THE SUSTAINABLE FUNDING CASE FOR DIGITAL SKILLS AND ACCESS IN CALIFORNIA

JANUARY 2025

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGMENTS

Riverside County would like to acknowledge Tom Mullen of the Riverside County Information Technology (RCIT) Department and Tina Grande of the county's Executive Office for serving as the leadership of the Broadband Team. Their coordination of the county's broadband strategic planning efforts has led to the development of this report and has enabled the county to pursue and execute on the broadband goals and strategies therein.

The county would also like to thank its stakeholders, community organizations, and partners, including the California Emerging Technology Fund and Saeshe, for contributing to the development of this report.

EXECUTIVE SUMMARY

THE DIGITAL DIVIDE AND WHY IT MATTERS

The 'once in a generation' $65 billion Bipartisan Infrastructure Law investment to increase broadband internet access is comparable to the Rural Electrification Act of the 1930s. The scale of investment and potential impact on communities is similar, but unlike electricity, there is a learning curve for households to begin benefitting from broadband. After homes were wired, people could turn on lights by flipping a switch. For Americans to truly benefit from access to broadband, they must have a basic understanding of how to use digital devices, paired with knowledge about information technology — often referred to as 'digital literacy.' Without foundational knowledge and access to devices, "the digital divide" emerges.

An estimated 91% of California jobs require "definitely digital or likely digital" skills across all industries and different sized businesses.

The digital divide reinforces inequalities and prevents individuals from accessing information, education, healthcare, work opportunities, social services, and more. An estimated 91% of California jobs require "definitely digital or likely digital" skills across all industries and different sized businesses.[1] Overall, people who qualify for jobs requiring even one digital skill can earn more on average than those working jobs requiring no digital skills.[2]

Existing *Broadband for All* investments and efforts have created a solid foundation for digital skills and access efforts in California.[3] However, as identified in the State's Digital Equity Plan, there is still work to do to close the digital divide across California.[4] Many Californians struggle to fully utilize the internet, preventing them from participating in the digital society and economy. According to an analysis conducted by the Organization for Economic Cooperation and Development, 16% of Americans are not digitally literate.[5] In California, this equates to over six million residents.

1 National Skills Coalition (2024), Closing California's Digital Skill Divide. Accessed at: CA-Digital-Divide-Fact-Sheet-Final.pdf

2 National Skills Coalition (2023), Closing the Digital Skill Divide. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org)

3 *Broadband for All* is California's overarching program to close the digital divide (https://broadbandforall.cdt.ca.gov/about/).

4 *Broadband for All* investments and efforts include the CPUC's California Advanced Service Fund programs, Middle and Last Mile programs, and the statewide mobilization to raise awareness and enroll California residents in the Affordable Connectivity Program (ACP), which led to 2.7 million eligible households enrolling in the program over the last two years.

5 US Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (2012), Program for the International Assessment of Adult Competencies. Accessed at: A Description of US Adults Who Are Not Digitally Literate (ed.gov). Please see Appendix C for more information.

THE COSTS AND BENEFITS OF INVESTING IN DIGITAL SKILLS AND ACCESS

To understand the potential impact of investing in digital skills and access programming, the Riverside County Broadband Office (RivCo Connect) conducted a benefit-cost analysis for a 10-year digital skills and access program. An estimated 5.9 million Californians could benefit from and take advantage of digital skills training.[6] Considering digital navigator staff wages, hours spent teaching one-on-one and classroom training, program overhead, device costs, and 2.3% year-over-year inflation over 10 years, it would cost California an average of ~$83 million per annum to fund a digital skills and access program.[7]

Despite the significant investment required, the benefits of the program to the State of California outweigh the cost by 7:1. That is, for every dollar invested by the State, there could be nearly $7 in benefits. As the world becomes increasingly digital, addressing digital exclusion can closely tie into efforts to improve societal outcomes. Combined with the significant return on investment for State government, digital skills and access programming is a cost-effective investment.

In addition to State benefits, there are also workforce and health care related benefits for the Californians participating in a digital skills and access program. For every dollar that a participant invests in digital upskilling, they could gain over $10 in telehealth and workforce-related benefits.[8]

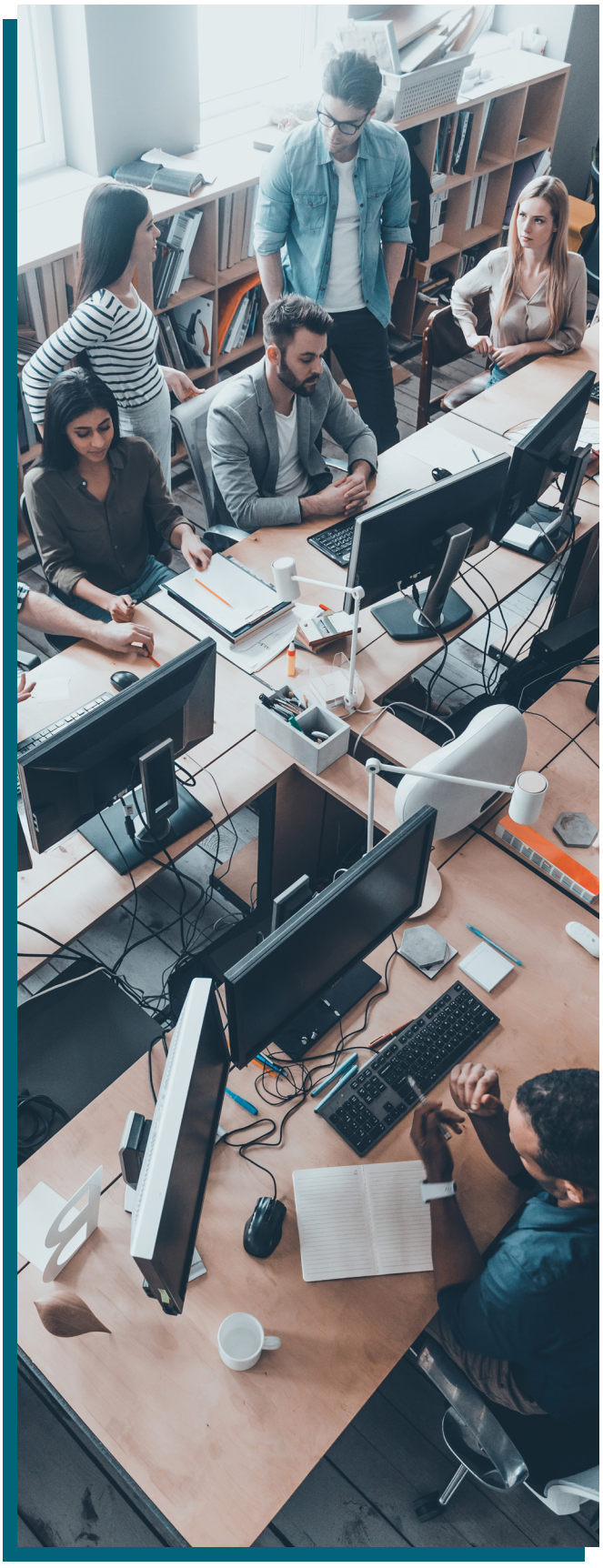
Beyond the business case for investing, just as with other social benefit programs, digital skills and access promotes the well-being of individuals and communities. By reducing unequal access to information and opportunities, digital skills and access can be viewed as a social good.[9]

6 Good Things Foundation (2022), The Economic Impact of Digital Inclusion in the UK. Accessed at: https://www.goodthingsfoundation.org/policy-and-research/research-and-evidence/research-2024/digital-inclusion-uk-economic-impact. Note: The 5.9 million figure assumes that 5% of individuals with low digital skills would not participate in digital skills and access programming.

7 Statista (2024), Projected Inflation Rate in the United States. Accessed at: https://www.statista.com/statistics/244983/projected-inflation-rate-in-the-united-states/

8 Note: Participant cost is calculated as wages lost due to time spent learning digital skills.

9 A social good is broadly defined as a service or product that promotes human well-being on a large scale. (Source: Black's Law Dictionary, n.d; Barak, M. (2020). "The Practice and Science of Social Good: Emerging Paths to Positive Social Impact." Accessed at: The Practice and Science of Social Good: Emerging Paths to Positive Social Impact (usc.edu).



THE PATH FORWARD TO SUSTAINABLE FUNDING AND PROGRAM DESIGN

To close the digital divide, a sustainable funding source for digital skills and access is needed. Currently, the digital equity ecosystem in California faces an uncertain future, as several large grants are winding down without a clear successor program. To include Californians without digital skills or digital devices, the State could create a fee on select internet-capable devices. Modeled after California's Electronic Waste Recycling Fee, the Digital Skills Contribution Fee could generate at least $83 million in revenue annually, covering the expected cost for digital skills and access programming with a buffer. A Digital Skills Contribution Fee could be less administratively burdensome for program implementers than the alternative — combining multiple eligible social service funding streams ("braiding" funding) — which comes with many administrative challenges (e.g., maintaining multiple separate complex reporting requirements, learner segmentation, different grant reimbursement mechanisms and schedules). This could also continue the momentum that entities across California started with American Rescue Plan Act (ARPA), California Advanced Services Fund (CASF) Adoption, and other grant funds.

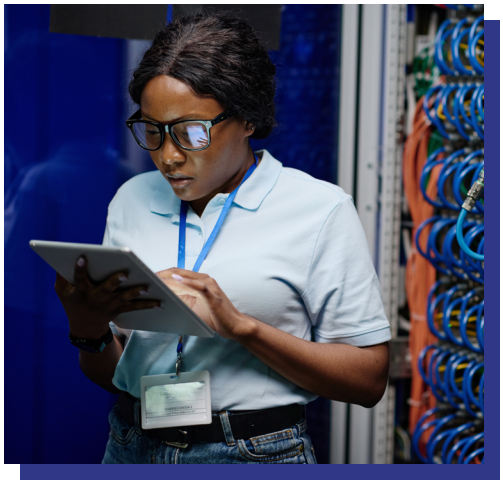
Funds generated through the Digital Skills Contribution Fee could be disbursed through a formula block grant to counties by the California Department of Technology. The grant could be noncompetitive and not require a match, providing all counties in California the opportunity to participate, regardless of county budget or administrative capacity to apply.

Giving participating counties flexibility in how the digital skills and access program is designed and implemented in their regions is important to program success. As California is a vast and remarkably diverse state, a digital skills and access program for Los Angeles County may not best address the digital skills and access needs of residents in Kern County or Sacramento County.

To bring a digital skills and access program to life, working with counties, cities, State departments, community-based organizations, community anchor institutions, private sector partners, and more across California is essential. The scale of the digital divide is too great for any single sector or entity to tackle.

THE IMPORTANCE OF DIGITAL SKILLS AND ACCESS FOR ALL CALIFORNIANS

> "One in three Americans are on track to be left behind in the 21st century economy. The reason: digital illiteracy. It is widely understood that broadband offers immense opportunities to connect people to economic opportunity, including upskilling opportunities that open pathways to in-demand careers and higher wages. But if people aren't connected – or don't have the know-how on using computers and technology – that economic opportunity disappears. Ninety percent of the jobs in the United States by 2030 will require digital skills, so the one-third that are under-skilled are at great risk of being left behind."
>
> – Third Way (2023), America's Digital Skills Divide



WHAT IS THE DIGITAL DIVIDE, AND HOW DOES IT RELATE TO DIGITAL SKILLS?

The term "digital divide" has evolved since it first emerged in the 1990s as technology continues to advance and shape society (**Figure 1**). The first level of the digital divide revolves around access to the internet and ownership of information communication technology capable devices — in other words, who has access and who does not. The second level of the digital divide advances beyond fundamental access to internet and devices and includes whether individuals have the skills and resources to benefit from information technology. The third level of the digital divide incorporates a more recent approach to defining the digital divide. Social, economic, and cultural outcomes are also an important aspect of accessing internet, like social connectivity and civic engagement.[10] The ability to acquire and benefit from digital skills relates to the second and third level of the digital divide, going beyond basic access to internet and devices.

