group discussions explored resources participants could use to learn new digital skills. Most felt they had access to some form of support (such as an IT help desk or a computer class) or a person (like a family member, co-worker, or IT technician) from whom they could learn new

digital skills. Two participants expressed the necessity to learn new skills independently, particularly through resources like Google (or another search engine) or YouTube Tutorial.

When asked about their preferences for receiving training on digital skills, the answers varied. Most participants indicated that their training preference depends on their learning style and real-world challenges they encountered. In-person trainings in instructional settings, such as workshops or computer classes, were favored for more complex subjects that need in-depth explanations. One female participant pointed out,

> *Online classes do not work for everyone, have some in-person instruction/classes. Those people that go to classes can then help others.*

Internet Access, Quality and Reliability

Most participants responded that multiple internet service providers like Mediacom, CenturyLink, Dish or DIRECTV are accessible in their neighborhood. However, for those living in smaller towns, the available choices are more limited, leading to complaints about various technical issues they have encountered and unreliable internet services. Certain participants noted the quality of these internet options differ by service providers. They noticed a significant dip in internet performance, especially when the connection was accessed by multiple users in their household, not operating at its usual efficiency. This was reflected in the following comment.

> *Connection is worse when multiple people use it …It doesn't work as well as usual when multiple people use it.*

Barriers to quality internet access

Language and high pricing were the main barriers to accessing quality internet reported by the ELL focus group participants. The participants specifically noted that translation was frequently required during the communication process to get internet services. A woman who spoke Spanish (translated by moderator) asked,

> *How are we going to ask for a service if we cannot communicate?*

And for some English learners and their families, the cost of premium internet services may be out of the price range they can afford. Participants identified this barrier could limit their ability to access quality internet services that often deliver faster speeds, higher reliability, and better customer support. A young man shared,

> *Maybe I can try to find a different company to see if it does the services better… [REDACTED] has some kind of service, but it's way more expensive.*

Overall, participants considered the quality of their current internet connection to be acceptable but saw room for improvement. Some called for reduced pricing of their current internet service plan, while others expressed a desire for an enhanced internet connection with greater speed and stability. Despite this, they considered their current cost of internet connection as affordable.

Value of internet at societal and personal level

Participants discussed many topics and challenging scenarios about the value of the internet at both the societal and the individual level. All agreed that the internet has facilitated their daily life in multiple ways. They appreciated the internet for convenience and easier access to education and work, allowing them to engage in online studies, online shopping, remote work, online communication, and to get and share information more efficiently than ever before. Several illustrative comments are listed below.

> *It makes your life easier. Super easier with everything.*
>
> *I can google and find anything that you are trying to know about.*
>
> *It makes school easier because I know back when we didn't have the internet you'd have to take in person class and now it's more you can do online and have a job. It's just easier to do education, better access to education.*

Safety and security

Participants raised additional concerns regarding online safety and security issues, particularly in relation to their children's internet and technology usage. They expressed a strong desire to safeguard their children's online activities, driven by the worries about potential exposure to inappropriate content and the risks associated with online activities. Reflecting this perspective, participants shared their thoughts, one woman stating,

> *It's useful, but it's dangerous at the same time, especially for your kids. Kids can go in and find anything*.

Participants also emphasized the vulnerability of personal information in online activities, as reflected in this comment:

> *It's easier for hackers to get your information and for scammers to call you.*

A few participants expressed frustration over the rapid pace of new internet technology and the growing dependence on the internet in daily life. They expressed concerns about the potential consequences, such as increased reliance on instant access to information, and a reduced ability to recall information from memory. These participants voiced a sense of unease about the societal implications of this digital dependency, and the importance of maintaining a balance between leveraging the benefits of the internet while remaining mindful of the potential risks it entails.

Summary

The findings of the focus groups suggest that, in general, English Language Learners would benefit from more accessible and enhanced internet services (with faster speed and stability). They emphasized the importance of having at least fundamental digital skills. Across all focus groups, the consensus was that digital skills related to getting information and communicating on the internet are crucial. They highlighted regular struggles in getting information from the internet due to limited language proficiency, lack of familiarity with digital devices and services, and/or the high price of quality internet. These obstacles can reinforce digital inequalities and

potentially prevent the benefits of quality internet from reaching English Language Learners and their communities.

Participants expressed interest in receiving training that is engaging and focusing on real-world scenarios that they may encounter. Thus, providing training through online tutorials, in-person walkthrough, and instructor-led sessions is desirable. At the same time, participants noted that with the growing prevalence of digital technology in daily life, issues around privacy and safety have become a concern for many.

Aging Iowans

Demographic Profile

The majority of participants were women, only two participants were men. The racial background of participants resembled the overall makeup of the state of Iowa, with eight participants self-identifying as white. In terms of household composition, five lived with one or two other adults in their household and none lived with their children, while four of the participants lived alone. Three participants were currently married, while others were divorced or widowed.

Participants represented aging Iowans residing in diverse areas, ranging from rural communities to large cities with more than 150,000 people. Four participants lived in a city of varying sizes, ranging from a city with a population of 50,000 to less than 150,000 people to larger cities with populations exceeding 150,000 people. Four lived in a small town of less than 5,000 people or large town of 5,000 to less than 25,000 people. Only one participant lived in a rural setting (not on a farm). Household annual income ranged from $15,000 to $75,000, three reported an annual income between $50,000 and $75,000, five falling within the $15,000 and $35,000 range, and one reported in the range of $35,000 to $50,000. Six of the participants were retired, two participants were employed, and one participant reported they were unable to work. Regarding education background, seven participants did not have a college degree, while two held a 4-year college degree or a trade certification.

Participants reported experiencing physical or cognitive difficulties across various areas. Five participants reported they had difficulty communicating, remembering, concentrating, or making decisions, while two had serious difficulty walking or hearing. Two participants reported that they utilized special equipment or software to facilitate the use of digital devices due to these difficulties.

Key Findings

Access to and Use of internet and Devices

Most participants reported that they access the internet via either smartphones, laptops, or personal computers. Several mentioned they relied on internet service providers like Verizon and Mediacom for their internet connection. However, one woman stated that she chose not to access the internet,

> *I don't want to or need to access the internet.*

and elaborated that a family member helped her with all necessary online needs like accessing the smart TV.

When asked about the public locations people access the internet outside of their homes many suggested places like family members' homes, public libraries, and banking ATMs.

Main activities

The primary activities and tasks for which people use the internet encompass various domains, including remote work, entertainment, communication, and social media, with platforms like Facebook, Twitter, and Instagram provided as examples of social media platforms utilized by participants. Many participants reported they typically do these activities daily on their phone or other preferred device. Participants also access the internet for additional purposes, such as internet banking, making bill payments, or filing taxes, although these tasks may be performed less frequently. Moreover, due to aging issues, participants highlighted the use of location sharing applications to ensure the safety and well-being of their families. As one participant noted,

> *Now that I am older and have had health issues, my daughter tracks where I go.*

Digital Skills and Training

Focus group participants characterized their digital or computing skills at a variety of different levels from "not a skill that I have" from one of the oldest participants to others who self-assessed their digital and computing skills as acceptable or adequate, while one woman who was self-employed and lived in a rural setting self-identifying as "above average." One participant specifically mentioned the computer course for seniors was helpful to gain digital or computing knowledge and skills. However, a few participants acknowledged that their skills may be outdated due to aging and lack of practice especially since retirement. They expressed a desire to learn new things.

Important Digital Skills and Challenges

Not surprisingly, all participants strongly agreed that getting information from the internet is a very important digital skill. They expressed a desire to expand their knowledge in how to get information via internet. However, a few mentioned they have encountered challenges when getting information online. Remembering usernames and passwords was a common difficulty mentioned, and participants noted that health issues could further complicate digital tasks, such as typing.

Communication-related digital skills were also considered important, particularly the ability to communicate via the internet. Some participants found the technical jargon and vocabulary used on the internet to be hard to understand. They expressed a desire to maintain their knowledge and skills with the continuous development of new technology.

Resources and training

Different types of resources were available for the participants to learn new digital skills or seek assistance to overcome challenges. The public library and internet service provider were listed as common ways for accessing technical resources or support. Additionally, many participants

stated that they relied on individuals such as family members or work colleagues/supervisors for assistance, and several reported using online resources available through platforms like Google and YouTube to troubleshoot technical issues and learn new skills. The following are two illustrative responses

> *[I] Call my daughter when something is not working.*
>
> *We were having problems with the TV. It is connected to the internet. Searched the internet on my phone to find different solutions. Try them until one works.*

Training was believed to be useful in enhancing their digital skills. The participants said that more computer classes, specifically tailored for aging groups, to be provided in-person at venues such as a library, a school, or a community center would be beneficial for them to learn new technology and skills.

Internet Access, Quality and Reliability

Participants had access to various types of internet connections. Many relied on mobile carriers like US Cellular or Verizon for internet connectivity through their mobile phones and internet/broadband via cable or fiber optic connections. Others indicated they had digital service providers such as Mediacom, CenturyLink, or DIRECTV for their internet connection needs.

Regarding the different options available, all participants were knowledgeable about the variations in equipment, pricing, quality, and internet speed. Generally, they expressed satisfaction with the overall quality and reliability of accessing the internet. One participant stated,

> *I can say that I'm not getting anything better than I had. It may sound like it doesn't have that much speed. But no other problems with it.*

The main obstacles faced by the participants when accessing quality internet are high pricing, technical issues, and safety concerns. Participants mentioned there was a lack of competition in many communities and increasing prices following their initial enrollment of the internet plan, with a perception that prices are going up due to a lack of competition. They pointed out that not everyone can afford high-quality internet service after covering other necessary expenses. One woman shared,

> *We do bundle with home phone and cable. But it is still expensive for a normal older person.*

Some participants also complained about the stability of their internet connection during nighttime hours, and that internet speed was sometimes diminished compared to its usual performance in situations with multiple users.

Value of internet at societal and personal level

Participants engaged in extensive discussions covering a wide range of topics concerning the value of the internet. At the societal level, many acknowledged the convenience and effectiveness of using the internet for easier access to information and communication.

Additionally, the ability to offer remote support through the internet was deemed valuable in facilitating help for aging groups who require assistance, regardless of geographical location.

At a personal level, many participants acknowledged the convenience and effectiveness of using the internet. There was agreement that the internet has significantly enhanced their daily lives in many aspects. Many recognized the internet's role in facilitating rapid access to information and goods, and fostering connections with family and friends. This aspect of the internet was widely recognized as one of its most beloved features by the participants. Here are a few illustrative comments:

> *Can get medical blood work results and summary of doctor visits online instead of waiting for a doctor to call you.*
>
> *Virtual appointments are very handy, especially during COVID.*
>
> *I've joined a group watching to learn more about birds and just things like that.*

Safety and security

When participants were asked about their perspectives on frustrations and least favorite aspects of the internet and digital devices, a recurring theme emerged: concerns about safety and security. Many participants not only highlighted the potential risks but also expressed their awareness of the possible negative implications associated with engaging in online activities. These concerns consist of a range of issues, including online scams, identity theft, and the unauthorized use or sharing of personal information.

Moreover, in the context of their discussion on internet safety and security, some participants specifically expressed worries about the online safety of their grandchildren. Recognizing the vulnerability of younger individuals to online risks, they emphasized the importance of caution and providing appropriate supervision to ensure their grandchildren's protection while navigating the vast landscape of the internet.

Furthermore, additional concerns were raised about the potential risks of connecting to the public Wi-Fi networks or accessing personal accounts and sensitive information in such environments. Participants expressed anxieties regarding the potential risks involved in utilizing the internet while outside the safety of their homes.

Summary

Overall, the findings shed light on aging Iowan's experiences, needs, and perceptions regarding internet usage, highlighting both the benefits and challenges they encounter in the use of the internet and digital devices. Aging Iowans engaged in a wide range of activities, including remote work, entertainment, and communication by accessing the internet through smartphones, laptops, or personal computers. Digital skills were considered adequate or acceptable by some participants, although others acknowledged the need to learn new digital skills. Challenges related to getting information, such as remembering usernames and passwords were highlighted.

Participants sought various resources for support and learning digital skills. Training programs tailored for aging individuals were considered beneficial. In general, participants were satisfied

with the overall internet access quality and reliability, although concerns were raised about high pricing, technical, and safety issues.

The positive value of the internet at both the societal and personal level was recognized for its convenience, ease of access to information and communication, and remote support capabilities. Safety and security concerns regarding online activities were expressed, with a specific emphasis on protecting younger family members when using the internet.

Incarcerated Individuals and Correctional Facility Administrators & Staff

Background, Design, & Methods

This section summarizes the findings from four focus groups conducted at two Iowa Department of Corrections (IDOC) facilities – Newton Correctional Facility (NCF) and the Iowa Correctional Institution for Women (ICIW) in Mitchellville. The NCF houses males and the ICIW is the only facility in Iowa that houses females. At each facility, one group discussion was held with incarcerated individuals (IIs) and another was held with administrators. To aid the discussion, a moderator guide was developed, covering general topics similar to those covered in the statewide survey such as access to and use of internet and devices, perceptions of digital skills, internet access, and value of the internet. Specifically, a semi–structured moderator guide was developed in consultation with Iowa Department of Corrections partners to gather information regarding perceptions and information about facility policies, practices, and protocols regarding internet access, digital skills training, and priorities related to access and training. It is important to note that the qualitative design of this work does not allow findings to be generalized to all incarcerated individuals or correctional facility administrators/staff in the state.

Before commencing the focus group discussion, participants were provided with an IRB consent form. The discussions were audio recorded, and each focus group session lasted approximately 60 minutes. The groups that included IIs were moderated by Mary Losch and the groups that were focused on administrators were moderated by Kyle Endres. All groups were observed by Sandra Smith and Rohey Sallah from the Iowa Department of Corrections. The II group at NCF was also observed by Larry Libscomb, Associate Warden of Treatment at NCF.

Focus Group Logistics

Selection of facilities and assistance with logistics was facilitated by Sandra Smith and Rohey Sallah of the Iowa Department of Corrections. Incarcerated individuals were invited to participate using several methods: 1) A voluntary signup process with flyers posted in common areas -- the flyer included language informing participants that the research would not have any impact on parole decisions or provide any additional privileges; 2) Utilization of the offender off-net announcement system; and, 3) Recommendations made by counselors and or Treatment Directors via email to the facility designee. As a result of these efforts, nine male participants engaged in the II focus group and three administrators/staff participated at NCF. At ICIW, seven female IIs participated and eight administrators/staff. (see Table 21).

Table 21: Correctional Facility Focus Group Dates, Locations and Attendance

Location	Group	# of Participants
Newton Correctional Facility	Incarcerated Individuals	9
	Administrators	3
Iowa Correctional Institution for Women	Incarcerated Individuals	7
	Administrators	8

Note: All correctional facility focus groups were conducted on July 24, 2023.

Findings

Incarcerated Individuals

Primary Themes

Several key themes emerged regarding IIs' experiences with and views about internet and digital access to information. The primary themes were:

Limited or No Access to the Internet

Limited Availability of Functional Computer Hardware & Software

Limited Access to Up-to-Date Information Resources

Need for Structured Training in Digital Skills

Digital Skills & Education Viewed as Important Factors for Functioning in Society and Reducing Recidivism

All of the themes emerged from similar responses that were mentioned across multiple participants in both II groups and sometimes more than once during the group discussion. The general themes are summarized below along with some illustrative quotes related to those themes.

Limited or No Access to the Internet

Virtually all the IIs reported very limited or no direct access to the internet. While they acknowledged and understood the need for internet security in a prison, they expressed frustration with the inability to utilize the internet for even narrow, controlled uses like legal work with their attorneys or virtual visits with loved ones, for example. They expressed the desire to acquire information for educational purposes as well as general self-improvement.

> *So I know that there are concerns with giving Internet access or technology, technology access, but with the right people controlling that, I believe that there are safe sites to be able to go to or there are monitoring applications that are making it possible for us to be able to have access to the internet or video visits with our with our loved ones on a device that's right in front of us versus having to go to a visitation room. There's so many different avenues that could be gone instead of just flat out a "no." – NCF II*

> *And even if they send you your discovery, a lot of times they want to send it to you digitally, because it takes up a lot less and they used to they stopped our storage. So they took our storage away because they said it was a fire hazard. So then we were allowed to have digital stuff sent in and like my lawyer would send stuff into my counselor who would send it to it, he would put it on my U-drive and that was all hunky dory. I could go through it and check everything. But then all of a sudden at some point that changed and they're not allowing it anymore, and they reduced our u drive size to one gig, which if there's a lot of legal stuff, it takes up more space than that. – ICIW II*

Limited Availability of Functional Computer Hardware & Software

A major frustration expressed by the IIs was lack of access to functioning computing hardware and software. Numerous examples of limited access even for education classes and issues with functioning hardware and software were shared. The IIs noted small numbers of

computers/kiosks available on the units relative to the number of IIs and shared examples of hardware being non-functional for extended periods of time, which exacerbates access issues. Additionally, several individuals noted that basic software like Microsoft Word had important utility functions like spell-check disabled.

> *I know this place has struggled with maintaining it. They've had a few guys over the last few years and because there is this one, this one guy and because there is so many problems that when it comes to getting an issue fixed, whether it's the off-net computers or our kiosks or telephones, whatever technological issue there is, it's a struggle to get it done in a timely manner because he is only one man. So, we've often went you know, I can say on our unit, there's been a computer down for four months, and, just little things. It's either a monitor or a keyboard or something in the box. And whether it's a big or a small issue, it's just it's a struggle to get it fixed. And we understand that there's only one guy. – NCF II*

> *Grinnell has you write a lot of papers, it's paper heavy, which then, if you work full time trying to balance that with your academics is tricky, and it's a good great thing a lot of girls are taking college classes in my unit but sometimes it makes it difficult to get access to the computer and then also the computer that we have. I mean they loaded Word and they loaded it without spell-check and a bunch of other features which I didn't even think was possible. I didn't think you could do that but it is the case. And then quite a few times our computers, we won't have access to our U drive and that could go down for days at a time and when it happens right before a paper's due, you want to like cry.*
> *-- ICIW II*

> *I think first and foremost, that the major problem is access to computers, period. So on our units, we have four computers. And for four units, you're talking 16 computers. For over 1000. guys, that's the first problem. The second problem is that the access to what is on these computers, the ones that we have on the units, there is nothing. You have Word and Excel, and, and stuff like that. So access to it in general is problematic but even furthermore, what we have access to on that is minute. Like, for example, we don't have Britannica on these computers. – NCF II*

> *It's very hard for a lot of us to get our homework done at the hours that we like to do our homework or that we actually have available the ability to do so. Having certain stations in our units depending on how many people are in there at once. It can be very difficult at times just to write up a paper on a Word document. – ICIW II*

Limited Access to Up-to-Date Information Resources

Another major concern expressed by most of the participants was the lack of access to up-to-date information, educational resources, and to a lesser degree, entertainment resources like fiction books and music – none of which require ongoing internet access and can be stored on local servers or computers not requiring internet connections which may pose lower security risks. They noted this lack of information was a major obstacle to educational/training progress and degree attainment.

I've been to other institutions, even been to the Feds, and this institution by far is probably the worst when it comes to access to anything, like for instance, when I was in Anamosa,… on my computer I had Encyclopedia Britannica so I could do my lessons and stuff. Here, we don't even have Encyclopedia Britannica. I can kinda understand for the most part the limited or no access to the internet -- it's prison -- but we don't even have access to, you know, simple things like Encyclopedia Britannica which will come in and be so useful for guys who are in Comp I, Comp II, you know, and things like that. Because they could do the research for their essays – NCF II

I think maybe like some sort of Kindle or Nook or something. They have libraries that are like corrections libraries or access to something like that that where we could just read books online or on a tablet type of thing. Even if we had to pay a monthly fee, the majority of us are willing to do that. -- ICIW II

I would say that other like I know for sure at Fort Dodge, they had a specific channel specifically for on our on our it's like a closed, closed circuit. So they had a channel specifically for education materials. And like, just to have our own like maybe like TED talks or like educational videos, how-to videos. – NCF II

I'm currently in an apprenticeship for welding. And I can tell you, so there's a lot of information that we don't have access to here that applies to not just being some dumb guy that knows how to lay a bead but the actual ins and outs of it. It's little things like having an access to technology, to new technology that benefits us in there to how to fix this, how to do that. I mean, I don't I don't like I said I've never seen the internet but I've seen it on TV. YouTube is an amazing thing to teach people skills and stuff like that. So I think just technology in general is pretty we're relying on it more and more every day. So for us that don't get to utilize it. We're basically getting left behind. – NCF II

There's a programming book over there but I think it's a crazy year like [19]97. – NCF II

Need for Structured Training in Digital Skills

The importance of digital skills was a view held by all of the individuals. They noted the importance of having digital skills for advancing their education while in the facility and the critical need for the skills upon release. They noted that these skills are now critical for dozens of functions of daily life such as finding housing, job searches, accessing medical care, and accessing public services broadly. They also noted the broad range in skills among IIs. Some who have been incarcerated for decades, for example, have little or no experience with mobile or smartphones and/or personal computers. This contrasts with some individuals who had recently been incarcerated have significant experiences with digital devices and the Internet.

I'm the Neanderthal of the group. I came in when I was 18, been in 22 years. I've never been on the internet never talked on a cell phone. What little information that I have, I learned how to type on my own just because they added the computers on the unit for O-mail and what other stuff I learned from my fellow Grinnellians how to type a paper, and that's it. – NCF II

So I've thought for a long time that the people that have been in for a long time that haven't been around this technology - and I've only been 13 years so -- I've got some of that - but people [who have been in longer] face and like, you release and they just "here you go" and like there should be some type of class or something that because, I mean, everything is online now and for these people that have never been online, -- NCF II

Numerous comments focused on the lack of any structured training for any digital skills – from the most basic, like typing to more sophisticated like utilization of advanced search skills and use of software packages. IIs at ICIW noted that the 6-week Life Skills course included some exposure to Word and Excel as part of the content but that it was fairly limited.

There's a lot of guys that don't know how to type. There's no typing lessons. There's no just general education like I myself have never used a computer. So I don't know how to use Excel. I don't know how to use Word. Even little things like when we're writing a paper for school, like a thesaurus is not even on there. So you can't even [use it] because that requires outside access. – NCF II

They did like a notebook electronic training like back…that was back like in 2015 maybe or [20]14 something like that. But they haven't had except for the Life Skills. They haven't had like an electronics training class like for anyone since then. – ICIW II

But they don't do it [provide devices and training] here because they figured we here, we here to stay, we ain't going nowhere. People that keep coming in, going out, they choose them first. That's not fair. Because we do matter. – ICIW II

You have two computer labs here that's just collecting dust. You have one right there, and another one in the back. Yeah, we've asked questions and no one can or will give us an answer. As to "hey, what's"? you know, at least for college students, and so, that is like, that will fill the gap that exists and take care of a lot of the issues that we've already addressed. – NCF II

Several IIs noted that beginning with basics like typing is very important given that many individuals do not have even those basic skills.

Even if you go to like Lowe's or Home Depot, you get on the kiosk. They time you out if you don't type fast enough, you'll be timed out and then you can't apply for what like what another six months or something. So if you don't know how to type and you just sit there and chicken pick a lot of jobs you won't even be able to apply for work because they've done away with a lot of that, you know, hand written application stuff. – NCF II

When queried about their suggestions for best approaches to training, there was support for a range of options including acquiring self-paced virtual modules or providing in-person instruction by either professionals or peers.

Just some tutorials on basic like Microsoft Office functions, you know, but I know those can be tremendously helpful. And honestly, resources is probably the biggest, biggest struggle. – NCF II

A lot of times, they have self-run module like training modules where you would go in and it's going to walk you through like a tutorial about how to do this and learning and then we do have self-run modules on different sections of different things than somebody who can stand alone computer any like, thing really could go and take a module at a time and work through it at their own pace. – ICIW II

If the administration will be willing to just relinquish a little bit of power to educate guys here because, like, where I was in Illinois, we had what's called ACE classes, adult continuing education classes, and these weren't, the majority of them weren't taught by staff, professors. They were taught by other inmates who came in because as you might imagine, there's a lot of smart, super smart guys in penitentiaries they just done the wrong things. – NCF II

Digital Skills & Education Viewed as Important Factors for Functioning in Society and for Reducing Recidivism

Many of the IIs advocated for the fundamental importance of digital skill training for self-improvement and successful daily living. They also pointed to digital skills as a key to opportunities upon release as well as a protective factor against recidivism.

This is supposed to be about really rebuilding people [and] making them better. And you're not giving them the skills that they need. – ICIW II

I just can't help but see the overlap. And you know, the basic skills people want here to succeed in their daily life. And we're not even giving them here and then sending them out on the streets. You know, it's it seems almost dual purpose. If we were to set them up properly here just to get them the tools they needed while they're here then that those would transfer over into usable, usable things that they need once they get out of here. Just looking at it now here and the whole thing It seems silly while we're even at this point. NCF II

You know, as inmates in a treatment facility. We're supposed to be bettering ourselves, improving ourselves. How do we do that without becoming more technologically advanced? Because what's going to happen is the world goes on as we're in here. For guys like [NAME REDACTED] who have 20 plus, whereas 20 plus years and he's going to leave prison more ignorant than what he was when he came in. Because the world is steadily progressing and we're being stagnated. So, we need that access. – NCF II

Not only that, but it gets prepared for when they do release because it shows them a device they can utilize, it familiarizes them with what the world's going to be utilizing. – NCF II

[Follow-up from previous quote: it's] setting them up for failure. – NCF II

I think just in a nutshell, we all know that education is by far the biggest determiner of recidivism. I mean, I think I read statistics that only 12% of those that obtain a associate's degree, come back. 1% of those that obtain a bachelor's and no one that's ever gotten a Master's of ever getting back to prison. I'm hoping to start a bachelor's program at some point. I just got my Associates. But I think just for others that even if you can't get in to DMACC or Iowa Central wherever they education is. There's a lot of guys that can get that knowledge through technology, too. To assist them to be ready, hit the hit the ground running upon release, or, you know, there's other alternatives education, it's through mail or whatever, but I think General access to more information which kind of shrank the recidivism rate in general.

Facility Staff & Administrators

Several key themes also emerged regarding administrator and staff perspectives and views about facility policies and practices regarding II access to the internet, digital information and digital skills training. The primary themes were:

IIs have Limited to No Access to the Internet by Design -- for Safety & Security

Digital Skill Training is Important but not Currently Provided in a Structured, In-depth Way

Limited Availability of Computer Hardware, Software and Training is Driven in part by Limited Resources

Digital Access, Digital Literacy, & Education are Viewed as Important Factors for Preparing IIs to return to Communities upon Release

All of the themes emerged from similar responses that were mentioned across multiple participants in both administration/staff groups and sometimes more than once during the group discussion.

IIs have Limited to No Access to the Internet by Design -- for Safety & Security

In general, the administrators and staff noted that IIs have little to no access to the internet and those restrictions were in place primarily owing to the need to prevent IIs from engaging in activities that are not allowed or might be attempts to commit crimes.

They have no access to the internet. We have no access to show them anything from the internet in the educational rooms.-- ICIW Admin/Staff

Well, I mean, just trying to put in place anything to, just to make it as hard as possible for them to get to places that they're not supposed to be. So that's really all we're trying to make sure that's taken care of. – NCF Admin/Staff

It's because of who we have here and, and the you know, we have to be very secure about what communication is going and coming in and we don't want people to be plotting their escape attempts or committing crimes on the computer. – ICIW Admin/Staff

Anytime that we're going to add another something "internet" that they have access to here, it's always going to be a concern. You know, controlling to make sure that they're

not misusing it and giving information out and that we don't want to happen. – ICIW Admin/Staff

If they had access to the internet, it will be a very complicated thing to keep control. I guess it always goes through a lot of filters when we have to work towards something. I'm pretty sure there's a lot of concerns about how they're going to use it for instead of how they supposed to use it. – ICIW Admin/Staff

Multiple concerns were expressed about internet security risks and examples of previous issues were shared. Additionally, it was noted that many IIs would be restricted in their use of technology as a condition of their release.

And the other part that also was a hurdle in regards to technology coming inside the prison is the ability for the clients to use it appropriately because a lot of times when they do get access, they start trying to find other access or other routes to abuse the technology that they have to be able to access information that they are not supposed to have access to. So that's creates another whole problem for it in regards to the firewalls. – ICIW Admin/Staff

Our biggest one is victim contact. So yeah, you know, part of our mission statement is to protect the public, and in that, the victim, and especially with our…we're tasked with sex offenders here, so we have a lot of different restrictions, more so than the other facilities that you guys may talk with. So we have to be very careful what we allow, not allow, and screen. A lot more scrutiny to a lot of different things. – NCF Admin/Staff

Very highly tech savvy guys here, I think because the sex offender population, because I mean, we have several guys here who are very tech savvy, which is kind of you know, what led them to their crimes. Because I thought, you know, they can hide it or they were good at hiding it. So you know, then, it's like kind of scary to have them in here and spreading that knowledge or using that knowledge or, you know, be very careful about that too. – NCF Admin/Staff

When they get out they're not gonna be allowed to have computer use, or even phone use because they hide things, I don't know how to hide things on my phone. But there's a way to do that I'm assuming, from what I've been told, and also with the computer access, and that as a part of their crimes and their conditions for parole or work release, they won't be able to have access to those things. – NCF Admin/Staff

Digital Skill Training is Important but not Currently Provided in a Structured Way

The administrators and staff noted that there were few structured or formal opportunities for IIs to learn digital skills. They noted that the 6-week Life Skills course provides some exposure and limited training in Word and Excel. Those IIs in college classes also have some additional opportunities to hone word processing skills as they complete assignments and papers.

The only one I know is Life Skills, Life Skills class. Other than the other classes that are offered if they bring skills in for specific college class. – ICIW Admin/Staff

Just informal, it's them getting on computers in their units and kind of figuring out life skills is the only formal training. – ICIW Admin/Staff

[ACQUIRING DIGITAL SKILLS] That would only be in the college classes…in our apprenticeship classes some but it's very limited to that but as far as the whole population having access, we don't have that ability, currently. So I would guess maybe 100-150 guys…are able to access those classes. – NCF Admin/Staff

There's a Life Skills lab which has…they do a certificate that includes Word, Excel or something else in PowerPoint, PowerPoint, Word and Excel. They get a certificate from the Life Skills if they do certain projects from them and get them completed, but they only have access to those things. – ICIW Admin/Staff

There is also a pilot program from American Prison Data Systems (APDS) called Tech2Connect that is available on a small scale to facilitate the transition at the time of release. In this program, a small number of IIs are provided with tablets as part of that program but the software available is limited and available only during the months prior to release. Additionally, there were concerns raised about the ability to provide the program and hardware to all IIs given their history of using technology to commit crimes.

So they just recently got the APDS tablets, which is another like kind of workforce kind of development program. They access computers that have no internet access, to work on just documents, read legal work, things like that. They also have a separate set of computers that they can send essentially emails back and forth between loved ones and certain stuff with their accounts. – NCF Admin/Staff

It's mostly self-help programs such as like the I believe it's called the Master Plan. There's budgeting. There's also learning how to do a job search. There's also other self-help programs on there as well in regards to TED talks, videos that they can watch and some educational videos along with the TED Talks…Yeah, there's also audiobooks in an electronic library that has over 2000 different titles. You can check out in a two-week period. – ICIW Admin/Staff

…the tablets only have access to essentially like, a browser that automatically goes to the APDS website. So, and then, the only other app that's available on the tablet is a settings app which has an admin mode that I know the code for and no one else in the facility does. So, the settings -- they can do minor setting like brightness settings, things like that, but most things are just done through the ADPS website. And that connects to a specific wireless signal that ADPS came through and made sure it was working and I don't have access to change anything on that. – NCF Admin/Staff

I think it's like only a select few who could be offered this program because of course there has to be like certain restrictions and certain, you know, like the offender has a background of very tech savvy then I would assume that they're not going to be offered this program…You're not going to offer an offender who has like internet history and our charges so that is that kind of limits down to the offenders. And then so that's why right

now it might only be seeing two or three guys that do it because of the population they can pick from to start with. – NCF Admin/Staff

Administrators and staff from both facilities had viewed utilization of current IIs as digital skill mentors or instructors as a cost-effective means of expanding capacity and one that is likely to be well-received by the IIs.

Budget is always a concern with instructors. But if we could train our IIs to do some of this that would definitely help too. And from the classes we used to do, we get a lot more buy in when the IIs are leading certain classes from the population. They connect a little bit better from what I've seen when I've sat in on some in the past. So that's something like, you know, we could look forward that may be doing again. – NCF Admin/Staff

Trusted peer-to-peer program where they were educated in a population like your own peers, would be better received. – ICIW Admin/Staff

Limited Availability of Computer Hardware, Software, and Training is Driven in part by Limited Resources

The administrators and staff noted that while there are some computers and a few tablets available for specific tasks/functions, the access is limited. More access would require additional resources in terms of equipment and IT staff. They also noted that there are internal networks for communication with medical services and the canteen. An O-mail service provides email capability but all messages are held and reviewed before delivery.

The kiosk computers, there's usually just like one per unit and the unit you know may have you know depending on the unit can have…like 60 some women and one kiosk. – ICIW Admin/Staff

From a technical side of things while I mean, I guess not Internet access wise, there's some things that I would like upgraded like the O-mail kiosk. They are running Windows 8.1. I would like that upgraded but we have to wait for a third-party vendor to take care of that. – NCF Admin/Staff

In some computers they can do like word processing for like homework because we have some courses like Life Skills where they have to learn how to do spreadsheets and word documents and everything. – ICIW Admin/Staff

There are two labs up in P building. There's a lab, generic lab for all college classes that go on. So they can do their papers on there and print their papers from there. – ICIW Admin/Staff

I think the people who live here will say they don't have enough computers in their living units because they don't want to have to wait their turn if they're working on a college paper or something. – ICIW Admin/Staff

There was a shared perception that in order to increase capacity, additional staff and infrastructure would be needed to support training and increased security required.

If we increase capacity and we also need to increase the number of IT staff. – ICIW Admin/Staff

We would need to increase our capacity for increased numbers of people to be using tablets. IT would have to do some behind-the-scenes work to make that even possible. I've heard that there are prisons that everybody that everybody lives there every single person has a tablet and so I keep thinking that that's eventually gonna roll to us but there's definitely work to be done before that can happen. – ICIW Admin/Staff

It would have to be like a very selective program. I mean, you'd have to do very, like, I think, intense screening to figure out who would get into the program. Just because I think some guys here are not ready for that. And they would just abuse the program. And that would not go well. So I think that'd be the first step is just trying to figure how are you going to set up the screening. – NCF Admin/Staff

I think it'd be a challenge to find like that sweet spot of how long like the duration of the class or however the training would be because you don't want it to be too long where they can start to maybe find loopholes, or they can get in trouble and other ways to lose interest but you don't want it to be too short that they're not getting the full knowledge of the course. – NCF Admin/Staff

Digital Access, Digital Literacy, & Education are Viewed as Important Factors for Preparing IIs to return to Communities upon Release

There was strong consensus that increasing digital literacy among IIs would be advantageous and would help in their transition back into the community. However, there was also a shared perspective that providing formal training would not be simple to achieve given the necessary security requirements and resources needed to expand capacity.

As I mentioned before, I'd like to see everybody get basic computer skills. To fill out an application now on kiosks … it's very confusing for some. And their time, if you could get timed out and then you have to reapply, I mean, it can create frustration and our population when they get frustrated, they tend to want to quit and not go back and do it…So you know, just in that as a basic need, I think would help all our offenders that are heading back out into the community. – NCF Admin/Staff

I would I would say the top two [priorities] would be the college stuff, being able to research and then write and print your assignments and have being able to do that. Like maybe from their own room instead of there are only certain hours and certain days that you have access to the computers to be able to do that. And then but like the job search and the housing would be the other main thing I would say. You know, when they come to prison, we expect them to have a plan for when they get out. Where are you going to work?, Where are you going to live? Where are you going to go get your counseling services? and it's very difficult to set that up through snail mail – ICIW Admin/Staff

There's a website called 211 that I've for years and years wanted them to be able to have access to. It's a resource site. Basically, you can go in there or you can actually call them

on the phone and say I'm, I'm going to be in this area and I need housing or I need help figuring out where can I do my laundry or absolutely anything whatsoever…. But you can't get that accomplished. And my understanding is because within that website, there are so many things that you can click on to go somewhere else and to tighten that down, it is an IT nightmare. So there are things like that that would be great specifically for this population, but trying to get it to work also for this population is a nightmare. – ICIW Admin/Staff

When you think about over time, generations, like my grandmother, few and far between would use a computer to do anything but this generation every single thing that they do is connected to some even as we're going to Amazon, a warehouse job, you're doing something on the computer, John Deere, everyone, it wasn't set up that way before but now we've evolved. So they assess the thing. That makes sense to have some type of computer literacy. – ICIW Admin/Staff

What is the baseline or foundation of digital skills, IT skills a person in the world should have now just to function? What is that? I'm interested in some kind of, I guess assessment that we make or that can show us, like, what we need to bring people up to speed. ICIW – Admin/Staff

I would say that would be your ultimate goal is to strive to get to that ability where somebody that's incarcerated still has the potential to have at least a similar learning environment to the person that's not incarcerated. – ICIW Admin/Staff

Conclusions

Overall, there was notable consistency in the views expressed in the discussion groups – in both the II groups and the Administrator/Staff groups. In the II groups, strong consensus emerged regarding limited/no access to the internet. While the IIs recognized the enhanced need for security, there was a strong desire to have some ability to access the internet in narrow and controlled ways. Additional concerns were raised by the IIs regarding the limited availability of fully-functioning computer hardware and software and the difficulty this poses for meeting educational requirements like paper deadlines. Another major concern expressed was the lack of access to up-to-date information resources which do not require internet access. Access to broad information resources like Encyclopedia Britannica or training videos which can be downloaded and stored locally or DVD libraries which could be available through the library.

Related, there was a consensus that training in digital skills is critical for functioning in the current society and hence, the IIs expressed a strong desire for more structured, in-depth training beginning with typing and moving through Microsoft Office applications for word processing, spreadsheets, and internet search skills. There was no single mode that was suggested for the training but there was support for formal training in classes run by staff or professors, self-paced training via local videos or peer-to-peer training within the facility. There were also strongly held views in both groups that access to educational information was important to lower the risk of recidivism after release but also important to support the general dignity of those serving longer sentences to allow for self-improvement and education generally.

The administrator/staff discussions were also aligned regarding reported policies as well as the rationale for those policies. Safety and security were paramount as a key reason for restricting access to the internet. The NCF staff pointed to several examples of security risks related to the high proportion of sex offenders – many of whom committed crimes using technology/internet – and noted the key goal of protecting victims. The ICIW staff also noted the importance of reducing risks including risks to staff.

Both of the administrator/staff groups noted the importance of digital skill training for IIs but acknowledged the limited opportunities provided for structured, in-depth training. ICIW staff noted that IIs choosing to participate in a 6-week Life Skills course get some word processing and spreadsheet exposure (over 2 weeks) but there is no available in-depth training beyond that. Administrators and staff at both facilities also noted that there is limited hardware and software available to the IIs on a regular basis. Those enrolled in college classes have some additional access on occasion when/if the computer labs are open. The staff also noted that additional hardware and software also requires additional resources for both the equipment as well as the personnel to maintain it and ensure it meets the security requirements.

Lastly, individuals in the facility administrator/staff groups expressed support for digital access, and increasing digital skills. They viewed these as important foundations for preparing IIs for a successful return to their communities upon release. They also lamented the fact that they were not in a position to do more to effectively facilitate such training at the current time.

Overall Summary & Conclusions

From the original 10,000 randomly sampled addresses, 1,683 households participated in the IDSS survey. All counties were represented with at least one adult participating. We also saw representation across all categories within the demographics recorded; however, respondents skewed older, female, higher income, more formally educated, White, and non-Hispanic. For many of the questions asked in the survey, we conducted additional analysis examining differences between rural and metro, across age groups (18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+), and between low-income and higher income.

Overall, almost all Iowans reported having at least one digital information device within their home (i.e., desktop computer, laptop computer, tablet, or smartphone). When broken down into seven age groups, all respondents from the younger four groups reported having at least one information device compared to the older three groups where it was closer to 9 of every 10 respondents having at least one digital information device. Among all respondents, the most common device was a smartphone with an internet connection (94%) and the least common was a desktop computer (50%). Although almost all respondents reported having at least one information device within their home, a lower percentage of the low-income (77%) survey respondents reported having a sufficient number of devices to meet the needs of those living in their home compared to 90% of the higher income group.

The most common technology used to access internet at home was high-speed broadband internet (71%). However, there were notable differences in ways internet was accessed at home when comparing subgroups of interest. There was a significant difference between rural and metro respondents, with a higher percentage of metro (74%) participants who reported higher-speed broadband access at home compared to rural (66%) participants. Relatedly, a larger percentage of the low-income (31%) participants reported they used a fixed wireless service (outdoor antenna with indoor Wi-Fi) compared to higher income (18%) participants.

The most commonly reported monthly cost for home internet service was $61 to $80 (31%). Approximately 25% of all survey respondents reported it was either somewhat or very difficult to fit the cost of their monthly internet bill into their household's budget. The overall monthly costs and the difficulty with fitting that cost into their monthly household budget did not significantly differ across any of the groups evaluated for subgroup analysis. Although cost and difficulty paying did not differ across the groups, there were significant differences in satisfaction with the quality of their home internet connection across the age groups. Overall, 61% of Iowans reported being either somewhat or very satisfied with the quality of their home internet connection. Among the seven age groups, the younger groups tended to report more satisfaction with the quality of their home internet connection compared to the older groups. All respondents were asked what aspects of their home internet connection could be improved. Five response categories emerged: internet speed, reliability, costs, Wi-Fi coverage, and service provider options.

Regarding the use of technology and information devices, roughly 6 of every 10 Iowans reported feeling very confident using information devices to do the things they need to do online. Confidence levels varied significantly across the groups – specifically, rural respondents, older

respondents, and low-income respondents reported lower levels of confidence compared to their metro, younger, and higher income counterparts, respectively (Appendices C-E).