Figure 1: Levels of the digital divide

LEVEL 1 — ACCESS TO THE INTERNET AND DEVICES

LEVEL 2 — ABILITY TO USE TECHNOLOGY

LEVEL 3 — SOCIOCULTURAL BENEFITS FROM ACCESSING AND USING INTERNET AND DIGITAL TECHNOLOGY

10 Ferreira et al. (2021), The three levels of the urban digital divide: Bridging issues of coverage usage and its outcomes in VGI platforms. Accessed at: https://doi.org/10.1016/j.geoforum.2021.05.002.

AS DEFINED BY THE NATIONAL DIGITAL INCLUSION ALLIANCE, AN INDIVIDUAL WITH DIGITAL SKILLS:

- Possesses the variety of skills required to find, understand, evaluate, create, and communicate digital information in a wide variety of formats.
- Can use diverse technologies appropriately and effectively to retrieve information, interpret results, and judge the quality of that information.
- Understands the relationship between technology, life-long learning, personal privacy, and stewardship of information.
- Uses these skills and the appropriate technology to communicate and collaborate with peers, colleagues, family, and on occasion, the public; and
- Uses these skills to actively participate in civic society and contribute to a vibrant, informed, and engaged community.

The digital divide also overlaps with other socioeconomic inequalities. As witnessed during the COVID-19 pandemic, the digital divide exacerbated existing inequalities related to access to education, healthcare, work opportunities, and more. While not a panacea for social and economic exclusion, increasing digital skills and access can empower individuals. An estimated 91% of California jobs may require some type of digital skills across industries, and people who qualify for jobs requiring even one digital skill can earn more on average than those working jobs requiring no digital skills.[11]

WHO MAY FACE DIGITAL EXCLUSION?

Existing *Broadband for All* investments and the California Advanced Services Fund Adoption Account have created a solid foundation for digital skills and access efforts in the State. However, as identified in California's Digital Equity Plan, there is still work to do to close the digital divide.[12] Many Californians struggle to fully utilize the internet, preventing them from participating in the digital society and economy. According to an analysis conducted by the Organization for Economic Cooperation and Development (OECD), 16% of Americans are not digitally literate. Adults were defined as "not digitally literate" using the Program for the International Assessment of Adult Competencies' requirements for basic computer competence: (1) prior computer use, (2) willingness to take the assessment on the computer, and (3) passing a basic computer test (by successfully completing four of six simple tasks, such as using a mouse and highlighting text on the screen).[13]

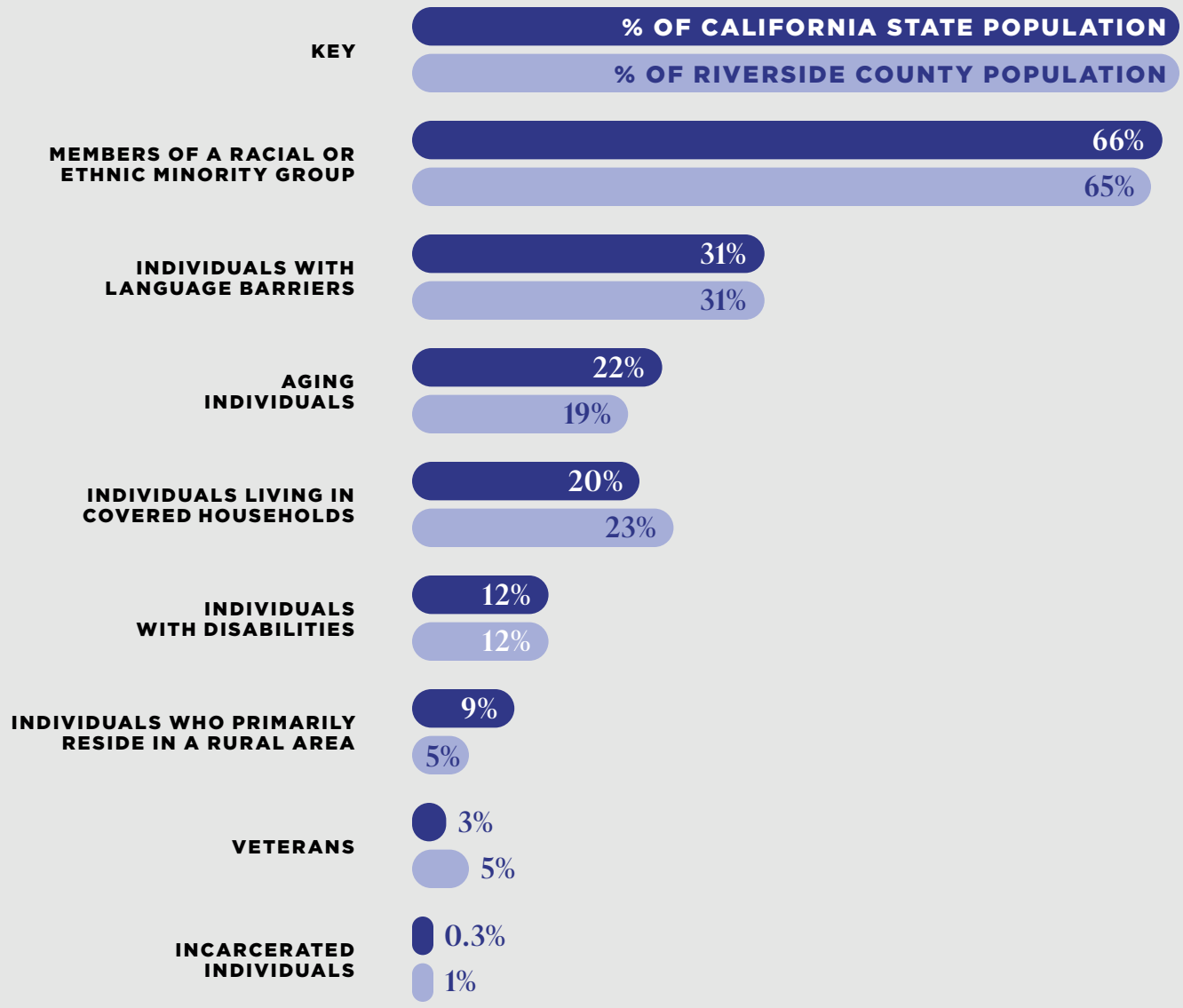
11 National Skills Coalition (2023), Closing the Digital Divide: The Payoff for Workers, Business, and the Economy. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org); and National Skills Coalition (2024), Closing California's Digital Skill Divide. Accessed at: CA-Digital-Divide-Fact-Sheet-Final.pdf

12 *Broadband for All* investments and efforts include the CPUC's California Advanced Service Fund programs, Middle and Last Mile programs, and the statewide mobilization to raise awareness and enroll California residents in the Affordable Connectivity Program (ACP), which led to 2.7 million eligible households enrolling in the program over the last two years.

13 US Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (2012), Program for the International Assessment of Adult Competencies. Accessed at: A Description of US Adults Who Are Not Digitally Literate (ed.gov)

Some Americans are more likely to face barriers to adoption, access, and affordability than other Californians — namely, individuals belonging to covered populations. Thirty-three and a half million California residents — 85% of the State's population — belong to one or more covered populations, as designated by the National Telecommunications and Information Administration (NTIA).[14] For example, in Riverside County, an estimated 86% of the total county population — equal to over two million residents — belong to a covered population. This closely mirrors the State's covered population percentages, as shown in **Figure 2**.[15]

Figure 2: Covered populations as a percentage of total population



14 According to the NTIA covered populations include those individuals that are living in covered households (with an income at or below 150% of the Federal Poverty Level), aging individuals (60+), incarcerated individuals, veterans, individuals with disabilities, individuals with language barriers (including individuals who are English learners and have low levels of literacy), members of a racial or ethnic minority group, and individuals who primarily reside in a rural area. Accessed at: https://broadbandforall.cdt.ca.gov/wp-content/uploads/sites/19/2023/12/Draft-SDEP_For-Public-Comment_12.11.23.pdf

15 US Census Bureau (2024). Accessed at: Digital Equity Act Population Viewer. Incarcerated individual figures are pulled from the April 3, 2024, Department of Corrections and Rehabilitation report.

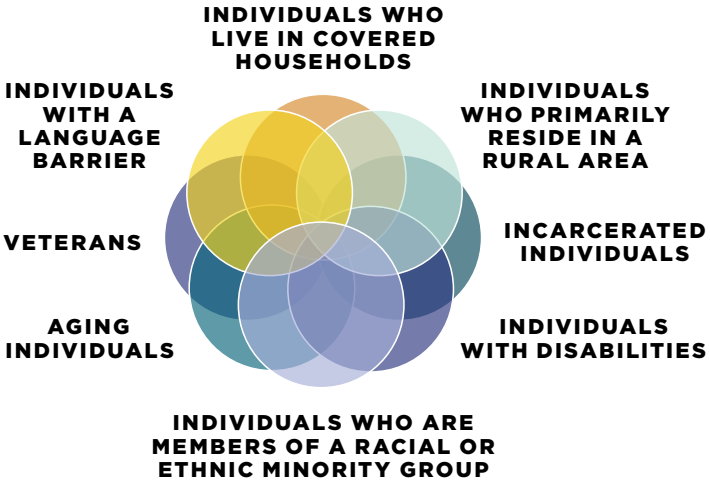


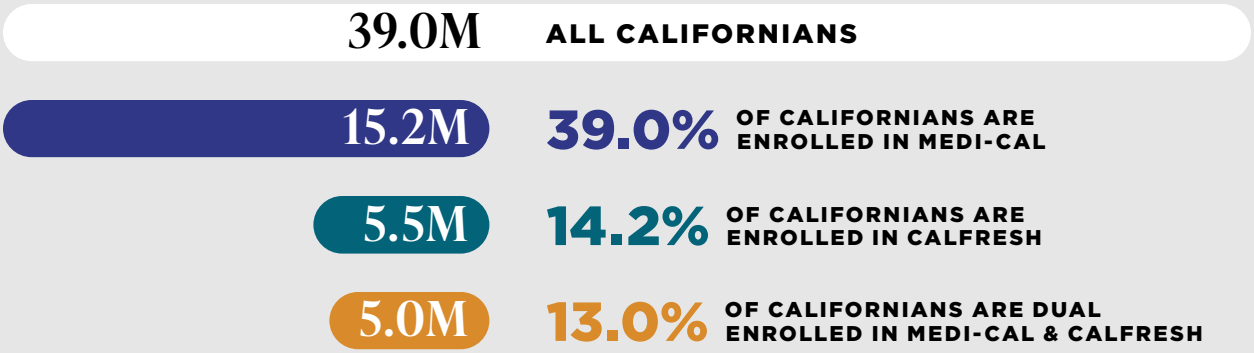
Figure 3: Intersectionality of NTIA covered populations

Previous studies have also indicated that structural socioeconomic inequalities related to education and income disparities, race/ethnicity, and language barriers correlate to lower levels of digital literacy.[16,17] Moreover, it is highly likely that there are overlapping barriers for individuals who intersect multiple covered populations. For example, California's Statewide Digital Equity Survey highlighted that 90% of respondents who self-identified as being part of racial or ethnic minority groups also self-identified as being individuals with limited English proficiency. The survey showed that the percentage of high-skills internet users was significantly lower among some covered populations, especially households with language barriers (40%), low-income households (42%) and households with individuals with disabilities (43%).[18]

Individuals and families who currently participate in programs like Medi-Cal, CalFresh (**Figure 4**)[19], and other social safety net programs may also benefit from digital skill training programs, as income is one of the factors correlated with lower levels of digital skills.