A majority of respondents reported using the internet to search online for a variety of information, with over one-third of respondents indicating that searching for each of the seven specified items (e.g., jobs, recreational, tourist or vacation information) was very easy. Higher percentages of metro and younger respondents tended to report having searched online for the various types of information compared to rural and older respondents, respectively. For most (8 of 12) tasks asked about within the survey, a majority of respondents reported it was or would be very easy for them to use a phone or computer to complete, and a majority of respondents reported having done most (7 of 12) tasks within the past two years . The four tasks where less than a majority of respondents reported it would be very easy for them to use a phone or computer to complete the listed task, included: enroll in Internet subsidy programs (29%), apply for or manage government benefits (33%), access or apply for government services (36%), and find tools or services to protect the privacy of your personal data (38%). All survey respondents were also asked to estimate their level of skill in completing 24 different tasks (e.g., sending an email; sharing video content I created online). A majority of survey respondents estimated they could complete 21 of the 24 tasks. The three tasks where most survey participants indicated they could not do the task at all included: design/build a website (71%), edit a website or webpage (60%), use online content confidently, and knowing what licenses or permissions may be required (58%).

Along with the state-wide survey, we conducted qualitative focus groups that gathered additional feedback from three specific populations: aging individuals, English Language Learners, and incarcerated individuals. Additional discussions were also held with correctional facility administrators and staff. For the first two groups, the focus groups examined topics that overlapped with the survey such as internet access and digital skills. The groups held in the correctional facilities sought a narrower range of information about current practices and policies around internet access and digital skill acquisition. Across the three groups, there was a consensus of needing more formal education on digital skills, whether that be through in-person training, online videos, or a formal class. For the aging individuals, online security and safety emerged as areas of special concern. The English Language Learners reported that the cost of quality internet and the limited English language skills can create barriers that, at times, prevents them from gaining information needed for daily life. The incarcerated individuals understood why restrictions existed for them with respect to internet access, but many expressed concerns about the need for additional training to address the lack of digital skills, lack of access to general informational resources, and how the lack of digital literacy could harm their chances of reintegration into the community upon release. The incarcerated individuals requested more formal training on digital skills and access to updated training information and resources (e.g., digital encyclopedias). Administrators and staff at the correctional facilities shared a view that safety and security was paramount but also supported the expansion of training opportunities where resources allowed.

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Appendix A – Weighting & Imputation

MARKETING SYSTEMS GROUP WEIGHTING METHODOLOGY REPORT

Iowa Digital Services Survey 2023

Design Overview:

This survey has secured a total of 1,683 interviews with adults 18 or older residing in Iowa, using the an Address-Based Sampling (ABS) methodology. The following table summarizes the number of completed surveys secured by location type.

Table 1. Distribution of respondents by sampling methodology

Location Type	Respondents	
On a farm or rural area	412	24.5%
In a small town of less than 5,000 people	266	15.8%
In a larger town of 5,000 to less than 25,000 people	275	16.3%
In a city of 25,000 to less than 50,000 people	216	12.8%
In a city of 50,000 to less than 150,000 people	330	19.6%
In a larger city of 150,000 or more people	184	10.9%
Total	**1,683**	**100.0%**

Weighting:

Survey data must be weighted before they can be used to produce reliable estimates of population parameters. While reflecting the selection probabilities of sampled units, weighting also attempts to compensate for practical limitations of sample surveys, such as differential nonresponse and undercoverage. The weighting process for this survey included three major steps, as detailed next:

1. In the first step, design weights were computed to reflect selection probabilities that included surveying only one adult per household.
2. In the second step, design weights were adjusted to the geodemographic distributions of the target population for which the needed benchmarks were obtained from the latest *Current Population Survey* (CPS 2022, March Supplement). For this purpose, the *WgtAdjust* procedure of SUDAAN was used to balance the distributions of survey respondents against the various benchmarks simultaneously[2]. This procedure relies on a constrained logistic regression to predict the likelihood of response vis-à-vis the explanatory variables used in the

[2] RTI International (2012). *SUDAAN Language Manual, Release 11.0.* RTI International. www.rti.org/sudaan

model (benchmark distributions). The resulting likelihood probabilities are then used to create adjustment weights that align respondents to the specified benchmark distributions.

3. In the third and final step, produced weights were examined to identify and ameliorate extreme values. Trimming extreme weights is a standard practice that is used to improve the efficiency of the weighting process, i.e., increasing the stability of survey estimates. This important gain in precision, however, is achieved at the expense of introducing some minor diversions between weighted distributions of respondents and their corresponding population benchmarks. In order to accommodate different analyses, two sets of weights were produced: *WGT_P* that aggregated to the total population of adults in Iowa (2,462,069) and *WGT_R* that aggregated to the total number of respondents (1,683).

Imputation of Missing Data:

Before any of the above procedures could begin, missing values for all variables needed for weighting had to be imputed. For this purpose, the *Survey Impute* procedure of SAS was used to select eligible donors based on a *hot-deck* algorithm[3]. Briefly, this method begins by grouping survey respondents into homogeneous subgroups (cells) whereby homogeneity is determined based on relevant predictors that are free of missing values. Subsequently, records in each cell are examined and when a missing value is detected for the variable of interest it is replaced by a randomly selected donor to replace the identified missing value. As such, respondent counts in the following tables are based on imputed variables, which are what should be used for all subsequent data analyses.

Table 2. Respondent and population distributions by gender and age

Gender	Age	Respondents		Population	
Male	18-24	15	0.9%	167,744	6.8%
	25-34	67	4.0%	187,925	7.6%
	35-44	71	4.2%	224,956	9.1%
	45-54	84	5.0%	170,120	6.9%
	55-64	114	6.8%	178,257	7.2%
	65-74	178	10.6%	188,551	7.7%
	75+	120	7.1%	116,234	4.7%
Female	18-24	40	2.4%	108,464	4.4%
	25-34	119	7.1%	234,284	9.5%
	35-44	175	10.4%	208,356	8.5%
	45-54	124	7.4%	152,285	6.2%
	55-64	198	11.8%	232,724	9.5%
	65-74	220	13.1%	176,456	7.2%
	75+	158	9.4%	115,713	4.7%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

[3] https://support.sas.com/documentation/onlinedoc/stat/141/surveyimpute.pdf

Table 3. Respondent and population distributions by gender and ethnicity

Gender	Ethnicity	Respondents		Population	
Male	Hispanic	16	1.0%	50,883	2.1%
	Other	633	37.6%	1,182,904	48.0%
Female	Hispanic	27	1.6%	63,375	2.6%
	Other	1,007	59.8%	1,164,907	47.3%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

Table 4. Respondent and population distributions by gender and race

Gender	Race	Respondents		Population	
Male	White	610	36.2%	1,146,074	46.5%
	Other	39	2.3%	87,713	3.6%
Female	White	1,009	60.0%	1,137,971	46.2%
	Other	25	1.5%	90,311	3.7%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

Table 5. Respondent and population distributions by gender and education

Gender	Education	Respondents		Population	
Male	High School or Less	95	5.6%	508,334	20.6%
	Some College or Vocational Training	126	7.5%	239,319	9.7%
	Associate Degree	74	4.4%	148,933	6.0%
	Bachelor's Degree	217	12.9%	238,871	9.7%
	Graduate or Professional Degree	137	8.1%	98,330	4.0%
Female	High School or Less	144	8.6%	426,663	17.3%
	Some College or Vocational Training	254	15.1%	221,509	9.0%
	Associate Degree	151	9.0%	133,662	5.4%
	Bachelor's Degree	281	16.7%	324,959	13.2%
	Graduate or Professional Degree	204	12.1%	121,489	4.9%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

Table 6. Respondent and population distributions by gender and marital status

Gender	Marital Status	Respondents		Population	
Male	Married	429	25.5%	668,570	27.2%
	Not Married	104	6.2%	188,333	7.6%
	Never Married	116	6.9%	376,884	15.3%
Female	Married	592	35.2%	663,399	26.9%
	Not Married	266	15.8%	292,030	11.9%
	Never Married	176	10.5%	272,853	11.1%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

Table 7. Respondent and population distributions by income

Gender	Income	Respondents		Population	
Male	Less than $15K	24	1.4%	32,141	1.3%
	$15K < $25K	42	2.5%	57,581	2.3%
	$25K < $35K	46	2.7%	62,564	2.5%
	$35K < $50K	68	4.0%	160,301	6.5%
	$50K < $75K	107	6.4%	189,975	7.7%
	$75K < $100K	136	8.1%	172,149	7.0%
	$100K < $150K	124	7.4%	267,369	10.9%
	$150K or more	102	6.1%	291,707	11.8%
Female	Less than $15K	53	3.1%	75,854	3.1%
	$15K < $25K	87	5.2%	78,118	3.2%
	$25K < $35K	86	5.1%	68,239	2.8%
	$35K < $50K	124	7.4%	144,250	5.9%
	$50K < $75K	192	11.4%	182,511	7.4%
	$75K < $100K	178	10.6%	179,532	7.3%
	$100K < $150K	188	11.2%	245,943	10.0%
	$150K or more	126	7.5%	253,835	10.3%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

Table 8. Respondent and population distributions by gender and location type

Gender	Location	Respondents		Population	
Male	Farm or Rural	139	8.3%	243,234	9.9%
	Small Town	95	5.6%	244,184	9.9%
	Larger Town	105	6.2%	234,296	9.5%
	Small City	84	5.0%	121,912	5.0%
	Medium City	131	7.8%	309,287	12.6%
	Large City	95	5.6%	80,874	3.3%
Female	Farm or Rural	273	16.2%	225,548	9.2%
	Small Town	171	10.2%	245,152	10.0%
	Larger Town	170	10.1%	238,893	9.7%
	Small City	132	7.8%	125,208	5.1%
	Medium City	199	11.8%	311,373	12.6%
	Large City	89	5.3%	82,108	3.3%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

Table 9. Respondent and population distributions by gender and number of adults

Gender	Number of Adults	Respondents		Population	
Male	1	166	9.9%	199,541	8.1%
	2	427	25.4%	745,379	30.3%
	3	40	2.4%	183,225	7.4%
	4+	16	1.0%	105,642	4.3%
Female	1	312	18.5%	251,291	10.2%
	2	617	36.7%	721,790	29.3%
	3	77	4.6%	151,268	6.1%
	4+	28	1.7%	103,933	4.2%
Total		**1,683**	**100.0%**	**2,462,069**	**100.0%**

Variance Estimation for Weighted Data:

Survey estimates can only be interpreted properly in light of their associated sampling errors. Since weighting often increases variance of estimates, use of standard variance calculation formulae with weighted data can result in misleading statistical inferences. With weighted data, two general approaches for variance estimation can be distinguished. One method is *Taylor Series Linearization* and the second is *Replication*. Our recommended method is linearization, which is readily accessible from several statistical software packages, including SAS and SPSS.

Approximation Method for Variance Estimation:

Researchers who do not have access to special software for design-proper estimation of standard errors can approximate the resulting variance inflation due to weighting and incorporate that in subsequent calculations of confidence intervals and tests of significance. With W_i representing the final weight of the i^{th} respondent, the inflation due to weighting, which is commonly referred to as *Unequal Weighting Effect (UWE)*, can be approximated by:

$$\delta = 1 + \frac{\sum_{i=1}^{n} \frac{(w_i - \bar{w})^2}{n-1}}{\bar{w}^2}$$

For calculation of a confidence interval for an estimated percentage, $\hat{p}$, one can obtain the conventional variance of the given percentage and multiply it by the approximated design effect, δ, and use the resulting quantity as adjusted variance. As such, the adjusted standard deviation for the percentage in question would be given by:

$$S(\hat{p}) \approx \sqrt{\frac{\hat{p}(1-\hat{p})}{n-1}\left(\frac{N-n}{N}\right) \times \delta}$$

Subsequently, the (100-α)% confidence interval for P would be given by:

$$\hat{p} - z_{\alpha/2}\sqrt{\frac{\hat{p}(1-\hat{p})}{n-1}\left(\frac{N-n}{N}\right) \times \delta} \leq P \leq \hat{p} + z_{\alpha/2}\sqrt{\frac{\hat{p}(1-\hat{p})}{n-1}\left(\frac{N-n}{N}\right) \times \delta}$$

Appendix B – Statewide Frequency Tables

This appendix includes counts, frequencies and percentages for all items. Both raw and weighted percentages are included. "Valid %" represents the percent of those answering the question – excluding those who did not respond or were not included based on a skip pattern.

What types of computing and information device(s) do you currently have in your home?

Desktop Computer	**Count**	**%**	**Valid %**	**Weighted Valid %**
Have	755	45%	50%	50%
Do not have	746	44%	50%	50%
Did not respond	182	11%		
Total	1,683	100%	100%	100%

Laptop Computer	**Count**	**%**	**Valid %**	**Weighted Valid %**
Have	1,247	74%	80%	78%
Do not have	321	19%	20%	22%
Did not respond	115	7%		
Total	1,683	100%	100%	100%

Smartphone with an Internet Connection	**Count**	**%**	**Valid %**	**Weighted Valid %**
Have	1,525	91%	94%	94%
Do not have	106	6%	6%	6%
Did not respond	52	3%		
Total	1,683	100%	100%	100%

Tablet (e.g., Ipad/Chromebook	**Count**	**%**	**Valid %**	**Weighted Valid %**
Have	1,084	64%	71%	68%
Do not have	446	27%	29%	32%
Did not respond	153	9%		
Total	1,683	100%	100%	100%

Other Device	**Count**	**%**	**Valid %**	**Weighted Valid %**
Have	153	9%	21%	19%
Do not have	577	34%	79%	81%
Did not respond	953	57%		
Total	1,683	100%	100%	100%

Do you routinely access the internet for employment or work you do outside your home?

	Count	%	Valid %	Weighted Valid %
Yes	878	52%	53%	58%
No	765	45%	46%	41%
Don't know/Not sure	20	1%	1%	1%
Did not respond	20	1%		
Total	1,683	100%	100%	100%

Which of the following technologies do you or any member of your household use to access internet service in your home? Select all that apply.

	Count	%	Valid %	Weighted Valid %
"Dial-up" internet service at home	33	2%	2%	3%
Higher-speed broadband internet service at home (e.g., cable, fiber optic, DSL, satellite)	1,177	70%	70%	71%
Fixed Wireless internet service (outdoor antenna w/ indoor Wi-Fi router)	359	21%	21%	20%
Use your smartphone to access the internet	1,090	65%	65%	65%
Use your smartphone as a "hotspot" for internet access for other devices	353	21%	21%	23%
Use another means of internet access in my home	55	3%	3%	4%
I/We have internet but I do not know or am not sure what type of home internet service I have	61	4%	4%	3%
I do not have any internet at my residence	73	4%	4%	5%

Do you have wireless (Wi-Fi) internet at home?

	Count	%	Valid %	Weighted Valid %
Yes, I have Wi-Fi coverage throughout the house/residence	1,394	83%	84%	85%
Yes, I have Wi-Fi in some parts of the house but not all	101	6%	6%	6%
No, I do not have Wi-Fi	137	8%	8%	8%
Don't know/Not sure	37	2%	2%	2%
Did not respond	14	1%		
Total	1,683	100%	100%	100%

Excluding the costs of other services that might be bundled, approximately how much do you pay on a monthly basis for internet service?

	Count	%	Valid %	Weighted Valid %
Less than $40	81	5%	5%	5%
$41-$60	365	22%	25%	22%
$61-$80	403	24%	27%	28%
$81-$100	305	18%	21%	21%
$101-$120	126	7%	9%	10%
More than $120	80	5%	5%	5%
I have internet but do not pay for it (e.g., is included in rent)	40	2%	3%	3%
Don't know/Not Sure	79	5%	5%	7%
Did not respond	204	12%		
Total	1,683	100%	100%	100%

How difficult, if at all, is it for you to fit your monthly internet bill into your household's budget?

	Count	%	Valid %	Weighted Valid %
Not at all difficult	548	33%	37%	40%
Not too difficult	544	32%	36%	34%
Somewhat difficult	318	19%	21%	20%
Very difficult	59	4%	4%	5%
Don't know	25	1%	2%	2%
Did not respond	189	11%		
Total	1,683	100%	100%	100%

Overall, how satisfied or dissatisfied are you with the quality of your home internet connection?

	Count	%	Valid %	Weighted Valid %
Very dissatisfied	170	10%	11%	11%
Somewhat dissatisfied	267	16%	18%	19%
Neither satisfied nor dissatisfied	136	8%	9%	9%
Somewhat satisfied	474	28%	32%	31%
Very satisfied	450	27%	30%	30%
Did not respond	186	11%		
Total	1,683	100%	100%	100%

What, if any, aspects of your home internet connection could be improved? If none, please write "none."

	Count	%	Valid %	Weighted Valid %
None	318	30%	30%	30%
Speed	315	30%	30%	32%
Reliability	304	29%	29%	28%
Cost	127	12%	12%	9%
Coverage	56	5%	5%	7%
Provider Options	28	3%	3%	3%
Not sure	5	<1%	<1%	<1%
Other	57	5%	5%	6%

Overall, how confident do you feel using computers, smartphones, or other electronic devices to do things you need to do online?

	Count	%	Valid %	Weighted Valid %
Not at all confident	96	6%	6%	6%
Only a little confident	128	8%	8%	7%
Somewhat confident	546	32%	33%	29%
Very confident	881	52%	53%	58%
Did not respond	32	2%		
Total	1,683	100%	100%	100%

The next questions are about how you deal with information and communications technology. How well, if at all, do each of the statements describe you? When I get a new electronic device, I usually need someone else to set it up or show me how to use it

	Count	%	Valid %	Weighted Valid %
Not at all well	639	38%	39%	43%
Not too well	302	18%	18%	16%
Somewhat well	419	25%	26%	24%
Very well	276	16%	17%	17%
Did not respond	47	3%		
Total	1,683	100%	100%	100%

I am more productive because of all of my electronic information devices

	Count	%	Valid %	Weighted Valid %
Not at all well	156	9%	10%	10%
Not too well	219	13%	13%	13%
Somewhat well	705	42%	43%	42%
Very well	546	32%	34%	35%
Did not respond	57	3%		
Total	1,683	100%	100%	100%

I find it difficult to know whether the information I find online is trustworthy

	Count	%	Valid %	Weighted Valid %
Not at all well	358	21%	22%	24%
Not too well	420	25%	26%	26%
Somewhat well	640	38%	39%	37%
Very well	206	12%	13%	13%
Did not respond	59	4%		
Total	1,683	100%	100%	100%

Between phone calls, texts, emails, social media, or other messages, I deal with too much information in my daily life

	Count	%	Valid %	Weighted Valid %
Not at all well	240	14%	15%	18%
Not too well	426	25%	26%	23%
Somewhat well	695	41%	43%	44%
Very well	265	16%	16%	15%
Did not respond	57	3%		
Total	1,683	100%	100%	100%

I often feel frustrated when using technology

	Count	%	Valid %	Weighted Valid %
Not at all well	460	27%	28%	32%
Not too well	555	33%	34%	32%
Somewhat well	454	27%	28%	25%
Very well	167	10%	10%	11%
Did not respond	47	3%		
Total	1,683	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Search online for... Job(s)

	Count	%	Valid %	Weighted Valid %
I have done this	797	47%	49%	55%
I have not done this	841	50%	51%	45%
Did not respond	45	3%		
Total	1,683	100%	100%	100%

Information about public health issues

	Count	%	Valid %	Weighted Valid %
I have done this	1,308	78%	80%	79%
I have not done this	330	20%	20%	21%
Did not respond	45	3%		
Total	1,683	100%	100%	100%

Reliable information about a health or medical condition

	Count	%	Valid %	Weighted Valid %
I have done this	1,393	83%	85%	85%
I have not done this	238	14%	15%	15%
Did not respond	52	3%		
Total	1,683	100%	100%	100%

Information about personal health issues

	Count	%	Valid %	Weighted Valid %
I have done this	1,367	81%	84%	85%
I have not done this	259	15%	16%	15%
Did not respond	57	3%		
Total	1,683	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	Count	%	Valid %	Weighted Valid %
I have done this	1,224	73%	75%	75%
I have not done this	410	24%	25%	25%
Did not respond	49	3%		
Total	1,683	100%	100%	100%

Official government statistics or documents

	Count	%	Valid %	Weighted Valid %
I have done this	907	54%	56%	57%
I have not done this	725	43%	44%	43%
Did not respond	51	3%		
Total	1,683	100%	100%	100%

Recreational, tourist, or vacation information

	Count	%	Valid %	Weighted Valid %
I have done this	1,365	81%	84%	84%
I have not done this	267	16%	16%	16%
Did not respond	51	3%		
Total	1,683	100%	100%	100%

Please indicate how easy or difficult it was, or you think it would be, for you to do (even if you haven't done so) each of the following. Search online for… Job(s)

	Count	%	Valid %	Weighted Valid %
Very easy	661	39%	47%	52%
Somewhat easy	489	29%	35%	31%
Somewhat difficult	165	10%	12%	11%
Very difficult	95	6%	7%	5%
Did not respond	273	16%		
Total	1,683	100%	100%	100%

Information about public health issues

	Count	%	Valid %	Weighted Valid %
Very easy	732	43%	47%	48%
Somewhat easy	612	36%	40%	39%
Somewhat difficult	143	8%	9%	9%
Very difficult	61	4%	4%	4%
Did not respond	135	8%		
Total	1,683	100%	100%	100%

Reliable information about a health or medical condition

	Count	%	Valid %	Weighted Valid %
Very easy	656	39%	42%	42%
Somewhat easy	642	38%	41%	39%
Somewhat difficult	207	12%	13%	13%
Very difficult	66	4%	4%	5%
Did not respond	112	7%		
Total	1,683	100%	100%	100%