Given the potentially high level of overlap between individuals who may face digital exclusion and households that are supported by social safety net programs, there may be an opportunity for counties to reach these individuals by connecting digital skills and access activities with social and health services.

Figure 4: Enrollees in Medi-Cal and CalFresh



16 National Center for Education Statistics (2018), A Description of US Adults Who Are Not Digitally Literate. Accessed at: https://nces.ed.gov/pubs2018/2018161.pdf

17 National Skills Coalition (2023), Closing the Digital Skill Divide. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org)

18 University of Southern California, California Emerging Technology Fund, and California Department of Technology (2023), Digital Equity Online Survey Analysis and Needs Assessment. Accessed at: Digital Equity Online Survey Analysis and Needs Assessment.

19 CalFresh (2024), CalFresh Data Dashboard (January 2024 Point in Time). Downloaded on June 20, 2024. Accessed at: https://www.cdss.ca.gov/inforesources/data-portal/research-and-data/calfresh-data-dashboard.

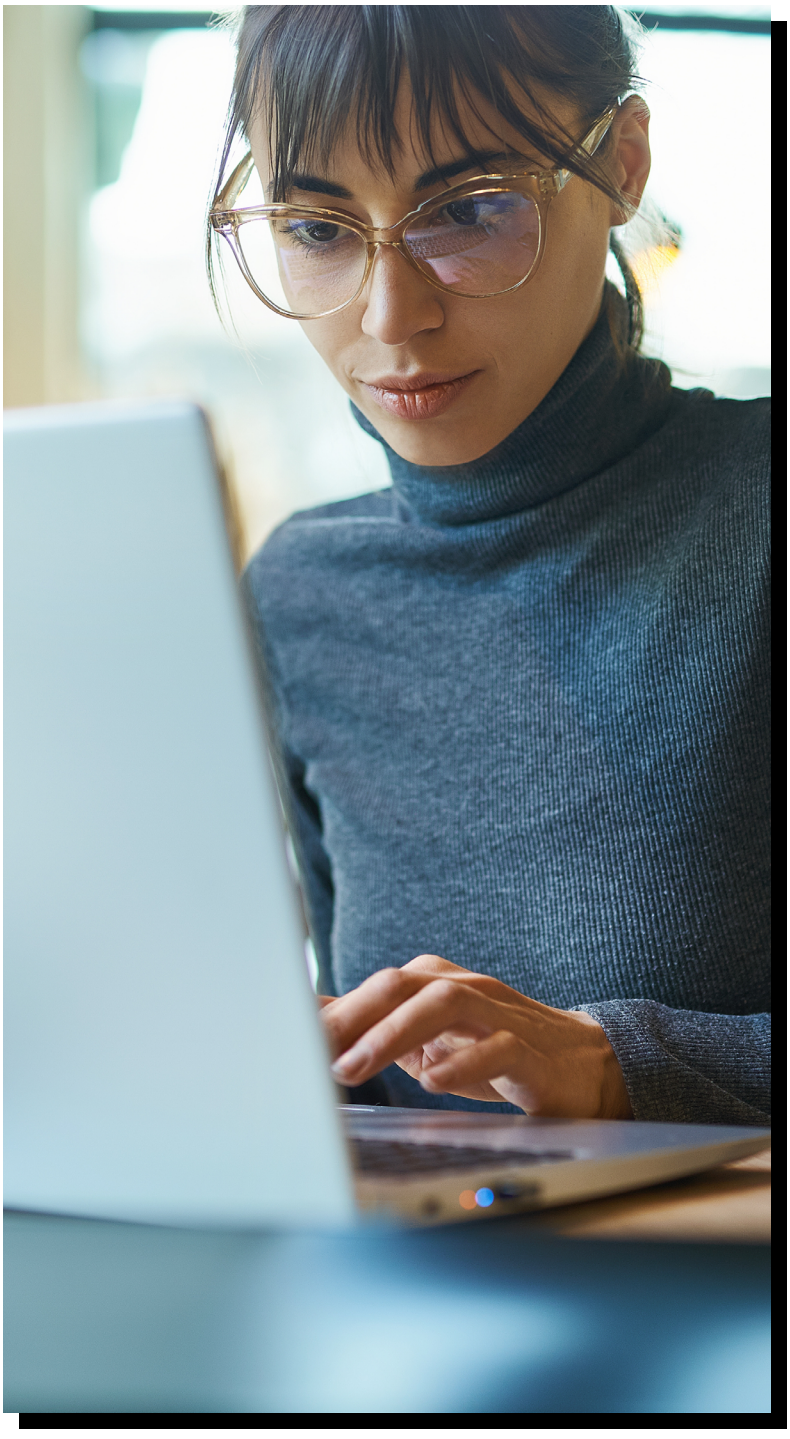
WHAT ARE CHALLENGES FACING DIGITAL NAVIGATION PROGRAMS?

Challenge: limited digital skills assessment data

The State Digital Equity Survey is a helpful starting point for gathering data on individuals' self-reported digital skill levels. However, digital skills assessments must be conducted on an ongoing basis and measure the same key performance indicators to determine progress against a baseline. Additionally, there is limited data on progress towards narrowing the 'third level' of the digital divide, which emphasizes empowering individuals to fully benefit from social and economic opportunities provided by digital skills.

It is challenging to measure digital skill levels given that there is no uniform criterion of digital literacy. California Emerging Technology Fund's UNESCO based framework for digital literacy provides one reference framework. However, much of the available data focuses on self-assessments through surveys, which may lead to over- or under-rating skills. Data collection may be improved when supplemented with targeted samples of performance testing.[20]

To make the case for investment in digital skills and access, it will be important to measure impact across programs in the State. The scale, such as the number of individuals benefiting from digital skills training, and benefits, such as increased work opportunities or access to telehealth, are two key factors to determining program impact.



20 Van Deursen et al. (2014). Measuring Digital Skills. Accessed at: https://www.lse.ac.uk/media-and-communications/assets/documents/research/projects/disto/Measuring-Digital-Skills.pdf

Challenge: funding sustainability and program scalability

To date, most funding for digital skills and access is provided through competitive grant funding. Notable digital equity-related grant funding programs are included in **Table 1** below**.**

Table 1: State and federally funded digital skills and access programs

PROGRAM	DESCRIPTION	AMOUNT	FREQUENCY	GRANT PERIOD
NTIA Digital Equity Capacity Grant	The state has been awarded by the NTIA to fund digital skills and access activities. The exact design for the program funding is still being determined.	$70.2M[21]	One-time	5 years
NTIA Connecting Minority Communities Program	The Connecting Minority Communities Pilot Program is a $268 million grant program to Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and Minority-Serving Institutions (MSIs) for the purchase of broadband internet access service and eligible equipment or to hire and train information technology personnel. Digital literacy skill training is also an eligible activity.	$21M	One-time	2 years
California Public Utilities Commission (CPUC) California Advanced Services Fund (CASF) Adoption Grant	CASF Adoption Account are available to the Commission to award grants to increase publicly available or after-school broadband access and digital skills and access, such as grants for digital literacy training programs and public education to communities with limited broadband adoption.	$36M	Annual	2 years
CPUC Digital Divide Grant Programs	Grants up to $250,000 to serve low-income small school districts to address gaps in broadband networks, affordability, access to personal devices, and digital skills training.	$1.2M	Annual	1 year

21 This is the first of three tranches of funding for the DE Capacity Grant Program. The amount for the next tranche has not officially been announced as of December 2024. The NTIA also released applications for the Digital Equity Competitive Grant, but individual project amounts are unknown; awards will be highly competitive since it is open nationally.

The upcoming NTIA State Digital Equity Capacity and increased CASF Adoption grant awards will provide further investment in digital skills and access.[22] An estimated $327–$350 million will be available for digital equity related programs over the next 10 years, assuming similar levels of State funding and no additional large-scale federal program after the Digital Equity Act programs expire. While this may seem significant, given the number of Californians who may benefit from digital skills and access activities, the estimated cost to bridge the digital divide will likely be closer to $837 million. This results in a roughly $500 million funding gap.[23] There is also a risk that there will be a decline in the amount of public interest and funding available for digital skills and access and adoption-related activities. Progress made towards closing the digital divide may face major setbacks if investment is discontinued, as evidenced by the wind down of the Affordable Connectivity Program (ACP). Despite being hailed as a successful program with over 23 million subscribers, ACP's federal funding was not renewed by Congress.[24]

Public private partnerships also represent an opportunity to increase funding for digital skills and access activities. For example, there are philanthropic organizations and private companies investing in digital skills and access work such as the Digital Equity Pooled Fund coordinated by the Michelson 20MM Foundation, or various digital skills and access programs from large telecommunication companies like AT&T, Comcast, and Verizon. Unfortunately, the exact amounts donated per annum from private entities to states are difficult to glean and not always publicly available.

While grant funding is important as a catalyst for establishing programs and providing resources to organizations doing the work, relying solely on short-term grant funding poses multifold challenges for organizations delivering these services. Grant funding is typically competitive, and organizations are not guaranteed to win funding every year.

This is a challenge for program sustainability and scalability, as organizations providing the digital navigation and other skills training often must cut back or eliminate services with reduced funding. For example, the California State Library's Connected California Digital Navigator Program, which began serving residents in 2022, ended in June 2024, as there were no longer funds to continue the program.

The reimbursement schedule for many grants may also make it challenging for smaller or lower capacity nonprofits or local government entities to participate, given limited cashflow or government grant management capacity. Additionally, there is often limited opportunity to scale up successful digital skills and access pilot programs due to a lack of additional funding. An example of this is the NTIA Connecting Minority Communities Program. Seven colleges and universities in California were awarded a total of ~$20 million over two years, with most programs starting operation the last quarter of 2023, and scheduled to end in 2025.[25] These pilot programs were selected by the NTIA for their innovative approaches to increasing digital skills for students and surrounding communities, which predominantly serve covered populations. It is unclear if there will be any opportunities to scale these programs or fund successor programs.

22 Resolution T-17825 increased the budget allocation for the CASF Adoption grant for FY 2024-25 from just over $20 million to over $36 million.

23 The next section describes the approach to sizing the need for digital upskilling and devices and a cost benefit analysis for investing in digital skills and access programming.

24 Benton Institute (2023). Accessed at: The Affordable Connectivity Program Creates $16.2 Billion in Annual Benefits to Subscribers | Benton Institute for Broadband & Society.

25 NTIA (2024), Connecting Minority Communities webpage. Accessed at: https://broadbandusa.ntia.doc.gov/funding-programs/connecting-minority-communities/award-recipients

KEY TAKEAWAYS

ON THE IMPORTANCE OF DIGITAL SKILLS AND ACCESS

There is significant need for digital skills and access, given both the potential percentage of Californians that may have digital skill gaps (16%) and potential benefits of increasing digital literacy across the state.[26]

Some key takeaways about the importance of digital skills and access:

The digital divide extends beyond just barriers to accessing internet and devices — it also relates to lacking digital skills and knowledge.

The digital divide affects millions of Californians. Covered populations may be more at risk of digital exclusion due to socioeconomic barriers.

There are multiple challenges to reducing the digital divide in California, including:

- Limited digital skills assessment data
- Insufficient funds to scale and sustain programs
- Current funding structures that rely on competitive grants

Investing in digital skills and access improves access to healthcare, education, job opportunities, government services, and more. Costs, benefits, and the "business case" for investing in digital skills and access will be discussed in more detail in the next section.