Information about personal health issues

	Count	%	Valid %	Weighted Valid %
Very easy	679	40%	43%	43%
Somewhat easy	650	39%	42%	41%
Somewhat difficult	169	10%	11%	12%
Very difficult	63	4%	4%	4%
Did not respond	122	7%		
Total	1,683	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	Count	%	Valid %	Weighted Valid %
Very easy	627	37%	41%	43%
Somewhat easy	578	34%	38%	37%
Somewhat difficult	225	13%	15%	14%
Very difficult	87	5%	6%	7%
Did not respond	166	10%		
Total	1,683	100%	100%	100%

Official government statistics or documents

	Count	%	Valid %	Weighted Valid %
Very easy	473	28%	32%	33%
Somewhat easy	535	32%	37%	37%
Somewhat difficult	315	19%	22%	22%
Very difficult	134	8%	9%	9%
Did not respond	226	13%		
Total	1,683	100%	100%	100%

Recreational, tourist, or vacation information

	Count	%	Valid %	Weighted Valid %
Very easy	912	54%	59%	60%
Somewhat easy	485	29%	31%	30%
Somewhat difficult	107	6%	7%	7%
Very difficult	52	3%	3%	4%
Did not respond	127	8%		
Total	1,683	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Used phone or computer to… Apply for job(s)

	Count	%	Valid %	Weighted Valid %
I have done this	533	32%	32%	41%
I have not done this	1,114	66%	68%	59%
Did not respond	36	2%		
Total	1,683	100%	100%	100%

Complete a course or training to improve your job skills

	Count	%	Valid %	Weighted Valid %
I have done this	765	45%	47%	52%
I have not done this	880	52%	53%	48%
Did not respond	38	2%		
Total	1,683	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	Count	%	Valid %	Weighted Valid %
I have done this	464	28%	28%	28%
I have not done this	1,183	70%	72%	72%
Did not respond	36	2%		
Total	1,683	100%	100%	100%

Access/use online banking or financial services

	Count	%	Valid %	Weighted Valid %
I have done this	1,404	83%	85%	85%
I have not done this	241	14%	15%	15%
Did not respond	38	2%		
Total	1,683	100%	100%	100%

Access or apply for government services

	Count	%	Valid %	Weighted Valid %
I have done this	509	30%	31%	33%
I have not done this	1,134	67%	69%	67%
Did not respond	40	2%		
Total	1,683	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	Count	%	Valid %	Weighted Valid %
I have done this	103	6%	6%	7%
I have not done this	1,541	92%	94%	93%
Did not respond	39	2%		
Total	1,683	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	Count	%	Valid %	Weighted Valid %
I have done this	1,135	67%	69%	70%
I have not done this	510	30%	31%	30%
Did not respond	38	2%		
Total	1,683	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	Count	%	Valid %	Weighted Valid %
I have done this	1,216	72%	74%	73%
I have not done this	424	25%	26%	27%
Did not respond	43	3%		
Total	1,683	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	Count	%	Valid %	Weighted Valid %
I have done this	762	45%	46%	45%
I have not done this	879	52%	54%	55%
Did not respond	42	2%		
Total	1,683	100%	100%	100%

Use email

	Count	%	Valid %	Weighted Valid %
I have done this	1,555	92%	95%	95%
I have not done this	88	5%	5%	5%
Did not respond	40	2%		
Total	1,683	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	Count	%	Valid %	Weighted Valid %
I have done this	1,363	81%	83%	86%
I have not done this	281	17%	17%	14%
Did not respond	39	2%		
Total	1,683	100%	100%	100%

Shop online

	Count	%	Valid %	Weighted Valid %
I have done this	1,475	88%	90%	90%
I have not done this	166	10%	10%	10%
Did not respond	42	2%		
Total	1,683	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Used phone or computer to… Apply for job(s)

	Count	%	Valid %	Weighted Valid %
Very easy	630	37%	46%	51%
Somewhat easy	462	27%	34%	33%
Somewhat difficult	167	10%	12%	10%
Very difficult	105	6%	8%	6%
Did not respond	319	19%		
Total	1,683	100%	100%	100%

Complete a course or training to improve your job skills

	Count	%	Valid %	Weighted Valid %
Very easy	700	42%	51%	53%
Somewhat easy	441	26%	32%	31%
Somewhat difficult	145	9%	10%	10%
Very difficult	96	6%	7%	6%
Did not respond	301	18%		
Total	1,683	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	Count	%	Valid %	Weighted Valid %
Very easy	410	24%	31%	33%
Somewhat easy	505	30%	38%	37%
Somewhat difficult	273	16%	20%	19%
Very difficult	150	9%	11%	12%
Did not respond	345	20%		
Total	1,683	100%	100%	100%

Access/use online banking or financial services

	Count	%	Valid %	Weighted Valid %
Very easy	1,014	60%	65%	67%
Somewhat easy	379	23%	24%	23%
Somewhat difficult	86	5%	6%	6%
Very difficult	77	5%	5%	4%
Did not respond	127	8%		
Total	1,683	100%	100%	100%

Access or apply for government services

	Count	%	Valid %	Weighted Valid %
Very easy	428	25%	32%	36%
Somewhat easy	503	30%	37%	33%
Somewhat difficult	276	16%	21%	20%
Very difficult	139	8%	10%	11%
Did not respond	337	20%		
Total	1,683	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	Count	%	Valid %	Weighted Valid %
Very easy	348	21%	28%	29%
Somewhat easy	454	27%	36%	36%
Somewhat difficult	297	18%	24%	23%
Very difficult	160	10%	13%	12%
Did not respond	424	25%		
Total	1,683	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	Count	%	Valid %	Weighted Valid %
Very easy	720	43%	48%	53%
Somewhat easy	467	28%	31%	29%
Somewhat difficult	182	11%	12%	11%
Very difficult	116	7%	8%	7%
Did not respond	198	12%		
Total	1,683	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	Count	%	Valid %	Weighted Valid %
Very easy	931	55%	62%	62%
Somewhat easy	317	19%	21%	20%
Somewhat difficult	131	8%	9%	9%
Very difficult	126	7%	8%	8%
Did not respond	178	11%		
Total	1,683	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	Count	%	Valid %	Weighted Valid %
Very easy	489	29%	35%	38%
Somewhat easy	490	29%	35%	32%
Somewhat difficult	288	17%	20%	21%
Very difficult	149	9%	11%	9%
Did not respond	267	16%		
Total	1,683	100%	100%	100%

Use email

	Count	%	Valid %	Weighted Valid %
Very easy	1,306	78%	82%	81%
Somewhat easy	218	13%	14%	15%
Somewhat difficult	36	2%	2%	3%
Very difficult	42	2%	3%	2%
Did not respond	81	5%		
Total	1,683	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	Count	%	Valid %	Weighted Valid %
Very easy	1,154	69%	75%	79%
Somewhat easy	246	15%	16%	13%
Somewhat difficult	77	5%	5%	4%
Very difficult	60	4%	4%	4%
Did not respond	146	9%		
Total	1,683	100%	100%	100%

Shop online

	Count	%	Valid %	Weighted Valid %
Very easy	1,186	70%	76%	77%
Somewhat easy	263	16%	17%	16%
Somewhat difficult	56	3%	4%	3%
Very difficult	65	4%	4%	3%
Did not respond	113	7%		
Total	1,683	100%	100%	100%

For each of the following, please indicate your estimated level of skill in completing the task: Look for information online using a search engine (e.g., Google)

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,407	84%	86%	86%
I can do this but not well	144	9%	9%	8%
I don't know how to do this at all	46	3%	3%	3%
I am not familiar with the terms or task	44	3%	3%	2%
Did not respond	42	2%		
Total	1,683	100%	100%	100%

Save files or content from the internet (e.g., documents, pictures, music, videos, web pages)

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,070	64%	65%	70%
I can do this but not well	391	23%	24%	19%
I don't know how to do this at all	119	7%	7%	8%
I am not familiar with the terms or task	55	3%	3%	3%
Did not respond	48	3%		
Total	1,683	100%	100%	100%

Open files downloaded from the internet

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,145	68%	70%	73%
I can do this but not well	310	18%	19%	17%
I don't know how to do this at all	117	7%	7%	7%
I am not familiar with the terms or task	66	4%	4%	3%
Did not respond	45	3%		
Total	1,683	100%	100%	100%

Use shortcut keys

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	589	35%	36%	41%
I can do this but not well	564	34%	34%	32%
I don't know how to do this at all	324	19%	20%	17%
I am not familiar with the terms or task	159	9%	10%	10%
Did not respond	47	3%		
Total	1,683	100%	100%	100%

Open a new tab in my browser

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,216	72%	74%	77%
I can do this but not well	182	11%	11%	10%
I don't know how to do this at all	141	8%	9%	7%
I am not familiar with the terms or task	100	6%	6%	6%
Did not respond	44	3%		
Total	1,683	100%	100%	100%

Bookmark a website

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,067	63%	65%	70%
I can do this but not well	248	15%	15%	14%
I don't know how to do this at all	198	12%	12%	10%
I am not familiar with the terms or task	123	7%	8%	6%
Did not respond	47	3%		
Total	1,683	100%	100%	100%

Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	822	49%	50%	55%
I can do this but not well	349	21%	21%	18%
I don't know how to do this at all	283	17%	17%	17%
I am not familiar with the terms or task	177	11%	11%	10%
Did not respond	52	3%		
Total	1,683	100%	100%	100%

Send an email

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,472	87%	90%	88%
I can do this but not well	91	5%	6%	7%
I don't know how to do this at all	43	3%	3%	3%
I am not familiar with the terms or task	34	2%	2%	1%
Did not respond	43	3%		
Total	1,683	100%	100%	100%

Send a text message

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,484	88%	91%	92%
I can do this but not well	71	4%	4%	4%
I don't know how to do this at all	51	3%	3%	3%
I am not familiar with the terms or task	32	2%	2%	1%
Did not respond	45	3%		
Total	1,683	100%	100%	100%

Share files and content using tools like attachments

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,083	64%	66%	69%
I can do this but not well	326	19%	20%	17%
I don't know how to do this at all	137	8%	8%	8%
I am not familiar with the terms or task	93	6%	6%	6%
Did not respond	44	3%		
Total	1,683	100%	100%	100%

Produce digital content like text, tables, images, or audio/video files

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	621	37%	38%	43%
I can do this but not well	532	32%	33%	30%
I don't know how to do this at all	342	20%	21%	20%
I am not familiar with the terms or task	135	8%	8%	7%
Did not respond	53	3%		
Total	1,683	100%	100%	100%

Edit content produced by others like editing photos or videos

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	385	23%	24%	29%
I can do this but not well	579	34%	36%	36%
I don't know how to do this at all	523	31%	32%	28%
I am not familiar with the terms or task	143	8%	9%	7%
Did not respond	53	3%		
Total	1,683	100%	100%	100%

Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	682	41%	42%	44%
I can do this but not well	504	30%	31%	30%
I don't know how to do this at all	312	19%	19%	19%
I am not familiar with the terms or task	131	8%	8%	8%
Did not respond	54	3%		
Total	1,683	100%	100%	100%

Create new content from existing online images, music, or videos

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	347	21%	21%	27%
I can do this but not well	468	28%	29%	28%
I don't know how to do this at all	646	38%	40%	36%
I am not familiar with the terms or task	166	10%	10%	9%
Did not respond	56	3%		
Total	1,683	100%	100%	100%

Edit a website or webpage

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	206	12%	13%	17%
I can do this but not well	348	21%	21%	22%
I don't know how to do this at all	853	51%	52%	48%
I am not familiar with the terms or task	218	13%	13%	12%
Did not respond	58	3%		
Total	1,683	100%	100%	100%

Design/Build a website

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	124	7%	8%	12%
I can do this but not well	256	15%	16%	17%
I don't know how to do this at all	977	58%	60%	56%
I am not familiar with the terms or task	267	16%	16%	15%
Did not respond	59	4%		
Total	1,683	100%	100%	100%

Use online content confidently, knowing what licenses or permissions may be required

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	233	14%	14%	19%
I can do this but not well	379	23%	23%	23%
I don't know how to do this at all	750	45%	46%	45%
I am not familiar with the terms or task	264	16%	16%	14%
Did not respond	57	3%		
Total	1,683	100%	100%	100%

Share video content I created online

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	458	27%	28%	37%
I can do this but not well	409	24%	25%	24%
I don't know how to do this at all	575	34%	35%	31%
I am not familiar with the terms or task	183	11%	11%	9%
Did not respond	58	3%		
Total	1,683	100%	100%	100%

Take steps to protect my devices (e.g., using anti-virus software, strong passwords)

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	711	42%	44%	47%
I can do this but not well	598	36%	37%	34%
I don't know how to do this at all	232	14%	14%	15%
I am not familiar with the terms or task	85	5%	5%	5%
Did not respond	57	3%		
Total	1,683	100%	100%	100%

Create strong passwords to protect my online information

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	1,078	64%	66%	68%
I can do this but not well	421	25%	26%	24%
I don't know how to do this at all	68	4%	4%	4%
I am not familiar with the terms or task	59	4%	4%	4%
Did not respond	57	3%		
Total	1,683	100%	100%	100%

Look out for and try to avoid phishing attempts

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	846	50%	52%	53%
I can do this but not well	437	26%	27%	25%
I don't know how to do this at all	196	12%	12%	13%
I am not familiar with the terms or task	146	9%	9%	9%
Did not respond	58	3%		
Total	1,683	100%	100%	100%

Find support and assistance when a technical problem occurs or when using a new device, program or application

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	715	42%	44%	47%
I can do this but not well	645	38%	40%	36%
I don't know how to do this at all	189	11%	12%	12%
I am not familiar with the terms or task	77	5%	5%	4%
Did not respond	57	3%		
Total	1,683	100%	100%	100%

Know how to solve some routine hardware/software problems (e.g., close program, re-start computer, re-install/update program, check internet connection)

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	877	52%	54%	56%
I can do this but not well	473	28%	29%	25%
I don't know how to do this at all	191	11%	12%	14%
I am not familiar with the terms or task	83	5%	5%	5%
Did not respond	59	4%		
Total	1,683	100%	100%	100%

Use digital tools or online information to help me solve a technological or non-technological problem

	Count	%	Valid %	Weighted Valid %
I can do this well/easily	659	39%	41%	44%
I can do this but not well	556	33%	34%	31%
I don't know how to do this at all	292	17%	18%	18%
I am not familiar with the terms or task	118	7%	7%	6%
Did not respond	58	3%		
Total	1,683	100%	100%	100%

Does your household have enough computer devices available to meet the needs of those living in your home?

	Count	%	Valid %	Weighted Valid %
Yes	1,501	89%	92%	88%
No	122	7%	8%	12%
Did not respond	60	4%		
Total	1,683	100%	100%	100%

Have any of your devices failed to function properly at any time during the past 6 months?

	Count	%	Valid %	Weighted Valid %
Yes	745	44%	49%	47%
No	791	47%	51%	53%
Did not respond	147	9%		
Total	1,683	100%	100%	100%

Which type of device failed most recently? - Selected Choice

	Count	%	Valid %	Weighted Valid %
Smartphone/Cell phone	203	12%	26%	28%
Desktop computer	151	9%	19%	21%
Laptop computer	253	15%	33%	29%
Tablet (or similar device)	98	6%	13%	15%
Another type of Internet-connected device (please specify)	72	4%	9%	8%
Did not respond	906	54%		
Total	1,683	100%	100%	100%

How did you deal with the problem(s) you encountered when that device failed? Select all that apply.

	Count	%	Valid %	Weighted Valid %
I was able to fix it by restarting the device	322	19%	36%	34%
I was able to fix it using my knowledge and experience with hardware/software	160	10%	18%	20%
I contacted user support for help	170	10%	19%	19%
I fixed the problem with help from friends or family	187	11%	21%	17%
I found help online	147	9%	16%	17%
I got help at a computer store	88	5%	10%	8%
I got help at a community institution, such as a school, library, or church	7	<1%	<1%	1%
I was unable to fix the device and have not replaced it	79	5%	9%	13%
I was unable to fix the device and have replaced the device	96	6%	11%	11%
Something else	48	3%	5%	5%

What is your age?

	Count	%	Valid %	Weighted Valid %
18 to 24	55	3%	3%	8%
25 to 34	186	11%	11%	18%
35 to 44	246	15%	15%	17%
45 to 54	208	12%	12%	13%
55 to 64	312	19%	19%	18%
65 to 74	398	24%	24%	16%
75 or older	278	17%	17%	10%
Total	1,683	100%	100%	100%

How many adults, age 18 and over, currently live in your household, including yourself?

	Count	%	Valid %	Weighted Valid %
1 Adult	478	28%	28%	20%
2 Adults	1,044	62%	62%	59%
3 Adults	117	7%	7%	13%
4 or More Adults	44	3%	3%	7%
Total	1,683	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children less than 7 years of age

	Count	%	Valid %	Weighted Valid %
0 Children	1,132	67%	86%	80%
1 Child	90	5%	7%	9%
2 Children	62	4%	5%	7%
3 Children	24	1%	2%	4%
4 or More Children	5	<1%	<1%	<1%
Did not respond	370	22%		
Total	1,683	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 7-12 years of age

	Count	%	Valid %	Weighted Valid %
0 Children	1,098	65%	85%	82%
1 Child	127	8%	10%	11%
2 Children	57	3%	4%	6%
3 Children	9	1%	1%	1%
4 or More Children	2	<1%	<1%	<1%
Did not respond	390	23%		
Total	1,683	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 13-17 years of age

	Count	%	Valid %	Weighted Valid %
0 Children	1,100	65%	86%	81%
1 Child	125	7%	10%	13%
2 Children	45	3%	4%	4%
3 Children	14	1%	1%	1%
4 or More Children	1	<1%	<1%	<1%
Did not respond	398	24%		
Total	1,683	100%	100%	100%

Are you of Hispanic, Latino/a, or Spanish origin?

	Count	%	Valid %	Weighted Valid %
Yes	43	3%	3%	4%
No	1,640	97%	97%	96%
Total	1,683	100%	100%	100%

Which one or more of the following would you say is your race? Select all that apply.

	Count	%	Valid %	Weighted Valid %
White	1,619	96%	96%	93%
Non-White	64	4%	4%	7%
Total	1,683	100%	100%	100%

Which of the following best describes you?

	Count	%	Valid %	Weighted Valid %
Male	649	39%	39%	47%
Female	1,034	61%	61%	53%
Total	1,683	100%	100%	100%

Which of the following best describes you?

	Count	%	Valid %	Weighted Valid %
Married	1,021	61%	61%	57%
Not Married	370	22%	22%	19%
Never Married	292	17%	17%	23%
Total	1,683	100%	100%	100%

What is your annual gross household income from all sources before taxes?

	Count	%	Valid %	Weighted Valid %
Less than $15,000	77	5%	5%	5%
$15,000 to less than $25,000	129	8%	8%	5%
$25,000 to less than $35,000	132	8%	8%	5%
$35,000 to less than $50,000	192	11%	11%	12%
$50,000 to less than $75,000	299	18%	18%	15%
$75,000 to less than $100,000	314	19%	19%	15%
$100,000 to less than $150,000	312	19%	19%	20%
$150,000 or more	228	14%	14%	23%
Total	1,683	100%	100%	100%

Which of the following best describes where you live? Do you live…

	Count	%	Valid %	Weighted Valid %
Farm or Rural	412	24%	24%	19%
Small Town	266	16%	16%	20%
Larger Town	275	16%	16%	20%
Small City	216	13%	13%	9%
Medium City	330	20%	20%	25%
Large City	184	11%	11%	7%
Total	1,683	100%	100%	100%

Are you currently…?

	Count	%	Valid %	Weighted Valid %
Employed for wages	777	46%	48%	57%
Self-employed	113	7%	7%	8%
Out of work for more than 1 year	10	1%	1%	2%
Out of work less than 1 year	15	1%	1%	1%
A homemaker	31	2%	2%	2%
A student	31	2%	2%	3%
Retired	599	36%	37%	23%
Unable to work	54	3%	3%	4%
Did not respond	53	3%		
Total	1,683	100%	100%	100%

What is the highest level of education you have completed?

	Count	%	Valid %	Weighted Valid %
High School or Less	239	14%	14%	36%
Some College or Vocational Training	380	23%	23%	19%
Associate Degree	225	13%	13%	10%
Bachelor Degree	498	30%	30%	25%
Graduate or Professional Degree	341	20%	20%	10%
Total	1,683	100%	100%	100%

Have you ever served on active duty in the U.S. Armed Forces, military reserves, or National Guard?

	Count	%	Valid %	Weighted Valid %
Yes	128	8%	8%	7%
No	1,504	89%	92%	93%
Did not respond	51	3%		
Total	1,683	100%	100%	100%

Do any of the following apply to you? Select all that apply.

	Count	%	Valid %	Weighted Valid %
Blind or have serious difficulty seeing even if wearing glasses	19	1%	1%	1%
Deaf or have serious difficulty hearing even if using a hearing aid	43	3%	3%	3%
Serious difficulty walking or climbing steps	120	7%	7%	6%
Difficulty remembering, concentrating, or making decisions	86	5%	5%	7%
Difficulty with self-care such as washing all over or dressing	21	1%	1%	2%
Difficulty doing errands alone such as visiting a doctor's office or doing grocery shopping	47	3%	3%	3%
Difficulty communicating, for example understanding or being understood	34	2%	2%	3%
No, I do not have difficulty in any of these areas	1,380	82%	82%	81%

Do you use any special equipment or software to help you use a computer or electronic device because of any disability?