26 US Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (2012), Program for the International Assessment of Adult Competencies. Accessed at: A Description of US Adults Who Are Not Digitally Literate (ed.gov)

COSTS AND BENEFITS OF INVESTING IN DIGITAL SKILLS AND ACCESS

> **"What is the benefit of investment? Achieving digital equity is a benefit in and of itself. In addition, we know that digital skills and access and equity programs have significant socioeconomic impacts, specifically in terms of health, employment, education, essential services, and civic participation."**
>
> —NTIA (2023), Digital Equity Outcomes and Impacts

The intention of this section is to demonstrate both the scale of investment needed to close the digital divide in California and the potential economic impact of digital skills and access services, in particular digital skills training. Results of the benefit cost analysis in the following section highlight costs and benefits from the perspective of investments by the State of California and individual learners. Augmenting digital skills and providing Californians with the devices needed to get online are two key facets of increasing self-sufficiency. The investment in digital skills training is prudent for not only the individuals, but also for their communities. For every dollar California invests in digital skills and access, there is a return on investment of almost seven dollars in workforce and government efficiency-related benefits.[27]

27 There is limited data on digital literacy levels in California, and what programmatic costs are associated with starting up a statewide digital skills and access program. This benefit-cost analysis does not purport to provide an exact number for how many Californians need to be upskilled and the costs and benefits associated with this endeavor, but serves as a starting estimate.

SCALE OF THE PROGRAM

Considerable progress has been made in connecting Californians to broadband service, yet many residents are unable to fully participate in today's digital society and economy. Based on California's 2023 population, the estimated population without high digital skills (16%)[28] is equal to 6.2 million Californians.[29] Despite the benefits that digital skills bring to learners, a percentage of individuals may prefer not to learn digital skills and will not participate in upskilling initiatives. Based on research done in the United Kingdom, which looked at historical uptake rates of landline phone technology pre-mobile phone era, this amounts to approximately 5% of the population.[30] Removing that percentage from the total number of learners leaves the State with approximately 5.9 million Californians who could benefit from digital upskilling.

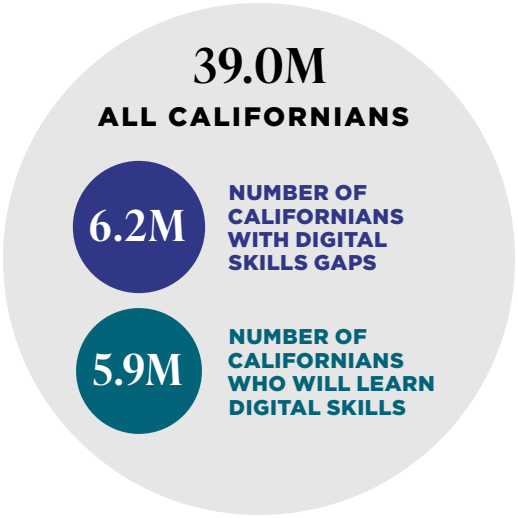


Figure 5: Scale of Californians with digital skills gaps

COSTS OF SUPPORTING DIGITAL SKILLS AND ACCESS

Costs for supporting digital skills and access services (digital skills training and device distribution) were estimated using predicted staff and device costs. Overhead costs were baked into training cost estimates for the first year at a rate of 16% and for the remaining years at a rate of 8%. These figures are informed by interviews with digital navigator program managers and from reviewing administrative cost allowances for federal programs (e.g., NTIA Connecting Minority Communities). The highest proportion of the total cost are staffing costs related to digital skills training, as depicted in **Figure 6**. Combining the cost of digital skills training and the cost of device distribution results in a total program cost of just under $828 million. This figure accounts for 2.3% year-over-year inflation.[31]

Figure 6: Estimated costs for digital skills and access program

The total cost amounts to an estimated average cost per learner between $135 to $154 over a 10-year period, inclusive of skills training and device distribution.[32] In addition to the digital skills and access program cost to the State, there is also a time cost to the individuals participating in the program. Over 10 years, the cost to individuals is equal to $947 million based on anticipated lost wages from time spent learning digital skills.

28 US Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (2012), Program for the International Assessment of Adult Competencies. Accessed at: A Description of US Adults Who Are Not Digitally Literate (ed.gov)

29 US Census Bureau (2022), Quick Facts: California. Accessed at: US Census Bureau QuickFacts: California. Note: Using the California Department of Finance's "Total Estimated and Projected Population Report", it is estimated that California's projected population for 2035 will be 39,872,787. Given that California's population is expected to grow at a rate of less than 100,000 individuals per year for the next 10 years, our analysis does not factor in population growth when estimating individuals requiring digital skills support over the next decade. Given limited data on digital skill levels for under-18-year-olds, they are included in the total estimate of Californians in need of digital upskilling.

30 Good Things Foundation (2022), The Economic Impact of Digital Inclusion in the UK. Accessed at: https://www.goodthingsfoundation.org/policy-and-research/research-and-evidence/research-2024/digital-inclusion-uk-economic-impact.

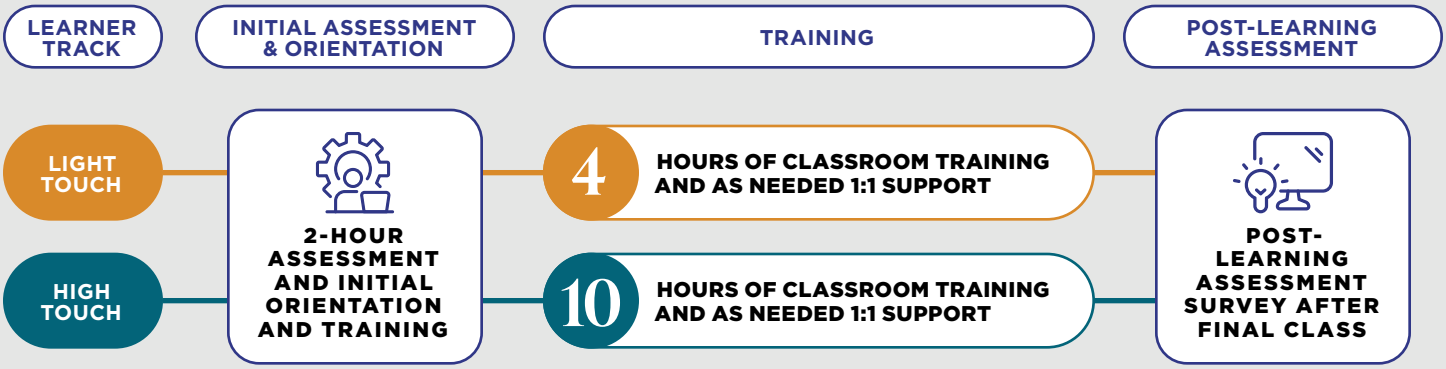
31 Note: Assuming first year costs are higher due to standing up the program, year one costs include a higher program overhead estimate at 16%, while years two through ten have an estimated program overhead of 8%.

32 Note: The cost for learners who receive devices would be higher.

Digital skills training

To estimate the total investment required to reach 100% of Californians, stakeholder interviews with digital navigators and desktop research informed the practical and attributable costs of setting up and operating a basic digital skills program. Depending on the level of preexisting digital skills and comfortability with technology, some learners require "high touch" training, while others can be effectively taught with "light touch" training. The average cost of supporting each learner varies based on the learning track. This split is described in **Figure 7** — the main difference is the number of hours of training required.

Figure 7: Light touch and high touch learning tracks*



*The analysis also assumes that some learners will require retraining, accounted for with a 10% factor associated with high touch training.

For classroom training, interviews with digital navigation facilitators and Project STAR results were utilized to determine a recommended maximum class size.[33] Based on this information, we assume a maximum classroom ratio of eight learners to one instructor to support more individualized training in a classroom setting.

In addition to staffing costs, overhead costs could impact total program costs. For example, a program that uses existing community or government owned facilities, such as a library, can cost-share property rental expenses, utilities, telephone/internet subscription, and printing costs. In line with the proposed program design, we assume that most digital skills and access programs will be in existing community or government owned facilities or delivered remotely and will have minimal expenses related to property rental or utilities. We also consider typical limitations on administrative costs for grant programs. Program overhead costs are estimated to be 8–16% of total program costs, to support administrative components and startup costs required for hiring and training digital navigators.

Staffing costs are the most significant contributor to total program costs. Our team interviewed program managers for existing digital navigator programs in California and reviewed hourly wages posted on ZipRecruiter for digital navigator type roles to estimate wages. We estimate staff wages to cost $30 per hour to encourage experienced staff retention.

Based on interviews with digital skills training providers and considering the varying skill levels of program participants, we estimate that 50% of learners will require more hours of training (high touch category) and 50% of learners would need fewer hours of training (light touch category).

33 C.M. Achilles et al. (2008), Tennessee's Student Teacher Achievement Ratio (STAR) project. Accessed at: Project STAR K-3 summary report.pdf — Project Star Dataverse (harvard.edu)

Digital device distribution

In addition to the cost of providing digital skills training, device costs must be considered when assessing the size of digital skills and access investment. To take full advantage of digital skills, learners must have access to internet-enabled digital devices. Although many digital tasks can be accomplished using a smartphone, full digital skills and access requires the use of a laptop computer or tablet. We reviewed several low-cost laptops ranging from $189 to $270 with 4GB of RAM and a 'student-friendly design.' These laptops met minimum requirements for basic tasks like email, internet browsing, video conferencing, and word processing at an affordable price point. Therefore, a cost estimate of $208 (including tax) was used for a computer on the lower end of the price range that still meets minimum requirements.[34]

Given the lower price of new devices, this analysis assumes that the personal devices purchased through this program are new. However, program costs could potentially be reduced further by incorporating a mixture of donations, refurbished devices, and bulk purchase order agreements.

According to 2022 American Community Survey data, about 4.1% of households in California do not own a computer.[35] Applying the percentage of Californians without a computer (4.1%) to the number of learners (5.9 million) and adjusted for average household size (2.89)[36] equals 702,000 individuals who need devices. At a price of $208 per device, device distribution will cost $176 million over ten years, including overhead costs and 2.3% year-over-year inflation.

34 Lenovo (n.d.). How much RAM memory do I need for my laptop? Accessed at: https://www.lenovo.com/us/en/glossary/how-much-memory-ram-do-i-need-on-my-laptop/. See Appendix B for device specifications.

35 US Census Bureau (2022), DP02 Selected Social Characteristics in the United States. Accessed at: DP02: Selected Social ... - Census Bureau Table

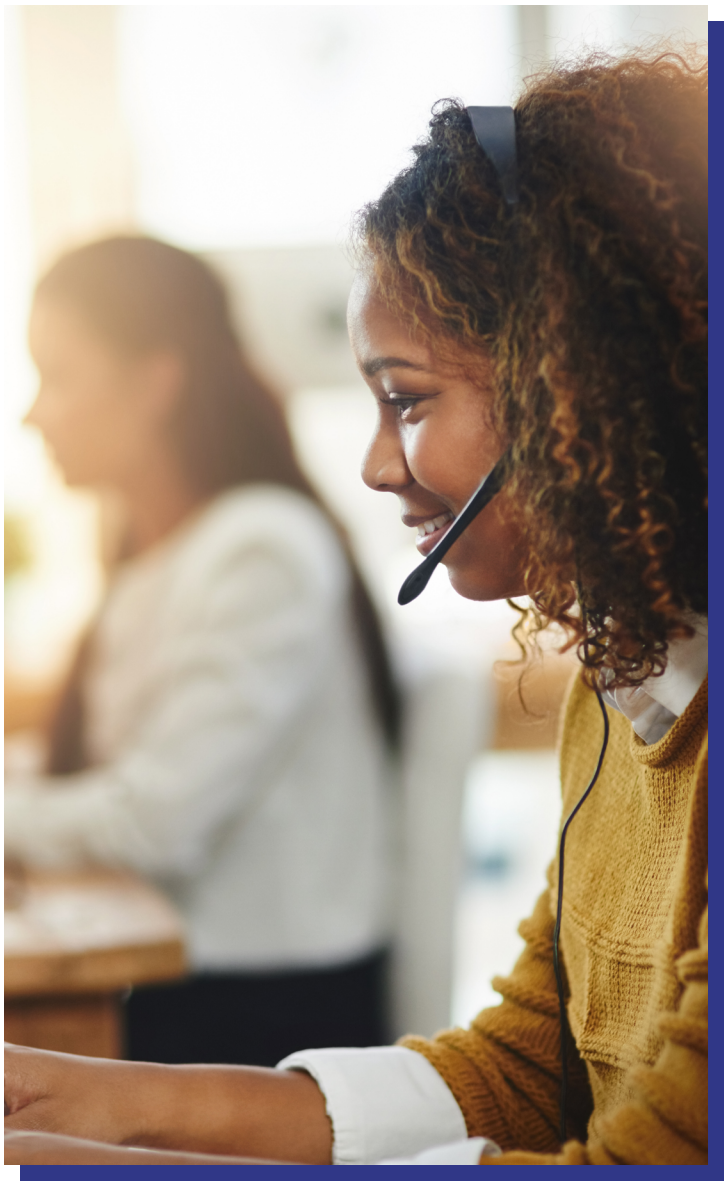
36 US Census Bureau (2023), QuickFacts California. Accessed at: US Census Bureau QuickFacts: California

BENEFITS OF SUPPORTING DIGITAL SKILLS AND ACCESS

There are numerous benefits associated with workforce, healthcare, and government efficiency that offset the initial investment costs of the proposed digital skills and access program. These include benefits that accrue directly to an individual, such as a potential increase in earning potential, and benefits that reduce government costs, such as increased efficiency. To avoid double counting, benefits are calculated separately for the State of California's operations and for individuals.[37]

Workforce related benefits

Digital skills and access provide many benefits to workforce development for the State. There is an overwhelming demand for digital skills in the labor market — 91% of California job ads require "definitely digital or likely digital" skills across all industries, and different sized businesses.[38] To support California's workforce through increasingly digital work, digital skills and access are essential to build skills to prepare for the jobs of the future. As noted in California's Future of Work Report, the State has an opportunity to empower workers with the digital skills to meet future labor market needs.[39] Overall, there is sufficient evidence that internet access and digital skills can bring significant gains, both at a micro and macro level, to California.



White-collar professions and higher education are no longer the only fields that require digital literacy. Digital literacy is now also a requirement in blue-collar professions. Computers and other internet tools increase the productivity of essential service jobs (e.g., retail, food services, construction). Southern California Association of Governments' Digital Action Plan notes how plumbers often use internet-enabled tools like Venmo or Square for payments from their customers. Another example notes how immigrant-owned businesses must be digitally literate to develop a website, post advertisements, or provide online shopping options. Providing digital skills and access opportunities supports learners' ability to increase take home pay and find employment, in addition to the State benefits of increased tax revenue.

37 As mentioned with the cost estimates for digital skills and access programming, there is equally limited data for quantifiable economic benefits associated with digital skills and access. The methodology used to estimate benefits from digital skills and access includes assumptions that applies statistics and figures from different years to broader populations than those surveyed for the original analysis.

38 National Skills Coalition (2024), Closing California's Digital Skill Divide. Accessed at: CA-Digital-Divide-Fact-Sheet-Final.pdf

39 California Future of Work Commission (2021), Future of Work Report. Accessed at: California Future of Work Report

Benefits related to increasing employment and tax revenue

Digital skills can increase an individual's employability by 14.9%, as many middle to higher income jobs require digital literacy.[40] Digital skills may also increase an individual's ability to find employment, as job postings shift online.[41] If unemployed Californians are able to find jobs through digital skills training, the expected reduction in unemployment benefit payouts is $298 million over 10 years. California's Unemployment Insurance Fund (UIF) is supported by payroll taxes on employers and is the source of payments to jobless workers under ordinary circumstances. However, the UIF can no longer fully absorb claims for benefits, and a recent Employment Development Department report posits that the UIF's debt is expected to reach $21 billion by 2025.[42] Reducing benefits claims will not fix the UIF's debt problem, but it is a step in the right direction.

In addition to the unemployment benefits savings, digital skills and access support is shown to increase income and, subsequently, tax revenues. The potential increase in state and federal tax revenue from increased earnings is $1,363 to $2,879 per year per household, depending on household size and composition.[43] In California, this results in an estimated $1.2 billion in increased tax revenue over 10 years for previously unemployed individuals. There is an additional estimated $3.2 billion in tax revenue over 10 years for 15% of individuals who were previously employed and experienced an increase in salary based on digital upskilling.[44]

Benefits of increasing earning potential for Californians who increase their digital skills level

While the workforce benefits to the State are significant, there are also sizeable workforce benefits for individual Californians who become digitally included. If upskilled Californians would earn an extra $8,000 per year, previously unemployed Californians would take home $374 million in additional earnings over 10 years. Assuming 15% of employed Californians find higher-paying employment due to digital skills training, they would take home $6.7 billion in additional earnings over 10 years.[45]

40 Literacy Strategies (2015), Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs. Accessed at: Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs (americorps.gov)

41 Ibid.

42 California Employment Development Division (2024), UIF Forecast, Accessed at: edduiforecastjan24.pdf

43 National Skills Coalition (2023), Closing the Digital Skill Divide. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org)

44 Literacy Strategies (2015), Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs. Accessed at: Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs (americorps.gov)

45 National Skills Coalition (2023), Closing the Digital Skill Divide. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org). Note: Rounded from 14.9% to 15% for calculation.

Healthcare related benefits

Beyond workforce benefits, digital skills and access supports telehealth availability for all Californians. Following the uptick in use from the COVID-19 pandemic, telehealth emerged as a vital component of the health care landscape, offering improved access to care and reducing disparities in health care availability.[46] California's progressive telehealth policies —such as enabling all licensed health care professionals to provide telehealth and ensuring permanent Medi-Cal coverage and payment parity for in-person and telehealth care—have contributed to increased telehealth use statewide. For many Californians, telehealth eliminates barriers to healthcare related to transportation costs and difficulty getting timely appointments. Telehealth can also build increased trust in and stronger relationships between patients and their doctors and nurses.[47] Providing Californians with digital skills gaps with the tools they need to utilize telehealth can reduce disparities in telemedicine adoption and increase individual financial and time savings. For rural Californians, the benefits from telehealth are even greater —equalizing opportunities for health care.

Financial and time savings for individuals accessing telehealth

Research shows that access to telehealth can reduce roundtrip travel costs for patients by $11.02 per telehealth encounter.[48] In 2022, however, only 46.7% of adults statewide used telehealth.[49] If all non-rural learners benefiting from digital skills training replaced one in person medical visit with a telehealth visit each year over 10 years, the estimated cost savings is $2.3 billion.

For rural Californians, specifically, telehealth is a particularly salient issue. Every county in California — except San Francisco — has rural populations, with a total rural population of 2.3 million Californians.[50, 51] Without telehealth, 84% of rural patients would miss one day of work and 74% would spend $75–$150 for additional family expenses for one healthcare visit.[52] On average, rural Americans live 10.5 miles from the nearest hospital (equal to a 21 mile round trip), when compared to 5.6 miles for those in suburban areas and 4.4 miles for those in urban areas.[53] Over 10 years, rural learners are estimated to save $5.2 million in travel costs and $94 million in additional family expenses incurred traveling for medical care, assuming one telehealth visit per year.

46 UCLA Center for Health Policy Research (2023), Telehealth and the Future of Health Care Access in California. Accessed at: UCLA Center for Health Policy Research Policy Brief: Increased Risk of Poor Mental Health and Severe Mental Health-Related Impairment Among California Adults Impacted by COVID-19.

47 California Health Care Foundation (2023), Telehealth Experiences and Preferences Among Californians with Low Incomes. Accessed at: Telehealth Experiences and Preferences Among Californians with Low Incomes (chcf.org)

48 Sristi Sharma, Peter Yellowless, Christine Gotthardt, et al. (2022), Environmental Impact of Ambulatory Telehealth Use by A Statewide University Health System During COVID-19. Accessed at: Environmental Impact of Ambulatory Telehealth Use by a Statewide University Health System During COVID-19 | Telemedicine and e-Health (liebertpub.com). Note: Ambulatory care refers to medical services performed on an outpatient basis, without admission to a hospital or other facility.

49 UCLA Center for Health Policy Research (2023), Telehealth and the Future of Health Care Access in California. Accessed at: UCLA Center for Health Policy Research Policy Brief: Increased Risk of Poor Mental Health and Severe Mental Health-Related Impairment Among California Adults Impacted by COVID-19. Note: This rate is less than the 49.0% in 2021 during a period when there were more in-person restrictions, but nearly quadruple the 12.4% of adults who used telehealth in 2018.

50 Hans Johnson and Marisol Cuellar Mejia (2024), Rural California Fact Sheet. Accessed at: Rural California — Public Policy Institute of California (ppic.org)

51 California Department of Technology (2024), California's Digital Equity Plan. Accessed at: DRAFT CA SDEP 2023

52 Ann Bynum, Cathy Irwin, Charles Cranford, George Denny (2003), The impact of telemedicine on patients' cost savings: some preliminary findings. Accessed at: The impact of telemedicine on patients' cost savings: some preliminary findings — PubMed (nih.gov)

53 Onyi Lam, Brian Broderick, and Skye Toor (Dec. 12, 2018), How far Americans live from the closest hospital differs by community type. Accessed at: How far do urban, suburban and rural Americans live from a hospital? | Pew Research Center

Government efficiency related benefits

Digital skills and access augments government efficiency, in addition to providing workforce and healthcare benefits. Using outdated and manual processes costs Americans an estimated $117 billion and government agencies an estimated $38.7 billion every year.[54] All federal government agencies combined spend nearly $143 billion on information collection annually. State and local government officials have noted that one of the top obstacles facing employees is too much manual work.[55] As more government services and processes are digitized, increasing digital skills and access for Californians will reduce workload for government employees and increase efficiency. This benefits not only State employees and the State budget, but also individuals using government services, as they are better equipped and have the tools to access support services virtually.

Digital first approach to services leads to increased government efficiency

Ten and a half billion hours were spent by the public on government paperwork in 2022, and "adopting digitized processes would greatly reduce turnaround times for government services, the amount of 'burden hours' on citizens, and the amount of tedious manual labor by government employees."[56] If the government achieved 20 hours of workload elimination via digitalization per employee, the net capacity gained would be worth $3 billion.[57] This equals a capacity gain of $72 per employee per hour reduced, considering there are two million employees in the federal workforce.[58]

If State of California government employees experience similar capacity gains, they would also increase their capacity by $72 per hour, resulting in $953 million of estimated government efficiency benefits over 10 years. With digital skills training, we assume that more previously digitally unskilled Californians could use online government services, leading to a reduction in State employee workload of one hour in year one, two hours in year two, three hours in year three, etc., through the program's 10-year period with cumulative benefits as more Californians receive training.

Details on the approach used to calculate costs and benefits can be found in Appendix C.