	Count	%	Valid %	Weighted Valid %
Yes, I do	23	1%	1%	2%
No, I do not	1,606	95%	99%	98%
Did not respond	54	3%		
Total	1,683	100%	100%	100%

Appendix C – Rural/Metro Comparison Tables

What types of computing and information device(s) do you currently have in your home?

Desktop Computer	**State**	**Rural**	**Metro**
Have	50%	46%	53%
Do not have	50%	54%	47%
Total	100%	100%	100%

Laptop Computer	**State**	**Rural**	**Metro**
Have	78%	76%	80%
Do not have	22%	24%	20%
Total	100%	100%	100%

Smartphone with an Internet Connection	**State**	**Rural**	**Metro**
Have	94%	92%	96%
Do not have	6%	8%	4%
Total	100%	100%	100%

Tablet (e.g., Ipad/Chromebook	**State**	**Rural**	**Metro**
Have	68%	65%	69%
Do not have	32%	35%	31%
Total	100%	100%	100%

Other Device	**State**	**Rural**	**Metro**
Have	19%	20%	19%
Do not have	81%	80%	81%
Total	100%	100%	100%

Do you routinely access the internet for employment or work you do outside your home?

	State	Rural	Metro
Yes	58%	50%	64%
No	41%	48%	35%
Don't know/Not sure	1%	2%	1%
Total	100%	100%	100%

Which of the following technologies do you or any member of your household use to access internet service in your home? Select all that apply.

	State	Rural	Metro
"Dial-up" internet service at home	3%	5%	1%
Higher-speed broadband internet service at home (e.g., cable, fiber optic, DSL, satellite)	71%	66%	74%
Fixed Wireless internet service (outdoor antenna w/ indoor Wi-Fi router)	20%	16%	22%
Use your smartphone to access the internet	65%	64%	66%
Use your smartphone as a "hotspot" for internet access for other devices	23%	21%	25%
Use another means of internet access in my home	4%	3%	4%
I/We have internet but I do not know or am not sure what type of home internet service I have	3%	4%	3%
I do not have any internet at my residence	5%	6%	3%

Do you have wireless (Wi-Fi) internet at home?

	State	Rural	Metro
Yes, I have Wi-Fi coverage throughout the house/residence	85%	80%	89%
Yes, I have Wi-Fi in some parts of the house but not all	6%	8%	4%
No, I do not have Wi-Fi	8%	11%	6%
Don't know/Not sure	2%	2%	1%
Total	100%	100%	100%

Excluding the costs of other services that might be bundled, approximately how much do you pay on a monthly basis for internet service?

	State	Rural	Metro
Less than $40	5%	3%	6%
$41-$60	22%	25%	19%
$61-$80	28%	28%	27%
$81-$100	21%	20%	22%
$101-$120	10%	8%	11%
More than $120	5%	7%	3%
I have internet but do not pay for it (e.g., is included in rent)	3%	2%	4%
Don't know/Not Sure	7%	6%	7%
Total	100%	100%	100%

How difficult, if at all, is it for you to fit your monthly internet bill into your household's budget?

	State	Rural	Metro
Not at all difficult	40%	37%	42%
Not too difficult	34%	32%	35%
Somewhat difficult	20%	23%	18%
Very difficult	5%	6%	4%
Don't know	2%	2%	2%
Total	100%	100%	100%

Overall, how satisfied or dissatisfied are you with the quality of your home internet connection?

	State	Rural	Metro
Very dissatisfied	11%	12%	10%
Somewhat dissatisfied	19%	21%	16%
Neither satisfied nor dissatisfied	9%	10%	9%
Somewhat satisfied	31%	29%	32%
Very satisfied	30%	27%	33%
Total	100%	100%	100%

What, if any, aspects of your home internet connection could be improved? If none, please write "none."

	State	Rural	Metro
None	30%	30%	30%
Speed	32%	36%	29%
Reliability	28%	27%	29%
Cost	9%	9%	8%
Coverage	7%	6%	7%
Provider Options	3%	2%	3%
Not sure	<1%	<1%	1%
Other	6%	5%	7%

Overall, how confident do you feel using computers, smartphones, or other electronic devices to do things you need to do online?

	State	Rural	Metro
Not at all confident	6%	7%	4%
Only a little confident	7%	8%	7%
Somewhat confident	29%	33%	25%
Very confident	58%	52%	64%
Total	100%	100%	100%

The next questions are about how you deal with information and communications technology. How well, if at all, do each of the statements describe you? When I get a new electronic device, I usually need someone else to set it up or show me how to use it

	State	Rural	Metro
Not at all well	43%	36%	48%
Not too well	16%	15%	16%
Somewhat well	24%	28%	21%
Very well	17%	21%	14%
Total	100%	100%	100%

I am more productive because of all of my electronic information devices

	State	Rural	Metro
Not at all well	10%	14%	7%
Not too well	13%	14%	12%
Somewhat well	42%	45%	40%
Very well	35%	28%	41%
Total	100%	100%	100%

I find it difficult to know whether the information I find online is trustworthy

	State	Rural	Metro
Not at all well	24%	21%	26%
Not too well	26%	21%	30%
Somewhat well	37%	41%	34%
Very well	13%	16%	10%
Total	100%	100%	100%

Between phone calls, texts, emails, social media, or other messages, I deal with too much information in my daily life

	State	Rural	Metro
Not at all well	18%	19%	17%
Not too well	23%	24%	22%
Somewhat well	44%	42%	45%
Very well	15%	15%	15%
Total	100%	100%	100%

I often feel frustrated when using technology

	State	Rural	Metro
Not at all well	32%	27%	36%
Not too well	32%	31%	32%
Somewhat well	25%	29%	22%
Very well	11%	13%	9%
Total	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Search online for... Job(s)

	State	Rural	Metro
I have done this	55%	45%	62%
I have not done this	45%	55%	38%
Total	100%	100%	100%

Information about public health issues

	State	Rural	Metro
I have done this	79%	77%	81%
I have not done this	21%	23%	19%
Total	100%	100%	100%

Reliable information about a health or medical condition

	State	Rural	Metro
I have done this	85%	82%	87%
I have not done this	15%	18%	13%
Total	100%	100%	100%

Information about personal health issues

	State	Rural	Metro
I have done this	85%	81%	88%
I have not done this	15%	19%	12%
Total	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	State	Rural	Metro
I have done this	75%	67%	82%
I have not done this	25%	33%	18%
Total	100%	100%	100%

Official government statistics or documents

	State	Rural	Metro
I have done this	57%	51%	61%
I have not done this	43%	49%	39%
Total	100%	100%	100%

Recreational, tourist, or vacation information

	State	Rural	Metro
I have done this	84%	81%	87%
I have not done this	16%	19%	13%
Total	100%	100%	100%

Please indicate how easy or difficult it was, or you think it would be, for you to do (even if you haven't done so) each of the following. Search online for… Job(s)

	State	Rural	Metro
Very easy	52%	43%	59%
Somewhat easy	31%	37%	27%
Somewhat difficult	11%	12%	10%
Very difficult	5%	7%	4%
Total	100%	100%	100%

Information about public health issues

	State	Rural	Metro
Very easy	48%	44%	50%
Somewhat easy	39%	39%	38%
Somewhat difficult	9%	11%	8%
Very difficult	4%	5%	3%
Total	100%	100%	100%

Reliable information about a health or medical condition

	State	Rural	Metro
Very easy	42%	38%	46%
Somewhat easy	39%	42%	37%
Somewhat difficult	13%	13%	13%
Very difficult	5%	7%	4%
Total	100%	100%	100%

Information about personal health issues

	State	Rural	Metro
Very easy	43%	39%	45%
Somewhat easy	41%	43%	40%
Somewhat difficult	12%	13%	12%
Very difficult	4%	5%	3%
Total	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	State	Rural	Metro
Very easy	43%	40%	46%
Somewhat easy	37%	37%	37%
Somewhat difficult	14%	17%	12%
Very difficult	7%	7%	6%
Total	100%	100%	100%

Official government statistics or documents

	State	Rural	Metro
Very easy	33%	31%	34%
Somewhat easy	37%	35%	38%
Somewhat difficult	22%	25%	20%
Very difficult	9%	10%	8%
Total	100%	100%	100%

Recreational, tourist, or vacation information

	State	Rural	Metro
Very easy	60%	55%	63%
Somewhat easy	30%	31%	29%
Somewhat difficult	7%	10%	5%
Very difficult	4%	4%	3%
Total	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Used phone or computer to… Apply for job(s)

	State	Rural	Metro
I have done this	41%	33%	47%
I have not done this	59%	67%	53%
Total	100%	100%	100%

Complete a course or training to improve your job skills

	State	Rural	Metro
I have done this	52%	43%	60%
I have not done this	48%	57%	40%
Total	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	State	Rural	Metro
I have done this	28%	28%	27%
I have not done this	72%	72%	73%
Total	100%	100%	100%

Access/use online banking or financial services

	State	Rural	Metro
I have done this	85%	81%	88%
I have not done this	15%	19%	12%
Total	100%	100%	100%

Access or apply for government services

	State	Rural	Metro
I have done this	33%	31%	35%
I have not done this	67%	69%	65%
Total	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	State	Rural	Metro
I have done this	7%	6%	7%
I have not done this	93%	94%	93%
Total	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	State	Rural	Metro
I have done this	70%	61%	77%
I have not done this	30%	39%	23%
Total	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	State	Rural	Metro
I have done this	73%	64%	79%
I have not done this	27%	36%	21%
Total	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	State	Rural	Metro
I have done this	45%	41%	49%
I have not done this	55%	59%	51%
Total	100%	100%	100%

Use email

	State	Rural	Metro
I have done this	95%	94%	96%
I have not done this	5%	6%	4%
Total	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	State	Rural	Metro
I have done this	86%	88%	85%
I have not done this	14%	12%	15%
Total	100%	100%	100%

Shop online

	State	Rural	Metro
I have done this	90%	88%	92%
I have not done this	10%	12%	8%
Total	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Used phone or computer to… Apply for job(s)

	State	Rural	Metro
Very easy	51%	44%	57%
Somewhat easy	33%	36%	31%
Somewhat difficult	10%	12%	8%
Very difficult	6%	8%	4%
Total	100%	100%	100%

Complete a course or training to improve your job skills

	State	Rural	Metro
Very easy	53%	46%	58%
Somewhat easy	31%	34%	29%
Somewhat difficult	10%	12%	9%
Very difficult	6%	8%	4%
Total	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	State	Rural	Metro
Very easy	33%	31%	34%
Somewhat easy	37%	36%	38%
Somewhat difficult	19%	19%	18%
Very difficult	12%	14%	11%
Total	100%	100%	100%

Access/use online banking or financial services

	State	Rural	Metro
Very easy	67%	61%	72%
Somewhat easy	23%	25%	22%
Somewhat difficult	6%	9%	4%
Very difficult	4%	6%	3%
Total	100%	100%	100%

Access or apply for government services

	State	Rural	Metro
Very easy	36%	35%	37%
Somewhat easy	33%	32%	34%
Somewhat difficult	20%	20%	20%
Very difficult	11%	13%	9%
Total	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	State	Rural	Metro
Very easy	29%	28%	30%
Somewhat easy	36%	34%	38%
Somewhat difficult	23%	25%	22%
Very difficult	12%	13%	11%
Total	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	State	Rural	Metro
Very easy	53%	48%	57%
Somewhat easy	29%	29%	29%
Somewhat difficult	11%	13%	9%
Very difficult	7%	10%	4%
Total	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	State	Rural	Metro
Very easy	62%	56%	67%
Somewhat easy	20%	20%	20%
Somewhat difficult	9%	12%	7%
Very difficult	8%	12%	6%
Total	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	State	Rural	Metro
Very easy	38%	36%	40%
Somewhat easy	32%	31%	33%
Somewhat difficult	21%	22%	20%
Very difficult	9%	12%	7%
Total	100%	100%	100%

Use email

	State	Rural	Metro
Very easy	81%	76%	85%
Somewhat easy	15%	18%	12%
Somewhat difficult	3%	4%	1%
Very difficult	2%	2%	1%
Total	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	State	Rural	Metro
Very easy	79%	76%	82%
Somewhat easy	13%	16%	11%
Somewhat difficult	4%	3%	5%
Very difficult	4%	4%	3%
Total	100%	100%	100%

Shop online

	State	Rural	Metro
Very easy	77%	72%	82%
Somewhat easy	16%	20%	12%
Somewhat difficult	3%	4%	3%
Very difficult	3%	4%	3%
Total	100%	100%	100%

For each of the following, please indicate your estimated level of skill in completing the task: Look for information online using a search engine (e.g., Google)

	State	Rural	Metro
I can do this well/easily	86%	84%	88%
I can do this but not well	8%	10%	7%
I don't know how to do this at all	3%	4%	3%
I am not familiar with the terms or task	2%	3%	2%
Total	100%	100%	100%

Save files or content from the internet (e.g., documents, pictures, music, videos, web pages)

	State	Rural	Metro
I can do this well/easily	70%	60%	77%
I can do this but not well	19%	25%	15%
I don't know how to do this at all	8%	11%	6%
I am not familiar with the terms or task	3%	4%	2%
Total	100%	100%	100%

Open files downloaded from the internet

	State	Rural	Metro
I can do this well/easily	73%	65%	79%
I can do this but not well	17%	22%	12%
I don't know how to do this at all	7%	8%	6%
I am not familiar with the terms or task	3%	4%	3%
Total	100%	100%	100%

Use shortcut keys

	State	Rural	Metro
I can do this well/easily	41%	34%	46%
I can do this but not well	32%	34%	31%
I don't know how to do this at all	17%	22%	14%
I am not familiar with the terms or task	10%	11%	9%
Total	100%	100%	100%

Open a new tab in my browser

	State	Rural	Metro
I can do this well/easily	77%	70%	83%
I can do this but not well	10%	13%	8%
I don't know how to do this at all	7%	10%	4%
I am not familiar with the terms or task	6%	7%	5%
Total	100%	100%	100%

Bookmark a website

	State	Rural	Metro
I can do this well/easily	70%	61%	77%
I can do this but not well	14%	19%	10%
I don't know how to do this at all	10%	13%	8%
I am not familiar with the terms or task	6%	7%	5%
Total	100%	100%	100%

Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created

	State	Rural	Metro
I can do this well/easily	55%	47%	61%
I can do this but not well	18%	18%	18%
I don't know how to do this at all	17%	23%	13%
I am not familiar with the terms or task	10%	13%	8%
Total	100%	100%	100%

Send an email

	State	Rural	Metro
I can do this well/easily	88%	85%	91%
I can do this but not well	7%	9%	5%
I don't know how to do this at all	3%	4%	3%
I am not familiar with the terms or task	1%	2%	1%
Total	100%	100%	100%

Send a text message

	State	Rural	Metro
I can do this well/easily	92%	90%	94%
I can do this but not well	4%	5%	2%
I don't know how to do this at all	3%	3%	3%
I am not familiar with the terms or task	1%	2%	1%
Total	100%	100%	100%

Share files and content using tools like attachments

	State	Rural	Metro
I can do this well/easily	69%	62%	75%
I can do this but not well	17%	22%	14%
I don't know how to do this at all	8%	10%	6%
I am not familiar with the terms or task	6%	7%	5%
Total	100%	100%	100%

Produce digital content like text, tables, images, or audio/video files

	State	Rural	Metro
I can do this well/easily	43%	39%	46%
I can do this but not well	30%	31%	30%
I don't know how to do this at all	20%	20%	19%
I am not familiar with the terms or task	7%	9%	5%
Total	100%	100%	100%

Edit content produced by others like editing photos or videos

	State	Rural	Metro
I can do this well/easily	29%	24%	34%
I can do this but not well	36%	37%	34%
I don't know how to do this at all	28%	30%	26%
I am not familiar with the terms or task	7%	9%	6%
Total	100%	100%	100%

Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)

	State	Rural	Metro
I can do this well/easily	44%	37%	50%
I can do this but not well	30%	31%	29%
I don't know how to do this at all	19%	23%	15%
I am not familiar with the terms or task	8%	9%	7%
Total	100%	100%	100%

Create new content from existing online images, music, or videos

	State	Rural	Metro
I can do this well/easily	27%	24%	30%
I can do this but not well	28%	26%	30%
I don't know how to do this at all	36%	38%	34%
I am not familiar with the terms or task	9%	11%	7%
Total	100%	100%	100%

Edit a website or webpage

	State	Rural	Metro
I can do this well/easily	17%	13%	21%
I can do this but not well	22%	20%	24%
I don't know how to do this at all	48%	51%	46%
I am not familiar with the terms or task	12%	16%	9%
Total	100%	100%	100%

Design/Build a website

	State	Rural	Metro
I can do this well/easily	12%	8%	15%
I can do this but not well	17%	14%	20%
I don't know how to do this at all	56%	58%	54%
I am not familiar with the terms or task	15%	19%	11%
Total	100%	100%	100%

Use online content confidently, knowing what licenses or permissions may be required

	State	Rural	Metro
I can do this well/easily	19%	14%	22%
I can do this but not well	23%	21%	24%
I don't know how to do this at all	45%	46%	43%
I am not familiar with the terms or task	14%	18%	10%
Total	100%	100%	100%

Share video content I created online

	State	Rural	Metro
I can do this well/easily	37%	29%	42%
I can do this but not well	24%	25%	23%
I don't know how to do this at all	31%	34%	28%
I am not familiar with the terms or task	9%	12%	7%
Total	100%	100%	100%

Take steps to protect my devices (e.g., using anti-virus software, strong passwords)

	State	Rural	Metro
I can do this well/easily	47%	42%	50%
I can do this but not well	34%	33%	35%
I don't know how to do this at all	15%	18%	12%
I am not familiar with the terms or task	5%	7%	3%
Total	100%	100%	100%

Create strong passwords to protect my online information

	State	Rural	Metro
I can do this well/easily	68%	61%	73%
I can do this but not well	24%	30%	20%
I don't know how to do this at all	4%	5%	4%
I am not familiar with the terms or task	4%	4%	3%
Total	100%	100%	100%

Look out for and try to avoid phishing attempts

	State	Rural	Metro
I can do this well/easily	53%	43%	61%
I can do this but not well	25%	29%	21%
I don't know how to do this at all	13%	16%	11%
I am not familiar with the terms or task	9%	11%	6%
Total	100%	100%	100%

Find support and assistance when a technical problem occurs or when using a new device, program or application

	State	Rural	Metro
I can do this well/easily	47%	42%	52%
I can do this but not well	36%	36%	36%
I don't know how to do this at all	12%	16%	9%
I am not familiar with the terms or task	4%	5%	4%
Total	100%	100%	100%

Know how to solve some routine hardware/software problems (e.g., close program, re-start computer, re-install/update program, check internet connection)

	State	Rural	Metro
I can do this well/easily	56%	50%	62%
I can do this but not well	25%	26%	24%
I don't know how to do this at all	14%	18%	10%
I am not familiar with the terms or task	5%	6%	4%
Total	100%	100%	100%

Use digital tools or online information to help me solve a technological or non-technological problem

	State	Rural	Metro
I can do this well/easily	44%	38%	49%
I can do this but not well	31%	30%	32%
I don't know how to do this at all	18%	23%	15%
I am not familiar with the terms or task	6%	9%	4%
Total	100%	100%	100%

Does your household have enough computer devices available to meet the needs of those living in your home?

	State	Rural	Metro
Yes	88%	87%	89%
No	12%	13%	11%
Total	100%	100%	100%

Have any of your devices failed to function properly at any time during the past 6 months?

	State	Rural	Metro
Yes	47%	45%	49%
No	53%	55%	51%
Total	100%	100%	100%

Which type of device failed most recently? - Selected Choice

	State	Rural	Metro
Smartphone/Cell phone	28%	30%	26%
Desktop computer	21%	20%	22%
Laptop computer	29%	26%	31%
Tablet (or similar device)	15%	17%	13%
Another type of Internet-connected device (please specify)	8%	7%	8%
Total	100%	100%	100%

How did you deal with the problem(s) you encountered when that device failed? Select all that apply.

	State	Rural	Metro
I was able to fix it by restarting the device	34%	32%	36%
I was able to fix it using my knowledge and experience with hardware/software	20%	11%	27%
I contacted user support for help	19%	18%	19%
I fixed the problem with help from friends or family	17%	19%	15%
I found help online	17%	12%	20%
I got help at a computer store	8%	6%	9%
I got help at a community institution, such as a school, library, or church	1%	3%	<1%
I was unable to fix the device and have not replaced it	13%	14%	13%
I was unable to fix the device and have replaced the device	11%	8%	13%
Something else	5%	5%	5%

What is your age?

	State	Rural	Metro
18 to 24	8%	2%	13%
25 to 34	18%	17%	18%
35 to 44	17%	16%	18%
45 to 54	13%	13%	13%
55 to 64	18%	20%	17%
65 to 74	16%	20%	13%
75 or older	10%	12%	8%
Total	100%	100%	100%

How many adults, age 18 and over, currently live in your household, including yourself?