54 Office of Information and Regulatory Affairs, Office of Management and Budget (n.d.), XML Reports. Accessed at: PRA XML Reports (reginfo.gov)

55 US Chamber of Commerce Technology Engagement Center (2022), Government Digitization: Transforming Government to Better Serve Americans. Accessed at: 2022 State of Local Government Report (govtech.com)

56 US Chamber of Commerce Technology Engagement Center (2022), Government Digitization: Transforming Government to Better Serve Americans. Accessed at: 2022 State of Local Government Report (govtech.com)

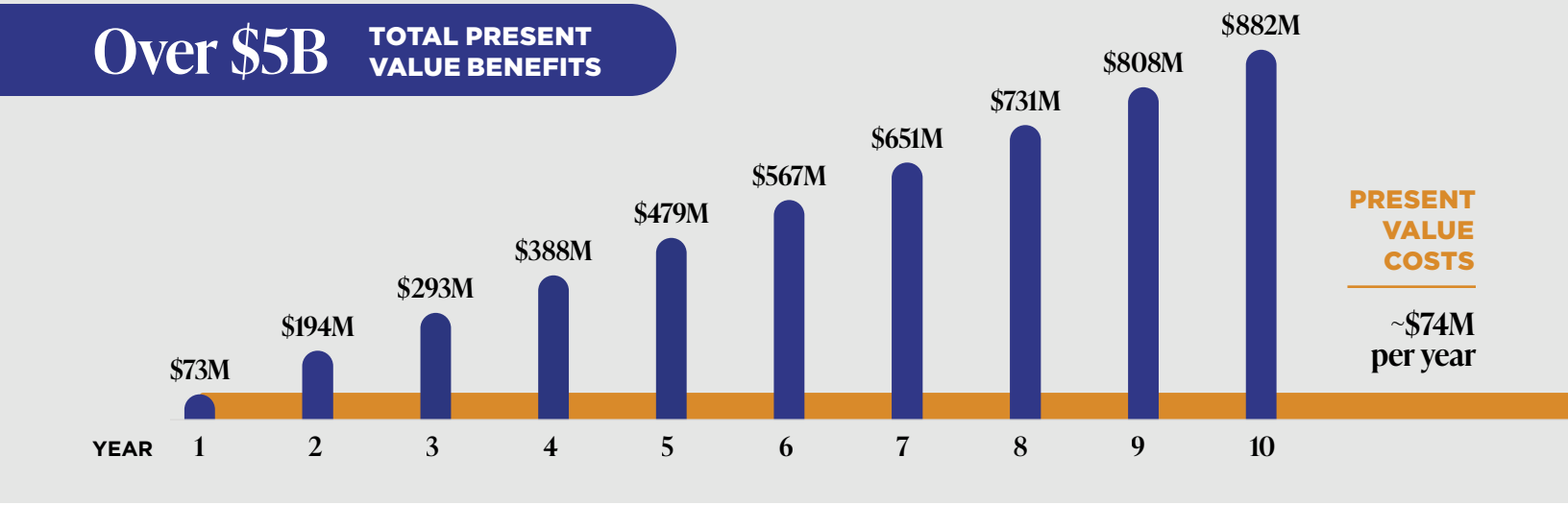
57 Federal RPA Community of Practice (2020), RPA Program Playbook. Accessed at: RPA Program Playbook v1.1 (gsa.gov)

58 FedScope (n.d.), Federal Employment — Current Month. Accessed at: Employment — Current Month — IBM Cognos PowerPlay Studio (opm.gov)

NET PRESENT VALUE CALCULATION AND BENEFIT-COST RATIO

To determine if the benefits outweigh the costs of investing in digital skills and access, we calculated the net present value and the benefit-cost ratio for the proposed program. A comparison of benefits and costs over a 10-year period are illustrated in **Figure 8**. Using the costs and benefits outlined above and a discount rate of 2.0%,[59] we determined the total government benefits and costs per year and total individual benefits and costs per year. For this calculation, we assume 2.3% year-over-year inflation.[60] The sum of the 10 years of the discounted annual cash flows results in the net present value.[61] From the perspective of the State government, the present value benefits over a 10-year period are just over $5 billion, assuming that benefits are cumulative over time as more people receive training, with a benefit-cost ratio of about 7. The sum net present value is ~$4.3 billion. Please see Appendix D for greater detail on the net present value calculation.

Figure 8: Cost benefit comparison for the State of California's investment in digital skills and access programs



59 White House (Feb. 27, 2024), Valuing the Future: Revision to the Social Discount Rate Means Appropriately Assessing Benefits and Costs. Accessed at: https://www.whitehouse.gov/cea/written-materials/2024/02/27/valuing-the-future-revision-to-the-social-discount-rate-means-appropriately-assessing-benefits-and-costs/

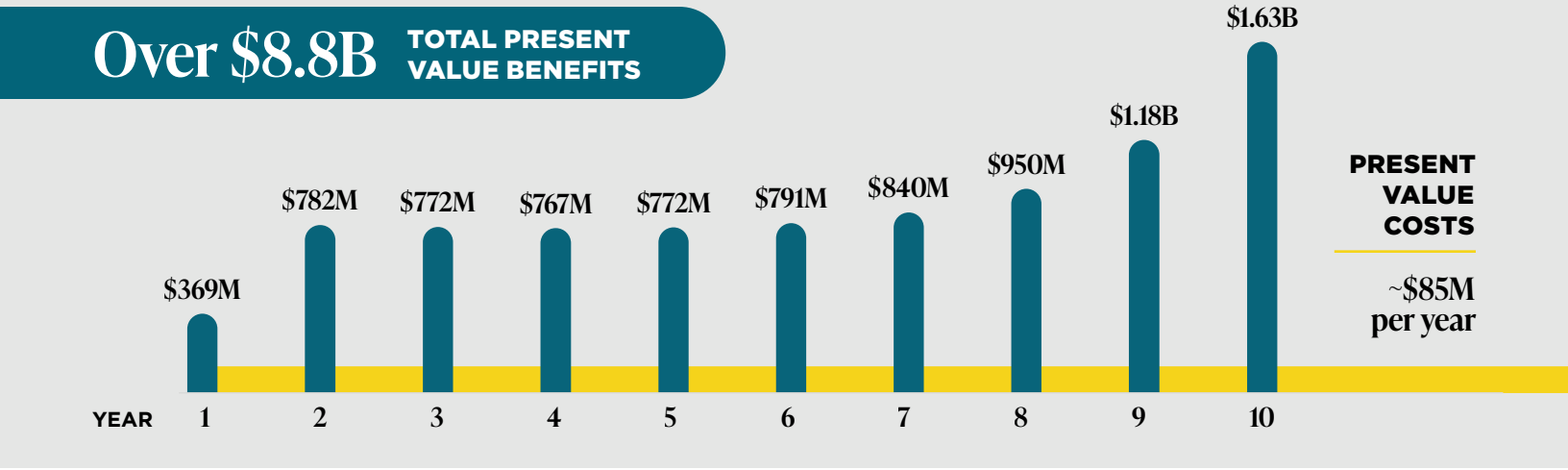
60 Statista (2024), Projected annual inflation rate in the United States from 2010 to 2028. Accessed at: https://www.statista.com/statistics/244983/projected-inflation-rate-in-the-united-states/

61 The discounted annual cash flow is calculated by taking the difference between the benefits and costs divided by a discount factor.

From the perspective of individuals benefitting from the digital skills and access program, the sum net present value is over $8.8 billion, with a cost-benefit ratio of 10.45. The cost for individuals is calculated as the cost for the time spent learning digital skills with workforce and healthcare related benefits. Given the potential for year one benefits, the benefits outweigh the costs for the entirety of the digital skills and access program as shown in **Figure 9**.

The benefit-cost analysis demonstrates that investing in digital skills and access to bridge the digital divide is a sound financial investment, resulting in about $7 in benefits for every $1 invested from the State perspective, and $10.45 in benefits for every $1 invested from the perspective of individual Californians.

Figure 9: Cost benefit comparison for individuals who participate in digital skills and access programs



Social and community benefits

The benefits that come from digital skills and access cannot solely be quantified through a financial lens—there are a myriad of intangible social benefits. For example, in conversation with Riverside County's Office on Aging, the Senior Learning and Technology Engagement program administrators spoke of the connectivity benefits brought through digital skills and access for aging individuals. The ability to connect with loved ones who may live far away, take part in a virtual exercise class, or stay informed about current events hinges upon an individual's digital skills.

DIGITAL NAVIGATOR SUCCESS STORY

A patron of the Connected California Digital Navigator Program, who suffered a traumatic brain injury, struggles with skill building. A digital navigator was able to help the patron through repeated step-by-step interactions, first with assistance acquiring a laptop and discounted internet. Through the next encounter, they walked through various digital skill building activities. The digital navigator was then able to connect the patron to the local WorkSource Center to help with their job search and guided them through how to use the Google Maps application so they could take public transportation to get there. Through support from the Digital Navigator Program, this individual was able to regain some independence and is empowered to seek new job opportunities.

One recent report surveyed the impact and benefits of digital skills and access for social housing estate residents.[62] Most survey respondents were first-time computer users — initial usage centered on email, news, and entertainment. The respondents experienced increased ability to: do their job, search for employment, learn new things, communicate with friends and family, and pursue hobbies and interests. In short, digital skills and access "reveal[s] considerable success in improving information and communication technology access and intensity, while usage patterns reveal improvement in both the social and economic dimensions of residents' lives."[63]

There are also other ancillary benefits from digital skills and access. Many industries such as healthcare, finance, retail, and technology benefit from increased access to their products and a more tech savvy workforce. With greater digital skills and access, previously digitally excluded Californians can access banking apps and e-commerce, online activities that reduce costs for individuals and increase economic activity.[64] In addition to benefits to local businesses, digital skills and access strengthen the social fabric of communities by promoting communication and connectivity. Increased internet access benefits the community, enabling individuals to engage in online forums, access local resources, and collaborate on community projects.[65] For rural communities, beyond increased access to healthcare via telehealth, digital skills and access allows rural individuals to participate in the broader economy.[66]

Digital skills and access can also help create safer societies and support green strategies. The use of broadband allows emergency dispatchers to communicate quickly with individuals in need and can assist in developing advancements to disaster response and early warning systems. Further, digital skills and access can reduce air pollution from vehicle emissions. Assuming learners transition to one telehealth visit per year from in-person medical visits, over 10 years there will be 102,000 metric tons of carbon dioxide, 67 metric tons of hydrocarbons, one thousand metric tons of exhaust carbon monoxide, and 44 metric tons of exhaust nitrogen oxide saved.[67] Reduced vehicle emissions contributes to healthier communities across California, providing public benefits for non-learners and learners alike.

Supporting digital skills training is an important element in achieving the vision of the State's Digital Equity Plan: "A California in which all residents have access to high-performance broadband, affordable service and devices, and the training and support necessary to enable digital skills and access for economic and other social benefits."[68] As the world becomes increasingly digital, addressing digital exclusion will closely tie into overall efforts to reduce socioeconomic inequality and improve societal outcomes.

62 Robyn Broadbent and Theo Papadopoulos (March 12, 2012), Impact and benefits of digital skills and access for social housing residents. Accessed at: Impact and benefits of digital skills and access for social housing residents: Community Development: Vol 44 , No 1 — Get Access (tandfonline.com)

63 Ibid.

64 National Digital Inclusion Alliance (Feb. 15, 2024), Sustaining the Movement and Funding: The Future of Digital Inclusion. Accessed at: Sustaining the Movement and Funding: The Future of Digital Inclusion — National Digital Inclusion Alliance

65 Community Tech Network (Oct. 16, 2023), Bridging the Gap: Leveraging Digital Equity to Drive Economic Development. Accessed at: Leveraging Digital Equity to Drive Economic Development (communitytechnetwork.org)

66 Ibid.

67 Sharma, S. et al. (2022), Environmental Impact of Ambulatory Telehealth Use by A Statewide University Health System During COVID-19. Accessed at: Environmental Impact of Ambulatory Telehealth Use by a Statewide University Health System During COVID-19 | Telemedicine and e-Health (liebertpub.com).

68 California Department of Technology (2024), State Digital Equity Plan. Accessed at: https://broadbandforall.cdt.ca.gov/california-digital-equity-plan-04-2024/

KEY TAKEAWAYS

ON THE COSTS AND BENEFITS OF INVESTING IN DIGITAL SKILLS AND ACCESS

Investing in digital skills and access activities has many positive benefits, and overall benefits outweigh costs. After accounting for an overhead of 8–16% of total program costs and 2.3% annual inflation, the program costs to the State are estimated at ~$828 million.