	State	Rural	Metro
1 Adult	20%	21%	19%
2 Adults	59%	57%	61%
3 Adults	13%	17%	11%
4 or More Adults	7%	5%	9%
Total	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children less than 7 years of age

	State	Rural	Metro
0 Children	80%	82%	79%
1 Child	9%	9%	9%
2 Children	7%	4%	8%
3 Children	4%	5%	3%
4 or More Children	<1%	<1%	<1%
Total	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 7-12 years of age

	State	Rural	Metro
0 Children	82%	82%	82%
1 Child	11%	10%	11%
2 Children	6%	7%	5%
3 Children	1%	<1%	1%
4 or More Children	<1%	<1%	<1%
Total	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 13-17 years of age

	State	Rural	Metro
0 Children	81%	84%	79%
1 Child	13%	13%	14%
2 Children	4%	3%	5%
3 Children	1%	<1%	2%
4 or More Children	<1%	<1%	<1%
Total	100%	100%	100%

Are you of Hispanic, Latino/a, or Spanish origin?

	State	Rural	Metro
Yes	4%	4%	5%
No	96%	96%	95%
Total	100%	100%	100%

Which one or more of the following would you say is your race? Select all that apply.

	State	Rural	Metro
White	93%	97%	89%
Non-White	7%	3%	11%
Total	100%	100%	100%

Which of the following best describes you?

	State	Rural	Metro
Male	47%	45%	49%
Female	53%	55%	51%
Total	100%	100%	100%

Which of the following best describes you?

	State	Rural	Metro
Married	57%	62%	54%
Not Married	19%	23%	17%
Never Married	23%	15%	30%
Total	100%	100%	100%

What is your annual gross household income from all sources before taxes?

	State	Rural	Metro
Less than $15,000	5%	4%	5%
$15,000 to less than $25,000	5%	8%	3%
$25,000 to less than $35,000	5%	6%	5%
$35,000 to less than $50,000	12%	12%	11%
$50,000 to less than $75,000	15%	14%	16%
$75,000 to less than $100,000	15%	20%	11%
$100,000 to less than $150,000	20%	15%	24%
$150,000 or more	23%	21%	25%
Total	100%	100%	100%

Which of the following best describes where you live? Do you live…

	State	Rural	Metro
Farm or Rural	19%	29%	12%
Small Town	20%	35%	7%
Larger Town	20%	31%	12%
Small City	9%	5%	12%
Medium City	25%	<1%	44%
Large City	7%	<1%	13%
Total	100%	100%	100%

Are you currently…?

	State	Rural	Metro
Employed for wages	57%	50%	63%
Self-employed	8%	12%	5%
Out of work for more than 1 year	2%	1%	2%
Out of work less than 1 year	1%	1%	1%
A homemaker	2%	2%	2%
A student	3%	1%	5%
Retired	23%	28%	18%
Unable to work	4%	5%	4%
Total	100%	100%	100%

What is the highest level of education you have completed?

	State	Rural	Metro
High School or Less	36%	43%	30%
Some College or Vocational Training	19%	21%	18%
Associate Degree	10%	11%	10%
Bachelor Degree	25%	18%	30%
Graduate or Professional Degree	10%	7%	12%
Total	100%	100%	100%

Have you ever served on active duty in the U.S. Armed Forces, military reserves, or National Guard?

	State	Rural	Metro
Yes	7%	9%	6%
No	93%	91%	94%
Total	100%	100%	100%

Do any of the following apply to you? Select all that apply.

	State	Rural	Metro
Blind or have serious difficulty seeing even if wearing glasses	1%	1%	1%
Deaf or have serious difficulty hearing even if using a hearing aid	3%	4%	2%
Serious difficulty walking or climbing steps	6%	10%	4%
Difficulty remembering, concentrating, or making decisions	7%	6%	7%
Difficulty with self-care such as washing all over or dressing	2%	3%	1%
Difficulty doing errands alone such as visiting a doctor's office or doing grocery shopping	3%	2%	3%
Difficulty communicating, for example understanding or being understood	3%	3%	3%
No, I do not have difficulty in any of these areas	81%	80%	81%

Do you use any special equipment or software to help you use a computer or electronic device because of any disability?

	State	Rural	Metro
Yes, I do	2%	1%	3%
No, I do not	98%	99%	97%
Total	100%	100%	100%

Appendix D – Age Group Comparison Tables

What types of computing and information device(s) do you currently have in your home?

Desktop Computer	**State**	**18-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65-74**	**75 or older**
Have	50%	54%	38%	48%	53%	47%	61%	55%
Do not have	50%	46%	62%	52%	47%	53%	39%	45%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Laptop Computer	**State**	**18-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65-74**	**75 or older**
Have	78%	77%	84%	84%	88%	74%	67%	70%
Do not have	22%	23%	16%	16%	12%	26%	33%	30%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Smartphone with an Internet Connection	**State**	**18-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65-74**	**75 or older**
Have	94%	100%	100%	99%	100%	91%	88%	79%
Do not have	6%	<1%	<1%	1%	<1%	9%	12%	21%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Tablet (e.g., Ipad/Chromebook	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Have	68%	45%	71%	75%	82%	69%	61%	57%
Do not have	32%	55%	29%	25%	18%	31%	39%	43%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Other Device	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Have	19%	18%	22%	27%	13%	12%	24%	10%
Do not have	81%	82%	78%	73%	87%	88%	76%	90%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Do you routinely access the internet for employment or work you do outside your home?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Yes	58%	74%	73%	78%	73%	54%	30%	11%
No	41%	26%	23%	21%	26%	46%	69%	89%
Don’t know/Not sure	1%	<1%	4%	2%	1%	<1%	<1%	<1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Which of the following technologies do you or any member of your household use to access internet service in your home? Select all that apply.

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
"Dial-up" internet service at home	3%	1%	1%	5%	<1%	2%	5%	3%
Higher-speed broadband internet service at home (e.g., cable, fiber optic, DSL, satellite)	71%	59%	78%	70%	83%	72%	70%	53%
Fixed Wireless internet service (outdoor antenna w/ indoor Wi-Fi router)	20%	36%	12%	19%	19%	19%	20%	23%
Use your smartphone to access the internet	65%	66%	75%	72%	68%	60%	59%	53%
Use your smartphone as a "hotspot" for internet access for other devices	23%	37%	38%	27%	31%	15%	8%	5%
Use another means of internet access in my home	4%	6%	2%	4%	3%	3%	3%	6%
I/We have internet but I do not know or am not sure what type of home internet service I have	3%	3%	1%	3%	1%	5%	3%	6%
I do not have any internet at my residence	5%	4%	<1%	2%	1%	8%	6%	11%

Do you have wireless (Wi-Fi) internet at home?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Yes, I have Wi-Fi coverage throughout the house/residence	85%	95%	94%	87%	86%	82%	82%	65%
Yes, I have Wi-Fi in some parts of the house but not all	6%	<1%	1%	5%	9%	5%	8%	13%
No, I do not have Wi-Fi	8%	5%	4%	8%	4%	10%	9%	19%
Don't know/Not sure	2%	<1%	1%	<1%	1%	3%	2%	4%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Excluding the costs of other services that might be bundled, approximately how much do you pay on a monthly basis for internet service?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Less than $40	5%	2%	1%	5%	1%	6%	10%	7%
$41-$60	22%	19%	20%	25%	15%	22%	28%	20%
$61-$80	28%	17%	28%	27%	39%	24%	27%	29%
$81-$100	21%	16%	25%	19%	27%	25%	18%	9%
$101-$120	10%	7%	14%	12%	6%	11%	8%	8%
More than $120	5%	1%	3%	6%	7%	6%	5%	6%
I have internet but do not pay for it (e.g., is included in rent)	3%	21%	1%	1%	2%	3%	<1%	2%
Don't know/Not Sure	7%	17%	8%	4%	2%	3%	4%	18%
Total	100%	100%	100%	100%	100%	100%	100%	100%

How difficult, if at all, is it for you to fit your monthly internet bill into your household's budget?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Not at all difficult	40%	29%	38%	48%	41%	34%	44%	38%
Not too difficult	34%	39%	36%	25%	27%	42%	33%	36%
Somewhat difficult	20%	18%	18%	18%	24%	22%	20%	19%
Very difficult	5%	6%	3%	8%	8%	2%	2%	4%
Don't know	2%	8%	5%	<1%	<1%	<1%	1%	4%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Overall, how satisfied or dissatisfied are you with the quality of your home internet connection?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very dissatisfied	11%	11%	6%	7%	14%	13%	14%	17%
Somewhat dissatisfied	19%	17%	11%	19%	22%	21%	20%	23%
Neither satisfied nor dissatisfied	9%	3%	16%	5%	6%	7%	15%	11%
Somewhat satisfied	31%	50%	31%	33%	26%	29%	26%	28%
Very satisfied	30%	19%	36%	37%	31%	31%	26%	21%
Total	100%	100%	100%	100%	100%	100%	100%	100%

What, if any, aspects of your home internet connection could be improved? If none, please write "none."

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
None	30%	18%	22%	23%	16%	29%	47%	62%
Speed	32%	46%	31%	42%	33%	29%	28%	18%
Reliability	28%	34%	37%	18%	40%	33%	20%	14%
Cost	9%	2%	7%	14%	15%	5%	7%	5%
Coverage	7%	10%	7%	12%	14%	2%	2%	<1%
Provider options	3%	<1%	5%	5%	1%	2%	1%	<1%
Not sure	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Other	6%	2%	9%	3%	7%	10%	3%	3%

Overall, how confident do you feel using computers, smartphones, or other electronic devices to do things you need to do online?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Not at all confident	6%	2%	1%	4%	2%	6%	6%	22%
Only a little confident	7%	1%	<1%	6%	7%	8%	15%	16%
Somewhat confident	29%	20%	14%	20%	27%	35%	45%	40%
Very confident	58%	77%	84%	69%	65%	51%	34%	22%
Total	100%	100%	100%	100%	100%	100%	100%	100%

The next questions are about how you deal with information and communications technology.
How well, if at all, do each of the statements describe you?
When I get a new electronic device, I usually need someone else to set it up or show me how to use it

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Not at all well	43%	57%	63%	54%	38%	38%	22%	22%
Not too well	16%	19%	12%	15%	18%	18%	15%	15%
Somewhat well	24%	9%	12%	18%	29%	32%	38%	28%
Very well	17%	15%	12%	12%	15%	12%	25%	35%
Total	100%	100%	100%	100%	100%	100%	100%	100%

I am more productive because of all of my electronic information devices

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Not at all well	10%	6%	7%	6%	8%	12%	11%	26%
Not too well	13%	14%	11%	10%	7%	14%	18%	18%
Somewhat well	42%	37%	39%	49%	46%	34%	45%	45%
Very well	35%	44%	43%	34%	40%	39%	27%	11%
Total	100%	100%	100%	100%	100%	100%	100%	100%

I find it difficult to know whether the information I find online is trustworthy

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Not at all well	24%	25%	32%	36%	28%	14%	12%	18%
Not too well	26%	42%	24%	23%	32%	27%	25%	17%
Somewhat well	37%	27%	34%	28%	32%	43%	51%	43%
Very well	13%	7%	10%	13%	8%	16%	13%	22%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Between phone calls, texts, emails, social media, or other messages, I deal with too much information in my daily life

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Not at all well	18%	17%	18%	22%	13%	20%	17%	16%
Not too well	23%	33%	25%	18%	17%	24%	26%	22%
Somewhat well	44%	45%	42%	43%	48%	44%	44%	43%
Very well	15%	5%	16%	16%	22%	12%	13%	19%
Total	100%	100%	100%	100%	100%	100%	100%	100%

I often feel frustrated when using technology

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Not at all well	32%	47%	45%	39%	29%	29%	21%	14%
Not too well	32%	35%	30%	34%	33%	34%	33%	20%
Somewhat well	25%	18%	14%	21%	31%	27%	34%	33%
Very well	11%	<1%	10%	6%	8%	10%	13%	33%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Search online for... Job(s)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	55%	87%	81%	70%	60%	52%	19%	9%
I have not done this	45%	13%	19%	30%	40%	48%	81%	91%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Information about public health issues

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	79%	89%	87%	82%	87%	80%	71%	56%
I have not done this	21%	11%	13%	18%	13%	20%	29%	44%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Reliable information about a health or medical condition

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	85%	93%	91%	91%	89%	81%	80%	65%
I have not done this	15%	7%	9%	9%	11%	19%	20%	35%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Information about personal health issues

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	85%	98%	91%	85%	90%	82%	80%	66%
I have not done this	15%	2%	9%	15%	10%	18%	20%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	75%	91%	86%	86%	81%	72%	66%	41%
I have not done this	25%	9%	14%	14%	19%	28%	34%	59%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Official government statistics or documents

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	57%	54%	61%	69%	62%	55%	49%	37%
I have not done this	43%	46%	39%	31%	38%	45%	51%	63%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Recreational, tourist, or vacation information

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	84%	88%	96%	90%	87%	81%	78%	61%
I have not done this	16%	12%	4%	10%	13%	19%	22%	39%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Please indicate how easy or difficult it was, or you think it would be, for you to do (even if you haven't done so) each of the following. Search online for… Job(s)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	52%	68%	72%	65%	52%	42%	27%	19%
Somewhat easy	31%	17%	25%	26%	38%	35%	48%	28%
Somewhat difficult	11%	15%	3%	9%	9%	15%	11%	27%
Very difficult	5%	<1%	1%	<1%	<1%	8%	14%	26%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Information about public health issues

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	48%	51%	60%	49%	57%	39%	40%	32%
Somewhat easy	39%	38%	28%	41%	36%	45%	41%	42%
Somewhat difficult	9%	11%	10%	8%	6%	11%	9%	12%
Very difficult	4%	1%	1%	2%	1%	5%	10%	14%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Reliable information about a health or medical condition

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	42%	46%	51%	42%	53%	36%	36%	28%
Somewhat easy	39%	29%	31%	41%	38%	43%	47%	44%
Somewhat difficult	13%	24%	13%	11%	8%	15%	11%	16%
Very difficult	5%	1%	4%	6%	1%	6%	7%	12%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Information about personal health issues

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	43%	36%	53%	45%	54%	37%	35%	31%
Somewhat easy	41%	38%	33%	41%	42%	45%	46%	47%
Somewhat difficult	12%	26%	13%	10%	4%	12%	12%	12%
Very difficult	4%	1%	1%	3%	<1%	6%	8%	11%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	43%	47%	57%	49%	52%	32%	31%	25%
Somewhat easy	37%	29%	35%	37%	34%	36%	45%	37%
Somewhat difficult	14%	19%	7%	11%	12%	22%	13%	17%
Very difficult	7%	6%	1%	3%	2%	9%	11%	20%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Official government statistics or documents

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	33%	21%	43%	41%	40%	27%	24%	19%
Somewhat easy	37%	44%	30%	39%	37%	31%	45%	37%
Somewhat difficult	22%	29%	22%	15%	18%	32%	19%	22%
Very difficult	9%	6%	6%	5%	5%	11%	12%	23%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Recreational, tourist, or vacation information

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	60%	69%	76%	68%	65%	50%	44%	33%
Somewhat easy	30%	30%	19%	22%	29%	35%	41%	39%
Somewhat difficult	7%	2%	4%	8%	7%	7%	10%	14%
Very difficult	4%	<1%	1%	2%	<1%	7%	5%	13%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years.

Used phone or computer to… Apply for job(s)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	41%	86%	65%	57%	41%	32%	9%	3%
I have not done this	59%	14%	35%	43%	59%	68%	91%	97%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Complete a course or training to improve your job skills

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	52%	76%	79%	70%	69%	42%	18%	6%
I have not done this	48%	24%	21%	30%	31%	58%	82%	94%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	28%	19%	24%	30%	21%	29%	47%	9%
I have not done this	72%	81%	76%	70%	79%	71%	53%	91%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Access/use online banking or financial services

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	85%	93%	97%	92%	96%	78%	78%	55%
I have not done this	15%	7%	3%	8%	4%	22%	22%	45%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Access or apply for government services

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	33%	39%	37%	40%	33%	29%	38%	11%
I have not done this	67%	61%	63%	60%	67%	71%	62%	89%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	7%	8%	9%	12%	5%	6%	2%	1%
I have not done this	93%	92%	91%	88%	95%	94%	98%	99%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	70%	93%	89%	85%	84%	60%	48%	25%
I have not done this	30%	7%	11%	15%	16%	40%	52%	75%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	73%	99%	94%	85%	77%	65%	48%	39%
I have not done this	27%	1%	6%	15%	23%	35%	52%	61%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	45%	46%	51%	50%	42%	54%	39%	25%
I have not done this	55%	54%	49%	50%	58%	46%	61%	75%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use email

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	95%	100%	97%	97%	100%	90%	96%	83%
I have not done this	5%	<1%	3%	3%	<1%	10%	4%	17%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	86%	99%	97%	94%	96%	80%	74%	61%
I have not done this	14%	1%	3%	6%	4%	20%	26%	39%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Shop online

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I have done this	90%	100%	97%	97%	99%	83%	87%	65%
I have not done this	10%	<1%	3%	3%	1%	17%	13%	35%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years.

Used phone or computer to… Apply for job(s)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	51%	67%	72%	61%	50%	37%	28%	23%
Somewhat easy	33%	24%	23%	27%	39%	43%	44%	31%
Somewhat difficult	10%	9%	4%	8%	9%	10%	16%	19%
Very difficult	6%	<1%	<1%	4%	1%	10%	12%	26%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Complete a course or training to improve your job skills

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	53%	57%	75%	62%	55%	41%	32%	26%
Somewhat easy	31%	37%	21%	28%	32%	41%	39%	24%
Somewhat difficult	10%	6%	4%	7%	13%	9%	16%	25%
Very difficult	6%	<1%	<1%	3%	<1%	9%	13%	24%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	33%	23%	46%	40%	37%	24%	22%	23%
Somewhat easy	37%	43%	31%	34%	40%	39%	48%	16%
Somewhat difficult	19%	22%	17%	14%	18%	22%	17%	30%
Very difficult	12%	12%	5%	12%	6%	16%	14%	30%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Access/use online banking or financial services

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	67%	55%	87%	71%	76%	65%	53%	41%
Somewhat easy	23%	35%	11%	23%	20%	21%	30%	33%
Somewhat difficult	6%	10%	1%	3%	3%	9%	11%	7%
Very difficult	4%	1%	<1%	4%	1%	5%	6%	18%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Access or apply for government services

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	36%	30%	49%	48%	35%	28%	23%	27%
Somewhat easy	33%	30%	33%	26%	39%	36%	43%	23%
Somewhat difficult	20%	29%	13%	20%	20%	20%	22%	22%
Very difficult	11%	10%	5%	7%	6%	17%	13%	28%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	29%	15%	45%	36%	32%	20%	17%	26%
Somewhat easy	36%	56%	30%	33%	34%	40%	41%	16%
Somewhat difficult	23%	23%	18%	24%	23%	26%	28%	24%
Very difficult	12%	7%	6%	8%	12%	14%	14%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	53%	72%	78%	63%	52%	41%	27%	25%
Somewhat easy	29%	28%	19%	27%	38%	31%	38%	23%
Somewhat difficult	11%	<1%	3%	8%	8%	16%	23%	18%
Very difficult	7%	<1%	<1%	2%	2%	11%	12%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	62%	92%	85%	68%	61%	51%	40%	32%
Somewhat easy	20%	8%	11%	19%	24%	24%	29%	24%
Somewhat difficult	9%	<1%	4%	11%	8%	10%	14%	18%
Very difficult	8%	<1%	<1%	2%	7%	15%	16%	26%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	38%	41%	54%	47%	37%	30%	25%	16%
Somewhat easy	32%	36%	31%	26%	31%	39%	35%	30%
Somewhat difficult	21%	24%	13%	20%	25%	17%	27%	29%
Very difficult	9%	<1%	2%	7%	7%	15%	13%	25%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use email

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	81%	94%	94%	83%	84%	73%	72%	64%
Somewhat easy	15%	6%	5%	14%	14%	21%	20%	22%
Somewhat difficult	3%	<1%	1%	2%	1%	4%	5%	4%
Very difficult	2%	<1%	<1%	1%	<1%	2%	2%	9%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	79%	98%	95%	89%	83%	67%	58%	60%
Somewhat easy	13%	2%	4%	6%	15%	23%	25%	15%
Somewhat difficult	4%	<1%	1%	5%	2%	5%	9%	10%
Very difficult	4%	<1%	<1%	<1%	<1%	5%	8%	16%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Shop online

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Very easy	77%	96%	91%	87%	86%	70%	57%	51%
Somewhat easy	16%	4%	9%	8%	14%	21%	31%	22%
Somewhat difficult	3%	<1%	<1%	5%	<1%	2%	6%	12%
Very difficult	3%	<1%	<1%	<1%	<1%	7%	6%	15%
Total	100%	100%	100%	100%	100%	100%	100%	100%

For each of the following, please indicate your estimated level of skill in completing the task: Look for information online using a search engine (e.g., Google)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	86%	100%	99%	97%	95%	79%	73%	55%
I can do this but not well	8%	<1%	1%	2%	5%	10%	22%	19%
I don't know how to do this at all	3%	<1%	<1%	<1%	<1%	8%	2%	12%
I am not familiar with the terms or task	2%	<1%	<1%	<1%	<1%	4%	3%	14%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Save files or content from the internet (e.g., documents, pictures, music, videos, web pages)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	70%	98%	98%	81%	68%	58%	45%	38%
I can do this but not well	19%	2%	1%	12%	29%	24%	39%	26%
I don't know how to do this at all	8%	<1%	1%	5%	3%	14%	10%	23%
I am not familiar with the terms or task	3%	<1%	<1%	3%	<1%	4%	5%	13%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Open files downloaded from the internet