$828M
TOTAL COST OF DIGITAL SKILLS AND ACCESS

$383M TRAINING COSTS (HIGH TOUCH)

$268M TRAINING COSTS (LIGHT TOUCH)

$176M DEVICE DISTRIBUTION

Benefits are estimated at just over $6 billion after factoring in inflation, consisting of $5.2 billion in workforce related savings and increased revenue and $980 million in government efficiency savings.

BENEFITS
$6B

$5.2B
WORKFORCE SAVINGS/ INCREASED REVENUE

$980M
GOVERNMENT EFFICIENCY SAVINGS

Adjusting costs and benefits to the net present value using a discount rate of 2%,[69] the benefit-cost ratio for investment is about $7 for every dollar invested for California's State government.

In addition to benefits to the public through government savings and revenue, the primary economic benefits for individuals are increased job opportunities and earning potential. There are also healthcare benefits related to increased access to telehealth for individuals that can reduce costs associated with travel and missing work.

Finally, there are numerous non-financial social and community benefits related to digital skills and access, such as the ability to connect with loved ones virtually, enhanced communication for essential services, and reduced emissions through fewer vehicle miles traveled. How to raise sufficient funds to close the digital divide and reap the benefits of digital skills and access will be discussed in the next section.

69 This is the social discount rate recommended in the 2023 Office of Management and Budget Circular Appendix A.

HOW DO WE BUILD A SUSTAINABLE DIGITAL SKILLS AND ACCESS PROGRAM?

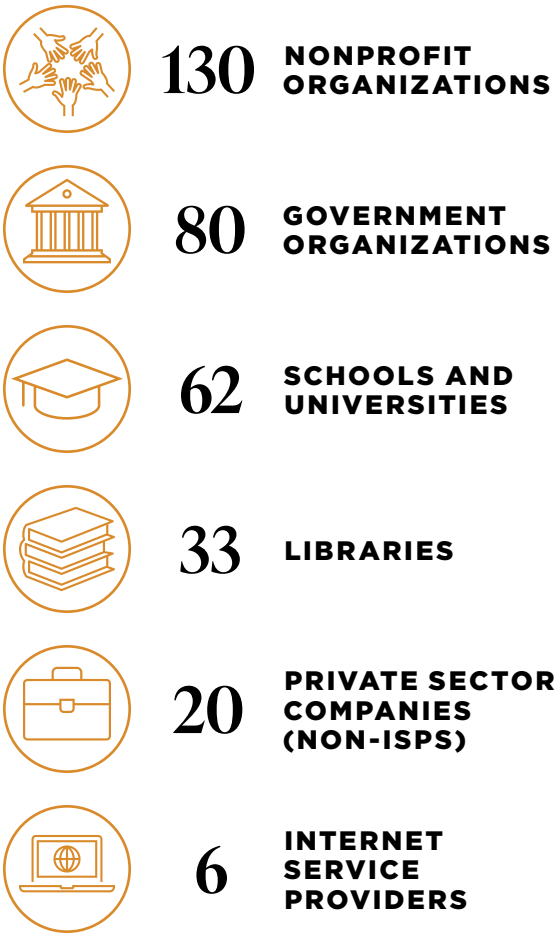


Figure 10: Types of organizations in Digital Equity Ecosystem

"With digital equity, we all win."

–National Digital Skills and Access Alliance (2024)

As demonstrated in the previous section, there is a clear case for investing in digital skills and access programs. However, the digital equity service ecosystem in California faces an uncertain future as several programs wind down without clear successors to fund activities at scale. Organizations are already struggling to access funding sources, with over 60% of respondents to California Department of Technology's (CDT's) Digital Equity Ecosystem Mapping (DEEM) survey reporting difficulty in accessing funding sources.[70] While there are some existing annual funding sources for digital skills and access work, such as the CASF Adoption Fund, current funding sources are insufficient to reach all Californians.

Despite future funding concerns, California has over 330 organizations that provide digital skills and access services. Identified through a desktop review and the State's DEEM, these organizations are diverse in their service offerings and geographic locations (see **Figure 10**).[71] While this list is not comprehensive, it gives an indication of the current state of California's digital equity ecosystem. Programs are offered at local, regional, and statewide levels, although not all programs offer one-on-one digital navigator support.

70 California Department of Technology (2023), Digital Equity Ecosystem Mapping Findings. Accessed at: DEEM Latest Data Report.

71 Note: Respondents to the state DEEM survey self-reported, and there may be many institutions who did not respond or did not complete the survey. As an example, many libraries offer 'Tech Tuesdays,' but may not have responded to the survey or have a digital navigator.

A lack of funding has impacted several State-led programs, such as California State Library's Connected California Digital Navigators Service. The statewide program ended services in June 2024 after funding was depleted, without a successor digital navigator program. Maintaining a robust digital equity ecosystem is difficult without a stable funding source. Additionally, as ARPA funding winds down, it is likely that more programs may shut down if alternative funding is not provided. For example, Los Angeles County has been running its highly impactful Delete the Divide Program since 2022 with ARPA funding. The program provides at-risk Angelenos and small business owners with direct access to modern technologies, as well as training and support services, educational programs, technical certifications, job shadowing, mentoring, corporate tours, paid internships, academic scholarships, practical experience, entrepreneurial opportunities, and pathways to well-paying careers. The program's pre-apprenticeship model has trained over 250 technology interns since its inception but faces uncertainty once ARPA funding runs out.[72]

FUNDING MECHANISM FOR DIGITAL SKILLS AND ACCESS

To close the digital divide, we encourage the State to act decisively to create a funding mechanism for digital skills and access. This could continue the momentum that local governments, community anchor institutions, nonprofits, and other entities started with ARPA funds. The CASF-Adoption grant and anticipated federal Digital Equity Capacity Grant could help with seed funding, but they are not sufficient to sustain programs at the scale or duration needed to close the digital divide. As calculated in the Costs and Benefits section, the potential annual cost of a digital skills and access program is ~$83 million per annum over 10 years.[73] Funding to support this could be derived from one of the following funding mechanisms:

BRAIDING SOCIAL SERVICE PROGRAM FUNDING

OR

CREATING A DEVICE FEE MODELED AFTER CALIFORNIA'S ELECTRONIC DEVICE RECYCLING PROGRAM FOR SELECT INTERNET-CAPABLE DEVICES SOLD

Braided funding mechanism

The first funding option is to braid existing social service program funding. It is unlikely that one source of funding could sustain the scale of program required to close the digital divide, especially since digital skills and access is not the core mandate of any existing social service programs. Although a braided funding mechanism could be implemented, it is not a viable solution due to limited funding available and excessive administrative burdens on implementing entities.

Braiding existing social service program dollars that support workforce development to fund digital skills and access could be possible, as digital literacy is foundational for workforce and educational opportunities in today's technology-oriented society. However, CalFresh, CalWORKs, and WIOA I and II do not currently have a formal digital literacy component, although caseworkers may direct individuals to resources and courses at libraries and adult education programs.[74] Allocating 1–2.5% of earmarked funds for a digital skills and access program could act as a "one-stop-shop" to support the workforce development efforts of these social benefit programs. However, due to the sizable need for digital skills and access services across the State, diverting existing funding could not fully cover the anticipated costs to upskill Californians and provide digital devices to those in need. Braided funding with a 1–2.5% allocation only amounts to ~$30.3 million annually at current federal funding levels.

72 Interview with Delete the Divide program staff on June 3, 2024.

73 While RivCo anticipates that there will be a decreasing digital divide due to investment from other programs, changing demographics, and educational opportunities, the benefit cost analysis takes a 'worst case' scenario approach in terms of estimating the number of learners who may need digital upskilling if there are no other investments from the federal government or other state programs.

74 Note: There is a proposed WIOA Digital Skills for Today Workforce Act, which would amend the Workforce Innovation and Opportunity Act to establish a digital skills at work grant program. However, it may not pass Congress. (https://www.kaine.senate.gov/imo/media/doc/digital_skills_for_todays_workforce_act.pdf)

Table 2: Braided funding diagram illustrating how much could be available if 1.5–2% of various social safety net program funds were allocated to digital literacy[75]

PROGRAM	PROGRAM DESCRIPTION	TOTAL ANNUAL FUNDING	1.5-2% OF ANNUAL FUNDING
CalFresh Employment & Training (E&T)	Funding from the US Department of Agriculture Food and Nutrition Service is administered by counties to CalFresh eligible beneficiaries to receive employment and training support — most of the funding is utilized for job searching activities, but it can be potentially allocated for digital skills and access.	~$109.2M	~$2.2M
CalWORKs	CalWORKs is funded through TANF, which provides cash assistance and supportive services to low-income families based on eligibility criteria. CalWORKs offers flexibility in how funding is spent, and the Employment Services program would be eligible for digital skills and access activities.	~$1.1B	~$21.7M
Video Franchise Fee	In line with the Digital Infrastructure and Video Competition Act (DIVCA) of 2006, up to 5% of annual video revenue can be used to support digital literacy.	~$323.4M	~$4.8M
WIOA Title I Discretionary Funding — Adult Program	WIOA Title I can support digital skills and access activities, as digital literacy and digital skills are cited in California's State Workforce Plan as essential to workforce development.	~$21.1M	~$423K
WIOA Title II Adult Basic Education & English	WIOA Title II can support digital skills and access activities, as digital literacy and digital skills are cited in California's State Workforce Plan as essential to workforce development	~$55.3M	~$1.1M
		ANNUAL BRAIDED FUNDING	**~$30.3M / year**

Braiding existing social service program funding also introduces a myriad of administrative burdens. As each social service program exists to serve a specific covered population in California, digital skills and access program administrators could be required to segment learners to ensure adherence to the federal reporting requirements assigned to CalFresh, CalWORKs, and WIOA I and II. This is particularly important to avoid concerns with 'duplication of benefits,' as learners cannot receive both SNAP E&T (CalFresh) and TANF (CalWORKs) benefits.[76] Each program also has slightly different eligibility requirements and may include time limits for receiving benefits. For SNAP E&T and TANF, there are maximum amounts of benefits that can be received, which creates complex implementation activities. Moreover, braiding WIOA I and II funding introduces specific reporting requirements related to employment outcomes.

75 Sources: CalFresh (CDSS Employment Training Program Plan), CalWORKs (2024–25 Budget CalWORKs), Video Franchise Fees (CPUC DIVCA Report to the Governor and Legislature), WIOA Title I (EDD WIOA Formula Planning Estimate Allocations — PY 24–25), WIOA Title II (CA Dept. of Education WIOA Title II Funding Results 2023-24)

76 USDA Food and Nutrition Service (2024), SNAP E&T Participant. Accessed at: SNAP E&T Participant | Food and Nutrition Service (usda.gov)

Other challenges stem from the differences in funding disbursement between the four federal programs. SNAP E&T uses a quarterly reimbursement mechanism, but counties must first spend 15% on administrative costs. With CalWORKs, counties are reimbursed quarterly up to the full amount of the annual allocation from the federal block grant with state and county contributions. Counties' CalWORKs allocations are determined annually through a formula and county contribution. For WIOA I, statewide activities through the Governor's Discretionary Fund are disbursed through competitive grants, whereas WIOA II is a variable pay-for-performance reimbursable grant disbursed by the State.

Electronic device fee-based funding mechanism

Digital skills and access activities could be more effectively funded by creating a fee on electronic devices ("Digital Skills Contribution Fee"). Pending legislation, the fee structure could be modeled after CalRecycle's Electronic Waste Recycling Fee, which is a recycling fee assessed on certain electronic devices sold in California.[77] Recent legislative action to update the Recycling Fee (e.g., SB 1215) may suggest a willingness from the California Legislature to implement more electronic device related fees. Establishing a Digital Skills Contribution Fee could provide the State with the revenue needed to fund digital skills and access programming at large, in a way that directly ties to digital skills and access rather than trying to draw funds from indirect sources. By placing a fee on devices used to access the internet, the program could benefit from a sustainable funding source.