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	73%	100%	97%	83%	72%	63%	51%	42%
I can do this but not well	17%	<1%	2%	14%	26%	20%	33%	19%
I don't know how to do this at all	7%	<1%	1%	3%	2%	12%	10%	24%
I am not familiar with the terms or task	3%	<1%	<1%	<1%	<1%	5%	7%	15%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use shortcut keys

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	41%	48%	69%	57%	43%	27%	20%	11%
I can do this but not well	32%	40%	28%	24%	36%	35%	37%	29%
I don't know how to do this at all	17%	5%	2%	12%	17%	28%	27%	32%
I am not familiar with the terms or task	10%	7%	1%	8%	4%	10%	16%	28%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Open a new tab in my browser

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	77%	100%	99%	90%	87%	73%	52%	34%
I can do this but not well	10%	<1%	<1%	5%	11%	7%	26%	26%
I don't know how to do this at all	7%	<1%	1%	3%	1%	12%	10%	19%
I am not familiar with the terms or task	6%	<1%	<1%	1%	1%	8%	12%	21%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Bookmark a website

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	70%	95%	93%	83%	77%	62%	41%	34%
I can do this but not well	14%	5%	6%	11%	17%	14%	27%	16%
I don't know how to do this at all	10%	<1%	1%	6%	4%	16%	18%	28%
I am not familiar with the terms or task	6%	<1%	<1%	1%	1%	8%	14%	23%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	55%	81%	88%	71%	54%	41%	26%	15%
I can do this but not well	18%	18%	11%	11%	23%	20%	24%	23%
I don't know how to do this at all	17%	<1%	<1%	13%	21%	27%	25%	36%
I am not familiar with the terms or task	10%	1%	1%	5%	2%	12%	25%	27%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Send an email

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	88%	94%	99%	93%	95%	82%	80%	74%
I can do this but not well	7%	6%	1%	6%	5%	9%	16%	7%
I don't know how to do this at all	3%	<1%	<1%	2%	<1%	8%	3%	9%
I am not familiar with the terms or task	1%	<1%	<1%	<1%	<1%	1%	2%	9%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Send a text message

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	92%	100%	99%	96%	99%	91%	84%	73%
I can do this but not well	4%	<1%	1%	4%	1%	3%	11%	6%
I don't know how to do this at all	3%	<1%	1%	<1%	<1%	5%	4%	12%
I am not familiar with the terms or task	1%	<1%	<1%	<1%	<1%	<1%	1%	10%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Share files and content using tools like attachments

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	69%	90%	96%	80%	82%	57%	44%	33%
I can do this but not well	17%	10%	4%	16%	17%	23%	28%	23%
I don't know how to do this at all	8%	<1%	<1%	2%	<1%	15%	15%	23%
I am not familiar with the terms or task	6%	<1%	<1%	2%	<1%	6%	13%	21%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Produce digital content like text, tables, images, or audio/video files

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	43%	53%	71%	62%	36%	32%	21%	14%
I can do this but not well	30%	42%	24%	23%	47%	33%	29%	24%
I don't know how to do this at all	20%	6%	3%	11%	18%	31%	34%	38%
I am not familiar with the terms or task	7%	<1%	2%	5%	<1%	4%	15%	24%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Edit content produced by others like editing photos or videos

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	29%	49%	46%	44%	22%	24%	10%	7%
I can do this but not well	36%	38%	41%	30%	48%	32%	32%	30%
I don't know how to do this at all	28%	12%	11%	22%	24%	38%	42%	42%
I am not familiar with the terms or task	7%	1%	2%	3%	6%	5%	16%	21%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	44%	57%	68%	61%	43%	34%	23%	11%
I can do this but not well	30%	30%	25%	24%	28%	30%	37%	37%
I don't know how to do this at all	19%	5%	4%	12%	26%	31%	24%	26%
I am not familiar with the terms or task	8%	7%	2%	4%	2%	5%	15%	26%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Create new content from existing online images, music, or videos

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	27%	43%	48%	38%	22%	19%	11%	6%
I can do this but not well	28%	39%	35%	30%	36%	23%	19%	17%
I don't know how to do this at all	36%	17%	13%	25%	35%	51%	52%	54%
I am not familiar with the terms or task	9%	<1%	4%	6%	7%	7%	17%	22%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Edit a website or webpage

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	17%	26%	37%	29%	11%	9%	4%	2%
I can do this but not well	22%	32%	30%	20%	22%	23%	18%	9%
I don't know how to do this at all	48%	33%	28%	42%	59%	59%	57%	62%
I am not familiar with the terms or task	12%	8%	5%	9%	8%	10%	21%	27%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Design/Build a website

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	12%	16%	27%	22%	5%	5%	1%	<1%
I can do this but not well	17%	40%	28%	20%	17%	12%	6%	4%
I don't know how to do this at all	56%	30%	37%	49%	66%	71%	71%	59%
I am not familiar with the terms or task	15%	14%	8%	10%	11%	12%	21%	36%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use online content confidently, knowing what licenses or permissions may be required

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	19%	21%	33%	35%	15%	11%	5%	4%
I can do this but not well	23%	37%	30%	23%	21%	24%	19%	6%
I don't know how to do this at all	45%	36%	27%	34%	53%	55%	55%	55%
I am not familiar with the terms or task	14%	6%	10%	8%	11%	11%	21%	36%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Share video content I created online

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	37%	65%	67%	53%	31%	21%	12%	6%
I can do this but not well	24%	23%	22%	22%	33%	29%	18%	15%
I don't know how to do this at all	31%	10%	6%	20%	34%	44%	52%	48%
I am not familiar with the terms or task	9%	2%	4%	5%	2%	6%	19%	31%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Take steps to protect my devices (e.g., using anti-virus software, strong passwords)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	47%	46%	68%	58%	42%	38%	36%	25%
I can do this but not well	34%	40%	25%	22%	46%	39%	39%	34%
I don't know how to do this at all	15%	9%	8%	15%	11%	20%	16%	24%
I am not familiar with the terms or task	5%	5%	<1%	5%	1%	3%	8%	17%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Create strong passwords to protect my online information

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	68%	78%	80%	77%	70%	67%	52%	44%
I can do this but not well	24%	22%	18%	20%	29%	22%	35%	27%
I don't know how to do this at all	4%	<1%	<1%	2%	1%	10%	6%	12%
I am not familiar with the terms or task	4%	<1%	2%	1%	<1%	1%	7%	17%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Look out for and try to avoid phishing attempts

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	53%	59%	82%	64%	51%	39%	39%	29%
I can do this but not well	25%	15%	16%	18%	37%	32%	26%	30%
I don't know how to do this at all	13%	12%	2%	12%	7%	24%	18%	19%
I am not familiar with the terms or task	9%	14%	<1%	6%	5%	4%	17%	23%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Find support and assistance when a technical problem occurs or when using a new device, program or application

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	47%	51%	74%	60%	40%	39%	29%	30%
I can do this but not well	36%	41%	24%	27%	48%	38%	47%	33%
I don't know how to do this at all	12%	8%	1%	10%	12%	22%	14%	17%
I am not familiar with the terms or task	4%	<1%	1%	2%	<1%	1%	10%	20%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Know how to solve some routine hardware/software problems
(e.g., close program, re-start computer, re-install/update program, check internet connection)

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	56%	56%	86%	70%	57%	47%	36%	29%
I can do this but not well	25%	30%	11%	11%	33%	27%	38%	35%
I don't know how to do this at all	14%	9%	3%	14%	9%	23%	17%	20%
I am not familiar with the terms or task	5%	5%	<1%	5%	1%	3%	9%	16%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Use digital tools or online information to help me solve a technological or non-technological problem

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I can do this well/easily	44%	50%	79%	61%	42%	34%	19%	13%
I can do this but not well	31%	33%	17%	26%	43%	34%	46%	18%
I don't know how to do this at all	18%	16%	3%	10%	13%	28%	25%	41%
I am not familiar with the terms or task	6%	1%	1%	3%	2%	4%	10%	28%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Does your household have enough computer devices available to meet the needs of those living in your home?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Yes	88%	88%	90%	83%	86%	85%	95%	91%
No	12%	12%	10%	17%	14%	15%	5%	9%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Have any of your devices failed to function properly at any time during the past 6 months?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Yes	47%	52%	37%	57%	59%	47%	36%	44%
No	53%	48%	63%	43%	41%	53%	64%	56%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Which type of device failed most recently? - Selected Choice

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Smartphone/Cell phone	28%	14%	29%	32%	34%	22%	19%	40%
Desktop computer	21%	35%	11%	18%	19%	23%	20%	30%
Laptop computer	29%	45%	33%	28%	32%	30%	18%	14%
Tablet (or similar device)	15%	1%	13%	18%	9%	21%	25%	8%
Another type of Internet-connected device (please specify)	8%	4%	14%	4%	6%	5%	19%	8%
Total	100%	100%	100%	100%	100%	100%	100%	100%

How did you deal with the problem(s) you encountered when that device failed? Select all that apply.

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
I was able to fix it by restarting the device	34%	45%	39%	38%	31%	32%	25%	34%
I was able to fix it using my knowledge and experience with hardware/software	20%	46%	30%	24%	14%	20%	8%	3%
I contacted user support for help	19%	31%	9%	18%	16%	22%	20%	19%
I fixed the problem with help from friends or family	17%	16%	8%	18%	13%	12%	28%	24%
I found help online	17%	31%	19%	21%	13%	17%	12%	6%
I got help at a computer store	8%	6%	1%	6%	9%	2%	17%	15%
I got help at a community institution, such as a school, library, or church	1%	7%	<1%	1%	<1%	<1%	<1%	4%
I was unable to fix the device and have not replaced it	13%	20%	16%	18%	10%	15%	7%	3%
I was unable to fix the device and have replaced the device	11%	3%	9%	22%	4%	12%	15%	2%
Something else	5%	<1%	3%	3%	14%	4%	4%	5%

How many adults, age 18 and over, currently live in your household, including yourself?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
1 Adult	20%	17%	18%	14%	9%	19%	25%	44%
2 Adults	59%	61%	62%	70%	52%	52%	67%	45%
3 Adults	13%	10%	16%	12%	23%	18%	6%	5%
4 or More Adults	7%	12%	4%	4%	16%	11%	2%	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children less than 7 years of age

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
0 Children	80%	93%	52%	54%	87%	96%	97%	100%
1 Child	9%	6%	19%	24%	1%	1%	2%	<1%
2 Children	7%	2%	18%	11%	6%	3%	1%	<1%
3 Children	4%	<1%	10%	10%	6%	<1%	<1%	<1%
4 or More Children	<1%	<1%	1%	1%	<1%	<1%	<1%	<1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 7-12 years of age

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
0 Children	82%	92%	73%	51%	77%	94%	98%	100%
1 Child	11%	8%	20%	25%	17%	2%	1%	<1%
2 Children	6%	<1%	7%	21%	5%	3%	1%	<1%
3 Children	1%	<1%	<1%	3%	1%	<1%	<1%	<1%
4 or More Children	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 13-17 years of age

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
0 Children	81%	77%	94%	55%	59%	86%	98%	100%
1 Child	13%	14%	6%	28%	26%	14%	2%	<1%
2 Children	4%	9%	<1%	10%	13%	<1%	<1%	<1%
3 Children	1%	<1%	<1%	6%	2%	<1%	<1%	<1%
4 or More Children	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Are you of Hispanic, Latino/a, or Spanish origin?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Yes	4%	12%	9%	5%	1%	2%	<1%	1%
No	96%	88%	91%	95%	99%	98%	100%	99%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Which one or more of the following would you say is your race? Select all that apply.

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
White	93%	88%	88%	91%	95%	92%	97%	99%
Non-White	7%	12%	12%	9%	5%	8%	3%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Which of the following best describes you?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75+
Male	47%	48%	42%	50%	48%	43%	51%	50%
Female	53%	52%	58%	50%	52%	57%	49%	50%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Which of the following best describes you?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Married	57%	12%	48%	66%	65%	67%	68%	51%
Not Married	19%	<1%	7%	9%	27%	23%	25%	49%
Never Married	23%	88%	45%	25%	8%	10%	7%	<1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

What is your annual gross household income from all sources before taxes?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Less than $15,000	5%	16%	7%	3%	1%	7%	1%	2%
$15,000 to less than $25,000	5%	5%	2%	4%	7%	6%	7%	8%
$25,000 to less than $35,000	5%	7%	6%	5%	2%	3%	7%	7%
$35,000 to less than $50,000	12%	29%	14%	11%	2%	8%	11%	15%
$50,000 to less than $75,000	15%	16%	16%	15%	7%	10%	26%	15%
$75,000 to less than $100,000	15%	4%	15%	13%	14%	21%	14%	19%
$100,000 to less than $150,000	20%	19%	17%	15%	35%	20%	17%	19%
$150,000 or more	23%	2%	24%	33%	33%	25%	17%	15%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Which of the following best describes where you live? Do you live…

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Farm or Rural	19%	11%	12%	22%	29%	19%	25%	12%
Small Town	20%	4%	23%	21%	17%	18%	19%	31%
Larger Town	20%	13%	19%	19%	17%	23%	25%	22%
Small City	9%	28%	9%	7%	5%	8%	6%	7%
Medium City	25%	42%	27%	23%	21%	24%	21%	24%
Large City	7%	2%	10%	7%	12%	7%	4%	4%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Are you currently…?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Employed for wages	57%	52%	87%	80%	82%	55%	21%	2%
Self-employed	8%	1%	4%	11%	7%	13%	11%	5%
Out of work for more than 1 year	2%	11%	<1%	<1%	4%	<1%	<1%	<1%
Out of work less than 1 year	1%	<1%	<1%	2%	1%	2%	<1%	<1%
A homemaker	2%	1%	6%	2%	1%	1%	1%	1%
A student	3%	35%	1%	1%	<1%	<1%	<1%	<1%
Retired	23%	<1%	<1%	<1%	<1%	16%	65%	90%
Unable to work	4%	<1%	1%	4%	4%	14%	1%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%

What is the highest level of education you have completed?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
High School or Less	36%	34%	25%	32%	24%	39%	46%	55%
Some College or Vocational Training	19%	24%	20%	16%	14%	22%	19%	21%
Associate Degree	10%	10%	15%	10%	8%	10%	13%	3%
Bachelor Degree	25%	31%	30%	26%	40%	23%	15%	11%
Graduate or Professional Degree	10%	<1%	10%	17%	14%	6%	8%	10%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Have you ever served on active duty in the U.S. Armed Forces, military reserves, or National Guard?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Yes	7%	<1%	2%	3%	4%	7%	11%	30%
No	93%	100%	98%	97%	96%	93%	89%	70%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Do any of the following apply to you? Select all that apply.

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Blind or have serious difficulty seeing even if wearing glasses	1%	<1%	<1%	<1%	<1%	3%	<1%	6%
Deaf or have serious difficulty hearing even if using a hearing aid	3%	3%	<1%	<1%	5%	3%	2%	10%
Serious difficulty walking or climbing steps	6%	<1%	2%	2%	6%	8%	9%	20%
Difficulty remembering, concentrating, or making decisions	7%	16%	5%	10%	3%	7%	2%	9%
Difficulty with self-care such as washing all over or dressing	2%	2%	2%	2%	<1%	3%	1%	2%
Difficulty doing errands alone such as visiting a doctor's office or doing grocery shopping	3%	8%	3%	2%	1%	2%	1%	6%
Difficulty communicating, for example understanding or being understood	3%	12%	1%	2%	<1%	7%	1%	3%
No, I do not have difficulty in any of these areas	81%	69%	89%	88%	81%	76%	87%	64%

Do you use any special equipment or software to help you use a computer or electronic device because of any disability?

	State	18-24	25-34	35-44	45-54	55-64	65-74	75 or older
Yes, I do	2%	9%	3%	1%	<1%	2%	<1%	4%
No, I do not	98%	91%	97%	99%	100%	98%	100%	96%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Appendix E – Income Comparison Tables

What types of computing and information device(s) do you currently have in your home?

Desktop Computer	State	Higher Income	Lower Income
Have	50%	51%	41%
Do not have	50%	49%	59%
Total	100%	100%	100%

Laptop Computer	State	Higher Income	Lower Income
Have	78%	78%	80%
Do not have	22%	22%	20%
Total	100%	100%	100%

Smartphone with an Internet Connection	State	Higher Income	Lower Income
Have	94%	94%	93%
Do not have	6%	6%	7%
Total	100%	100%	100%

Tablet (e.g., Ipad/Chromebook	State	Higher Income	Lower Income
Have	68%	68%	67%
Do not have	32%	32%	33%
Total	100%	100%	100%

Other Device	State	Higher Income	Lower Income
Have	19%	21%	12%
Do not have	81%	79%	88%
Total	100%	100%	100%

Do you routinely access the internet for employment or work you do outside your home?

	State	Higher Income	Lower Income
Yes	58%	60%	44%
No	41%	39%	54%
Don’t know/Not sure	1%	1%	2%
Total	100%	100%	100%

Which of the following technologies do you or any member of your household use to access internet service in your home? Select all that apply.

	State	Higher Income	Lower Income
"Dial-up" internet service at home	3%	3%	1%
Higher-speed broadband internet service at home (e.g., cable, fiber optic, DSL, satellite)	71%	72%	60%
Fixed Wireless internet service (outdoor antenna w/ indoor Wi-Fi router)	20%	18%	31%
Use your smartphone to access the internet	65%	65%	63%
Use your smartphone as a "hotspot" for internet access for other devices	23%	23%	21%
Use another means of internet access in my home	4%	4%	1%
I/We have internet but I do not know or am not sure what type of home internet service I have	3%	3%	4%
I do not have any internet at my residence	5%	4%	8%

Do you have wireless (Wi-Fi) internet at home?

	State	Higher Income	Lower Income
Yes, I have Wi-Fi coverage throughout the house/residence	85%	86%	78%
Yes, I have Wi-Fi in some parts of the house but not all	6%	5%	8%
No, I do not have Wi-Fi	8%	7%	13%
Don't know/Not sure	2%	2%	1%
Total	100%	100%	100%

Excluding the costs of other services that might be bundled, approximately how much do you pay on a monthly basis for internet service?

	State	Higher Income	Lower Income
Less than $40	5%	5%	4%
$41-$60	22%	22%	21%
$61-$80	28%	27%	33%
$81-$100	21%	22%	14%
$101-$120	10%	10%	9%
More than $120	5%	5%	2%
I have internet but do not pay for it (e.g., is included in rent)	3%	2%	9%
Don't know/Not Sure	7%	7%	7%
Total	100%	100%	100%

How difficult, if at all, is it for you to fit your monthly internet bill into your household's budget?

	State	Higher Income	Lower Income
Not at all difficult	40%	40%	36%
Not too difficult	34%	34%	30%
Somewhat difficult	20%	19%	28%
Very difficult	5%	5%	4%
Don't know	2%	2%	2%
Total	100%	100%	100%

Overall, how satisfied or dissatisfied are you with the quality of your home internet connection?

	State	Higher Income	Lower Income
Very dissatisfied	11%	11%	11%
Somewhat dissatisfied	19%	18%	21%
Neither satisfied nor dissatisfied	9%	9%	12%
Somewhat satisfied	31%	32%	25%
Very satisfied	30%	30%	31%
Total	100%	100%	100%

What, if any, aspects of your home internet connection could be improved? If none, please write "none."

	State	Higher Income	Lower Income
None	30%	31%	21%
Speed	32%	30%	50%
Reliability	28%	28%	32%
Cost	9%	8%	9%
Coverage	7%	7%	3%
Provider Options	3%	3%	1%
Not sure	<1%	<1%	<1%
Other	6%	7%	1%

Overall, how confident do you feel using computers, smartphones, or other electronic devices to do things you need to do online?

	State	Higher Income	Lower Income
Not at all confident	6%	5%	9%
Only a little confident	7%	8%	5%
Somewhat confident	29%	27%	41%
Very confident	58%	61%	46%
Total	100%	100%	100%

The next questions are about how you deal with information and communications technology. How well, if at all, do each of the statements describe you? When I get a new electronic device, I usually need someone else to set it up or show me how to use it

	State	Higher Income	Lower Income
Not at all well	43%	44%	37%
Not too well	16%	16%	16%
Somewhat well	24%	23%	35%
Very well	17%	18%	12%
Total	100%	100%	100%

I am more productive because of all of my electronic information devices

	State	Higher Income	Lower Income
Not at all well	10%	9%	17%
Not too well	13%	12%	18%
Somewhat well	42%	43%	36%
Very well	35%	36%	29%
Total	100%	100%	100%

I find it difficult to know whether the information I find online is trustworthy

	State	Higher Income	Lower Income
Not at all well	24%	24%	22%
Not too well	26%	27%	19%
Somewhat well	37%	36%	48%
Very well	13%	13%	10%
Total	100%	100%	100%

Between phone calls, texts, emails, social media, or other messages, I deal with too much information in my daily life

	State	Higher Income	Lower Income
Not at all well	18%	19%	12%
Not too well	23%	23%	24%
Somewhat well	44%	43%	51%
Very well	15%	15%	13%
Total	100%	100%	100%

I often feel frustrated when using technology

	State	Higher Income	Lower Income
Not at all well	32%	33%	26%
Not too well	32%	32%	31%
Somewhat well	25%	25%	28%
Very well	11%	10%	16%
Total	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Search online for... Job(s)

	State	Higher Income	Lower Income
I have done this	55%	54%	57%
I have not done this	45%	46%	43%
Total	100%	100%	100%

Information about public health issues

	State	Higher Income	Lower Income
I have done this	79%	79%	79%
I have not done this	21%	21%	21%
Total	100%	100%	100%

Reliable information about a health or medical condition

	State	Higher Income	Lower Income
I have done this	85%	85%	81%
I have not done this	15%	15%	19%
Total	100%	100%	100%

Information about personal health issues

	State	Higher Income	Lower Income
I have done this	85%	85%	82%
I have not done this	15%	15%	18%
Total	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	State	Higher Income	Lower Income
I have done this	75%	77%	65%
I have not done this	25%	23%	35%
Total	100%	100%	100%

Official government statistics or documents

	State	Higher Income	Lower Income
I have done this	57%	57%	52%
I have not done this	43%	43%	48%
Total	100%	100%	100%

Recreational, tourist, or vacation information

	State	Higher Income	Lower Income
I have done this	84%	85%	78%
I have not done this	16%	15%	22%
Total	100%	100%	100%

Please indicate how easy or difficult it was, or you think it would be, for you to do (even if you haven't done so) each of the following. Search online for… Job(s)

	State	Higher Income	Lower Income
Very easy	52%	54%	43%
Somewhat easy	31%	30%	38%
Somewhat difficult	11%	10%	14%
Very difficult	5%	5%	5%
Total	100%	100%	100%

Information about public health issues

	State	Higher Income	Lower Income
Very easy	48%	49%	40%
Somewhat easy	39%	37%	45%
Somewhat difficult	9%	10%	9%
Very difficult	4%	4%	7%
Total	100%	100%	100%

Reliable information about a health or medical condition

	State	Higher Income	Lower Income
Very easy	42%	43%	39%
Somewhat easy	39%	40%	36%
Somewhat difficult	13%	13%	15%
Very difficult	5%	4%	10%
Total	100%	100%	100%

Information about personal health issues

	State	Higher Income	Lower Income
Very easy	43%	44%	37%
Somewhat easy	41%	40%	47%
Somewhat difficult	12%	12%	10%
Very difficult	4%	4%	6%
Total	100%	100%	100%

Information about government services or resources (e.g., voter registration, DMV, building permits)

	State	Higher Income	Lower Income
Very easy	43%	43%	42%
Somewhat easy	37%	37%	36%
Somewhat difficult	14%	13%	16%
Very difficult	7%	7%	6%
Total	100%	100%	100%

Official government statistics or documents

	State	Higher Income	Lower Income
Very easy	33%	33%	29%
Somewhat easy	37%	36%	41%
Somewhat difficult	22%	21%	26%
Very difficult	9%	9%	5%
Total	100%	100%	100%

Recreational, tourist, or vacation information

	State	Higher Income	Lower Income
Very easy	60%	59%	63%
Somewhat easy	30%	31%	25%
Somewhat difficult	7%	7%	11%
Very difficult	4%	4%	2%
Total	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Used phone or computer to… Apply for job(s)

	State	Higher Income	Lower Income
I have done this	41%	40%	45%
I have not done this	59%	60%	55%
Total	100%	100%	100%

Complete a course or training to improve your job skills

	State	Higher Income	Lower Income
I have done this	52%	53%	46%
I have not done this	48%	47%	54%
Total	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	State	Higher Income	Lower Income
I have done this	28%	26%	34%
I have not done this	72%	74%	66%
Total	100%	100%	100%

Access/use online banking or financial services

	State	Higher Income	Lower Income
I have done this	85%	86%	80%
I have not done this	15%	14%	20%
Total	100%	100%	100%

Access or apply for government services

	State	Higher Income	Lower Income
I have done this	33%	33%	37%
I have not done this	67%	67%	63%
Total	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	State	Higher Income	Lower Income
I have done this	7%	7%	8%
I have not done this	93%	93%	92%
Total	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	State	Higher Income	Lower Income
I have done this	70%	71%	61%
I have not done this	30%	29%	39%
Total	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	State	Higher Income	Lower Income
I have done this	73%	75%	58%
I have not done this	27%	25%	42%
Total	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	State	Higher Income	Lower Income
I have done this	45%	47%	34%
I have not done this	55%	53%	66%
Total	100%	100%	100%

Use email

	State	Higher Income	Lower Income
I have done this	95%	96%	89%
I have not done this	5%	4%	11%
Total	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	State	Higher Income	Lower Income
I have done this	86%	87%	84%
I have not done this	14%	13%	16%
Total	100%	100%	100%

Shop online

	State	Higher Income	Lower Income
I have done this	90%	91%	86%
I have not done this	10%	9%	14%
Total	100%	100%	100%

Please indicate whether or not you have used a phone or computer to do any of the following in the past two years. Used phone or computer to… Apply for job(s)

	State	Higher Income	Lower Income
Very easy	51%	53%	42%
Somewhat easy	33%	32%	37%
Somewhat difficult	10%	9%	15%
Very difficult	6%	6%	5%
Total	100%	100%	100%

Complete a course or training to improve your job skills

	State	Higher Income	Lower Income
Very easy	53%	54%	49%
Somewhat easy	31%	31%	35%
Somewhat difficult	10%	10%	8%
Very difficult	6%	5%	8%
Total	100%	100%	100%

Apply for or manage government benefits (e.g., SNAP, TANF – "cash assistance", Social Security)

	State	Higher Income	Lower Income
Very easy	33%	33%	28%
Somewhat easy	37%	36%	41%
Somewhat difficult	19%	18%	21%
Very difficult	12%	12%	10%
Total	100%	100%	100%

Access/use online banking or financial services

	State	Higher Income	Lower Income
Very easy	67%	67%	64%
Somewhat easy	23%	23%	22%
Somewhat difficult	6%	5%	9%
Very difficult	4%	4%	5%
Total	100%	100%	100%

Access or apply for government services

	State	Higher Income	Lower Income
Very easy	36%	37%	31%
Somewhat easy	33%	33%	35%
Somewhat difficult	20%	19%	22%
Very difficult	11%	10%	13%
Total	100%	100%	100%

Enroll in Internet subsidy programs (Affordable Connectivity Program)

	State	Higher Income	Lower Income
Very easy	29%	31%	19%
Somewhat easy	36%	34%	44%
Somewhat difficult	23%	23%	24%
Very difficult	12%	12%	12%
Total	100%	100%	100%

Use a video application, such as Zoom or Teams, for work, school, or telehealth

	State	Higher Income	Lower Income
Very easy	53%	54%	48%
Somewhat easy	29%	29%	32%
Somewhat difficult	11%	11%	10%
Very difficult	7%	6%	10%
Total	100%	100%	100%

Create a document (e.g., Google Doc or Microsoft Word file)

	State	Higher Income	Lower Income
Very easy	62%	63%	54%
Somewhat easy	20%	19%	24%
Somewhat difficult	9%	9%	9%
Very difficult	8%	8%	13%
Total	100%	100%	100%

Find tools or services to protect the privacy of your personal data

	State	Higher Income	Lower Income
Very easy	38%	39%	32%
Somewhat easy	32%	31%	40%
Somewhat difficult	21%	22%	15%
Very difficult	9%	9%	12%
Total	100%	100%	100%

Use email

	State	Higher Income	Lower Income
Very easy	81%	82%	76%
Somewhat easy	15%	14%	18%
Somewhat difficult	3%	2%	3%
Very difficult	2%	2%	3%
Total	100%	100%	100%

Use social media such as Facebook, Instagram, Twitter, TikTok, Snapchat

	State	Higher Income	Lower Income
Very easy	79%	80%	73%
Somewhat easy	13%	13%	15%
Somewhat difficult	4%	4%	4%
Very difficult	4%	3%	7%
Total	100%	100%	100%

Shop online

	State	Higher Income	Lower Income
Very easy	77%	78%	71%
Somewhat easy	16%	15%	20%
Somewhat difficult	3%	3%	3%
Very difficult	3%	3%	6%
Total	100%	100%	100%

For each of the following, please indicate your estimated level of skill in completing the task: Look for information online using a search engine (e.g., Google)

	State	Higher Income	Lower Income
I can do this well/easily	86%	87%	81%
I can do this but not well	8%	8%	11%
I don't know how to do this at all	3%	2%	7%
I am not familiar with the terms or task	2%	3%	2%
Total	100%	100%	100%

Save files or content from the internet (e.g., documents, pictures, music, videos, web pages)

	State	Higher Income	Lower Income
I can do this well/easily	70%	71%	63%
I can do this but not well	19%	19%	21%
I don't know how to do this at all	8%	7%	13%
I am not familiar with the terms or task	3%	3%	3%
Total	100%	100%	100%

Open files downloaded from the internet

	State	Higher Income	Lower Income
I can do this well/easily	73%	75%	62%
I can do this but not well	17%	16%	21%
I don't know how to do this at all	7%	6%	12%
I am not familiar with the terms or task	3%	3%	5%
Total	100%	100%	100%

Use shortcut keys

	State	Higher Income	Lower Income
I can do this well/easily	41%	41%	37%
I can do this but not well	32%	33%	29%
I don't know how to do this at all	17%	16%	26%
I am not familiar with the terms or task	10%	10%	8%
Total	100%	100%	100%

Open a new tab in my browser

	State	Higher Income	Lower Income
I can do this well/easily	77%	78%	74%
I can do this but not well	10%	11%	4%
I don't know how to do this at all	7%	5%	15%
I am not familiar with the terms or task	6%	6%	7%
Total	100%	100%	100%

Bookmark a website

	State	Higher Income	Lower Income
I can do this well/easily	70%	71%	62%
I can do this but not well	14%	14%	15%
I don't know how to do this at all	10%	9%	16%
I am not familiar with the terms or task	6%	6%	7%
Total	100%	100%	100%

Make changes or edits to a PowerPoint, Excel spreadsheet, or Word file someone else created

	State	Higher Income	Lower Income
I can do this well/easily	55%	55%	49%
I can do this but not well	18%	19%	11%
I don't know how to do this at all	17%	15%	30%
I am not familiar with the terms or task	10%	10%	10%
Total	100%	100%	100%

Send an email

	State	Higher Income	Lower Income
I can do this well/easily	88%	89%	86%
I can do this but not well	7%	7%	5%
I don't know how to do this at all	3%	2%	7%
I am not familiar with the terms or task	1%	1%	2%
Total	100%	100%	100%

Send a text message

	State	Higher Income	Lower Income
I can do this well/easily	92%	93%	87%
I can do this but not well	4%	3%	6%
I don't know how to do this at all	3%	2%	6%
I am not familiar with the terms or task	1%	1%	1%
Total	100%	100%	100%

Share files and content using tools like attachments

	State	Higher Income	Lower Income
I can do this well/easily	69%	70%	62%
I can do this but not well	17%	18%	17%
I don't know how to do this at all	8%	6%	16%
I am not familiar with the terms or task	6%	6%	5%
Total	100%	100%	100%

Produce digital content like text, tables, images, or audio/video files

	State	Higher Income	Lower Income
I can do this well/easily	43%	45%	31%
I can do this but not well	30%	30%	30%
I don't know how to do this at all	20%	18%	33%
I am not familiar with the terms or task	7%	7%	6%
Total	100%	100%	100%

Edit content produced by others like editing photos or videos

	State	Higher Income	Lower Income
I can do this well/easily	29%	31%	21%
I can do this but not well	36%	36%	32%
I don't know how to do this at all	28%	26%	37%
I am not familiar with the terms or task	7%	7%	10%
Total	100%	100%	100%

Apply and modify functions and settings of software and applications that I use (e.g., change default settings, font settings, page layout)

	State	Higher Income	Lower Income
I can do this well/easily	44%	45%	35%
I can do this but not well	30%	31%	24%
I don't know how to do this at all	19%	17%	28%
I am not familiar with the terms or task	8%	7%	13%
Total	100%	100%	100%

Create new content from existing online images, music, or videos

	State	Higher Income	Lower Income
I can do this well/easily	27%	28%	21%
I can do this but not well	28%	28%	29%
I don't know how to do this at all	36%	35%	40%
I am not familiar with the terms or task	9%	9%	10%
Total	100%	100%	100%

Edit a website or webpage

	State	Higher Income	Lower Income
I can do this well/easily	17%	18%	14%
I can do this but not well	22%	23%	15%
I don't know how to do this at all	48%	47%	55%
I am not familiar with the terms or task	12%	11%	16%
Total	100%	100%	100%

Design/Build a website

	State	Higher Income	Lower Income
I can do this well/easily	12%	12%	10%
I can do this but not well	17%	19%	11%
I don't know how to do this at all	56%	56%	58%
I am not familiar with the terms or task	15%	14%	21%
Total	100%	100%	100%

Use online content confidently, knowing what licenses or permissions may be required

	State	Higher Income	Lower Income
I can do this well/easily	19%	20%	12%
I can do this but not well	23%	24%	14%
I don't know how to do this at all	45%	43%	56%
I am not familiar with the terms or task	14%	13%	18%
Total	100%	100%	100%

Share video content I created online

	State	Higher Income	Lower Income
I can do this well/easily	37%	38%	30%
I can do this but not well	24%	24%	22%
I don't know how to do this at all	31%	29%	39%
I am not familiar with the terms or task	9%	9%	9%
Total	100%	100%	100%

Take steps to protect my devices (e.g., using anti-virus software, strong passwords)

	State	Higher Income	Lower Income
I can do this well/easily	47%	48%	36%
I can do this but not well	34%	35%	29%
I don't know how to do this at all	15%	12%	28%
I am not familiar with the terms or task	5%	4%	7%
Total	100%	100%	100%

Create strong passwords to protect my online information

	State	Higher Income	Lower Income
I can do this well/easily	68%	70%	56%
I can do this but not well	24%	24%	27%
I don't know how to do this at all	4%	3%	11%
I am not familiar with the terms or task	4%	3%	6%
Total	100%	100%	100%

Look out for and try to avoid phishing attempts

	State	Higher Income	Lower Income
I can do this well/easily	53%	55%	40%
I can do this but not well	25%	26%	21%
I don't know how to do this at all	13%	11%	28%
I am not familiar with the terms or task	9%	8%	11%
Total	100%	100%	100%

Find support and assistance when a technical problem occurs or when using a new device, program or application

	State	Higher Income	Lower Income
I can do this well/easily	47%	49%	40%
I can do this but not well	36%	37%	31%
I don't know how to do this at all	12%	10%	24%
I am not familiar with the terms or task	4%	4%	4%
Total	100%	100%	100%

Know how to solve some routine hardware/software problems (e.g., close program, re-start computer, re-install/update program, check internet connection)

	State	Higher Income	Lower Income
I can do this well/easily	56%	58%	49%
I can do this but not well	25%	26%	17%
I don't know how to do this at all	14%	12%	26%
I am not familiar with the terms or task	5%	4%	9%
Total	100%	100%	100%

Use digital tools or online information to help me solve a technological or non-technological problem

	State	Higher Income	Lower Income
I can do this well/easily	44%	47%	31%
I can do this but not well	31%	31%	35%
I don't know how to do this at all	18%	17%	27%
I am not familiar with the terms or task	6%	6%	7%
Total	100%	100%	100%

Does your household have enough computer devices available to meet the needs of those living in your home?

	State	Higher Income	Lower Income
Yes	88%	90%	77%
No	12%	10%	23%
Total	100%	100%	100%

Have any of your devices failed to function properly at any time during the past 6 months?

	State	Higher Income	Lower Income
Yes	47%	45%	56%
No	53%	55%	44%
Total	100%	100%	100%

Which type of device failed most recently? - Selected Choice

	State	Higher Income	Lower Income
Smartphone/Cell phone	28%	28%	25%
Desktop computer	21%	21%	19%
Laptop computer	29%	27%	35%
Tablet (or similar device)	15%	15%	11%
Another type of Internet-connected device (please specify)	8%	8%	10%
Total	100%	100%	100%

How did you deal with the problem(s) you encountered when that device failed? Select all that apply.

	State	Higher Income	Lower Income
I was able to fix it by restarting the device	34%	35%	32%
I was able to fix it using my knowledge and experience with hardware/software	20%	22%	11%
I contacted user support for help	19%	19%	16%
I fixed the problem with help from friends or family	17%	15%	22%
I found help online	17%	18%	10%
I got help at a computer store	8%	8%	6%
I got help at a community institution, such as a school, library, or church	1%	1%	<1%
I was unable to fix the device and have not replaced it	13%	11%	24%
I was unable to fix the device and have replaced the device	11%	12%	7%
Something else	5%	5%	4%

What is your age?

	State	Higher Income	Lower Income
18 to 24	8%	7%	12%
25 to 34	18%	18%	15%
35 to 44	17%	17%	18%
45 to 54	13%	13%	11%
55 to 64	18%	18%	18%
65 to 74	16%	16%	18%
75 or older	10%	11%	7%
Total	100%	100%	100%

How many adults, age 18 and over, currently live in your household, including yourself?

	State	Higher Income	Lower Income
1 Adult	20%	20%	22%
2 Adults	59%	61%	46%
3 Adults	13%	12%	22%
4 or More Adults	7%	7%	9%
Total	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children less than 7 years of age

	State	Higher Income	Lower Income
0 Children	80%	81%	72%
1 Child	9%	9%	11%
2 Children	7%	6%	11%
3 Children	4%	4%	5%
4 or More Children	<1%	<1%	1%
Total	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 7-12 years of age

	State	Higher Income	Lower Income
0 Children	82%	83%	80%
1 Child	11%	10%	17%
2 Children	6%	7%	2%
3 Children	1%	1%	1%
4 or More Children	<1%	<1%	<1%
Total	100%	100%	100%

How many children under 18 years of age live in your household at least half the time? - # of children 13-17 years of age

	State	Higher Income	Lower Income
0 Children	81%	82%	75%
1 Child	13%	12%	20%
2 Children	4%	4%	5%
3 Children	1%	1%	<1%
4 or More Children	<1%	<1%	<1%
Total	100%	100%	100%

Are you of Hispanic, Latino/a, or Spanish origin?

	State	Higher Income	Lower Income
Yes	4%	3%	9%
No	96%	97%	91%
Total	100%	100%	100%

Which one or more of the following would you say is your race? Select all that apply.

	State	Higher Income	Lower Income
White	93%	93%	89%
Non-White	7%	7%	11%
Total	100%	100%	100%

Which of the following best describes you?

	State	Higher Income	Lower Income
Male	47%	48%	43%
Female	53%	52%	57%
Total	100%	100%	100%

Which of the following best describes you?

	State	Higher Income	Lower Income
Married	57%	59%	47%
Not Married	19%	18%	27%
Never Married	23%	23%	26%
Total	100%	100%	100%

What is your annual gross household income from all sources before taxes?

	State	Higher Income	Lower Income
Less than $15,000	5%	3%	18%
$15,000 to less than $25,000	5%	4%	14%
$25,000 to less than $35,000	5%	5%	9%
$35,000 to less than $50,000	12%	11%	18%
$50,000 to less than $75,000	15%	16%	8%
$75,000 to less than $100,000	15%	16%	11%
$100,000 to less than $150,000	20%	21%	14%
$150,000 or more	23%	26%	8%
Total	100%	100%	100%

Which of the following best describes where you live? Do you live…

	State	Higher Income	Lower Income
Farm or Rural	19%	20%	13%
Small Town	20%	19%	22%
Larger Town	20%	20%	22%
Small City	9%	8%	16%
Medium City	25%	25%	23%
Large City	7%	7%	5%
Total	100%	100%	100%

Are you currently…?

	State	Higher Income	Lower Income
Employed for wages	57%	59%	49%
Self-employed	8%	9%	6%
Out of work for more than 1 year	2%	2%	<1%
Out of work less than 1 year	1%	<1%	3%
A homemaker	2%	2%	1%
A student	3%	2%	8%
Retired	23%	23%	22%
Unable to work	4%	3%	11%
Total	100%	100%	100%

What is the highest level of education you have completed?

	State	Higher Income	Lower Income
High School or Less	36%	35%	43%
Some College or Vocational Training	19%	18%	28%
Associate Degree	10%	11%	10%
Bachelor Degree	25%	27%	14%
Graduate or Professional Degree	10%	10%	5%
Total	100%	100%	100%

Have you ever served on active duty in the U.S. Armed Forces, military reserves, or National Guard?

	State	Higher Income	Lower Income
Yes	7%	7%	11%
No	93%	93%	89%
Total	100%	100%	100%

Do any of the following apply to you? Select all that apply.

	State	Higher Income	Lower Income
Blind or have serious difficulty seeing even if wearing glasses	1%	1%	1%
Deaf or have serious difficulty hearing even if using a hearing aid	3%	3%	1%
Serious difficulty walking or climbing steps	6%	6%	10%
Difficulty remembering, concentrating, or making decisions	7%	6%	13%
Difficulty with self-care such as washing all over or dressing	2%	1%	5%
Difficulty doing errands alone such as visiting a doctor's office or doing grocery shopping	3%	2%	8%
Difficulty communicating, for example understanding or being understood	3%	3%	6%
No, I do not have difficulty in any of these areas	81%	82%	77%

Do you use any special equipment or software to help you use a computer or electronic device because of any disability?

	State	Higher Income	Lower Income
Yes, I do	2%	2%	3%
No, I do not	98%	98%	97%
Total	100%	100%	100%