Like the fee structure of the Electronic Waste Recycling Fee, the Digital Skills Contribution Fee could vary based on the type of device. The types of devices included could be internet-enabled or 'smart' devices, with a waiver for low dollar value devices such as smart home lightbulbs. The proposed fee could be $1.00 for smartphones, smart home devices including smart voice assistants, smart wearables (excluding medical devices); $2.00 for gaming devices valued above $50; and $3.00 for computer devices (including tablets). Ancillary accessories such as 'smart' headphones could be excluded. The list of devices included could be reviewed as technology evolves — the examples listed above are not exhaustive. Retailers could only collect fees on new devices — sold refurbished devices could be exempt. If necessary, fees could be reviewed every two years by CDT based on actual revenue generated to maintain program solvency.

Figure 11: Proposed Digital Skills Contribution Fees

A fee schedule with which types of devices could be included, and which could be waived, is suggested above, but will be refined through stakeholder engagement. Based on the market size of electronic device sales in California, it is estimated that the Digital Skills Contribution Fee could generate at least $83 million annually, covering the anticipated cost of the digital skills and access program.

Despite the direct tie to digital skills and access efforts, there are potential challenges associated with a new fee on electronic devices. As a new fee would require legislative action, it could be difficult to gather support from legislators and community advocates due to the already high tax burden on Californians. Additionally, it may be challenging to gather support for the Digital Skills Contribution Fee as it could be considered "regressive," given that the fee is the same regardless of the buyer's income. However, those who are low-income are most likely to directly benefit and receive digital skills training and/or a free digital device, like any other public assistance program. Low-income learners who receive free digital devices would not be subject to the fee.

77 CalRecycle (2024), Electronic Waste Recycling Fee. Accessed at: Electronic Waste Recycling Fee — CalRecycle Home Page

PROPOSED SOLUTION

With a sustainable funding source from a Digital Skills Contribution Fee, California should take legislative action to establish a digital skills and access program led by counties. This could provide all counties in California the opportunity to participate, regardless of county budget or administrative capacity to submit a competitive grant application. Funding could support a combination of five eligible digital skills and access activities:

1. DIGITAL SKILLS TRAINING

Digital skills training is the teaching of any skills related to operating digital devices or taking advantage of digital resources. Depending on the level of preexisting digital skills and comfortability with technology, some learners may require more training than others. Based on interviews with digital skills training providers, it is assumed that digital skills learners possess varying skill levels. Therefore, counties could be encouraged to establish more than one training path; for example, a county may establish two training paths — one for "high touch learners" and one for "light touch learners."

2. DEVICE DISTRIBUTION

To take full advantage of digital skills, Californians must have access to internet-enabled digital devices. Therefore, device distribution is an additional eligible activity for digital skills and access funds. Although many digital tasks can be accomplished using a smartphone, full digital skills and access requires the use of a laptop computer or tablet. To support those with limited digital skills, devices must have a 'student-friendly design' and meet minimum specifications for basic tasks like email, internet browsing, video conferencing, and word processing. To standardize device qualification, Californians in need could qualify for a free digital device if they fall under one or more of the following categorizations:

- Low-income (household of four: at or below $49,000 annual income)
- Live in public housing
- Participate in the National School Lunch Program (free or reduced lunch at school)
- Receive SNAP or TANF benefits[78]

3. WORKFORCE DEVELOPMENT TIED TO DIGITAL SKILLS ADVANCEMENT

Due to the workforce benefits stemming from digital skills training, counties can also use funding to support digital skills advancement related to workforce development. Digital skills for the workplace include essential computer skills and essential software skills, in addition to more specialized employment-related digital skills (e.g., creating a profile on LinkedIn or developing a resume with Microsoft Word). This eligible activity could connect Californians to opportunities to advance their digital skills through existing online learning platforms, community colleges, and workforce development programs.

4. PUBLIC COMPUTER LAB UPGRADES

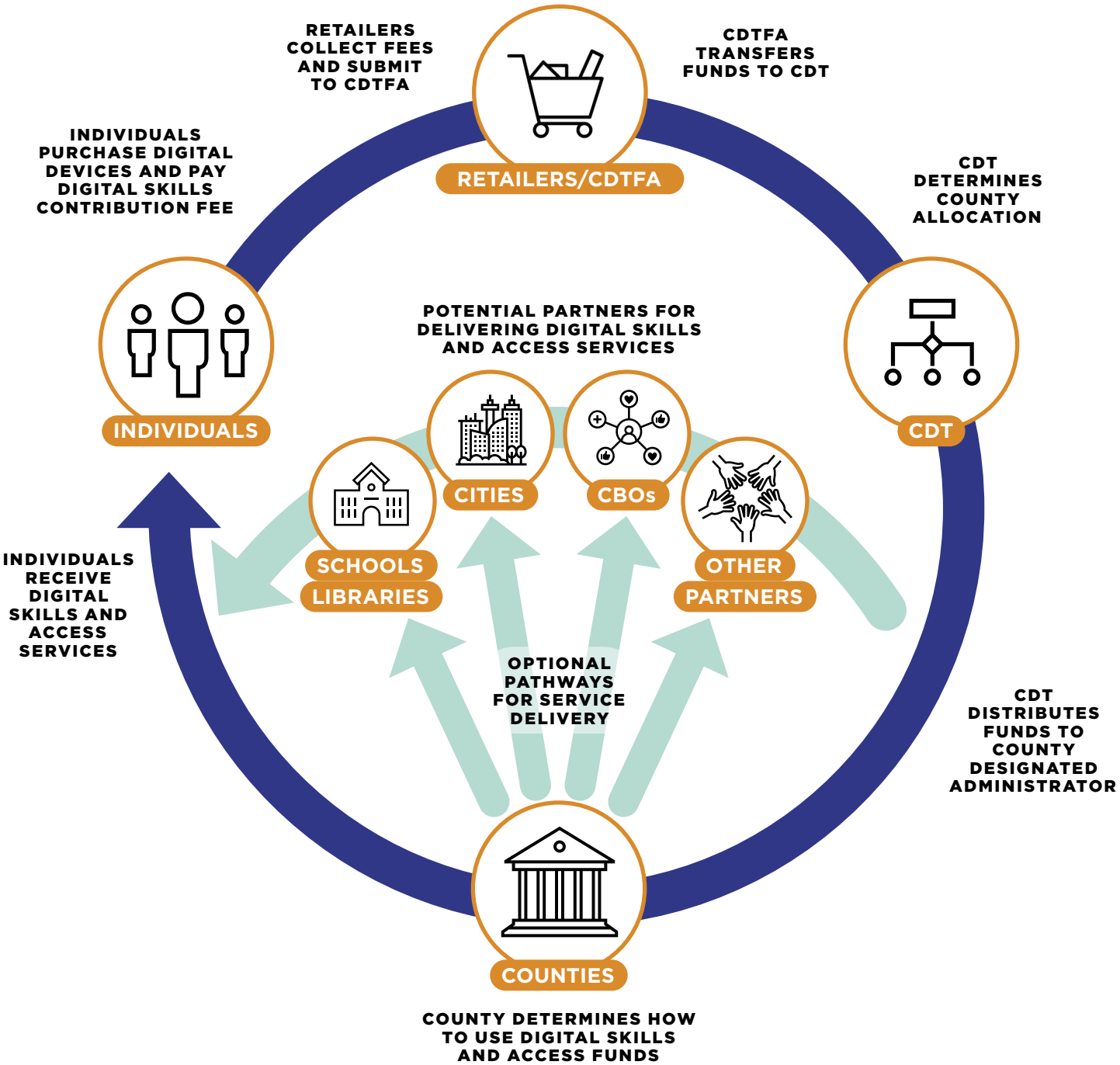
Funding could also go towards updating existing or new public computer labs in public spaces or facilities — e.g., county and city libraries, community and senior centers, museums, non-profit and community-based organization facilities — to support broader use of internet-capable devices by Californians. Public computer labs must be accessible to all county constituents.

5. Digital skills and access activities that tie into outcome areas identified in the State Digital Equity Plan.

78 These criteria align with the former Affordable Connectivity Program criteria. Annual income thresholds would be adjusted according to the Federal Poverty Level or CDT-determined income threshold.

Figure 12 below provides a high-level overview of how local governments and digital skills and access organizations could work together to support their communities.

Figure 12: Digital skills and access program funding management overview



Proposed funding allocation

Counties could be allocated funding based on broadband subscription rate data from the American Community Survey (ACS) Five-Year estimate, and their proportion of unsubscribed households relative to the State's overall population. ACS data could be used as a proxy for the potential number of individuals with low or no digital skills. To help balance the needs of smaller counties, there could be a minimum annual disbursement threshold of $25,000.

As mentioned in the Importance of Digital Skills and Access section, there is to limited data available on digital skill levels at a sufficiently granular level**.** Additionally, the broadband subscription rate metric ties into digital inclusion objectives described in the State Digital Equity Plan and is reliably available.

The method for calculating the funding allocation is designed to be simple and transparent:

1	The number of households that do not have a broadband subscription could be calculated from the most recently available ACS 5-Year Estimate for each county and the State total.[79]
2	The number of unsubscribed households per county could then be calculated as a percentage of the State's total number of unsubscribed households. This could determine the proportion of households represented per county.
3	The calculated percentage could be multiplied by the annual Digital Skills Contribution Fee revenue to determine the amount of funding to be allocated to each county for the next fiscal year.

Figure 13 below illustrates how funding could be allocated using Riverside County as an example:

Figure 13: Example of grant allocation calculation for Riverside County.[80]

TOTAL NUMBER OF HOUSEHOLDS IN RIVERSIDE COUNTY		NUMBER OF HOUSEHOLDS SUBSCRIBED TO BROADBAND SERVICE IN RIVERSIDE COUNTY		NUMBER OF RIVERSIDE COUNTY HOUSEHOLDS NOT SUBSCRIBED TO BROADBAND
749,976	−	687,967	=	62,009

NUMBER OF RIVERSIDE COUNTY HOUSEHOLDS NOT SUBSCRIBED TO BROADBAND		NUMBER OF HOUSEHOLDS WITHOUT BROADBAND SUBSCRIPTION IN CALIFORNIA		RIVERSIDE COUNTY'S PROPORTION OF HOUSEHOLDS IN CALIFORNIA NOT SUBSCRIBED TO BROADBAND
62,009	÷	1,138,238	=	5.4%

RIVERSIDE COUNTY'S PROPORTION OF HOUSEHOLDS IN CALIFORNIA NOT SUBSCRIBED TO BROADBAND		ANNUAL DIGITAL SKILLS CONTRIBUTION FEE REVENUE		RIVERSIDE COUNTY'S DIGITAL SKILLS & ACCESS ALLOCATION AMOUNT
5.4%	×	$83,000,000	=	$4,521,679

79 Note: This will typically lag by two years. For example, in 2024, the most recent data vintage is the ACS 2022 5-Year Estimate. The variable used is for any type of broadband Internet subscription (B28002_004E).

80 A table of the estimated allocations per state based on average annual cost of the program is in Appendix E.

The overarching goal of the program is to close the digital divide, acknowledging that there will be a small percentage of the population who either choose not to or are unable to adopt technology. As such, the program could be sunset before the 10-year period if near universal coverage is achieved. Using the same proxy indicator as the grant allocation calculation, the program could be designed to wind down once a certain success metric is met.

For discussion purposes, the broadband subscription rate used for calculating grant allocations could be used with a target of achieving >98% subscription rates for two consecutive years. As the program becomes operational, impacts could be assessed on an annual basis. This assessment could use county program data related to the number of individuals served, pre- and post-training assessments, and other metrics that may be determined in discussion with participating counties and other stakeholders.

KEY TAKEAWAYS

ON SUSTAINABLE FUNDING AND PROGRAM DESIGN

Braiding different funding sources could be possible to support digital skills and access activities, but it is insufficient and more administratively complex than having one dedicated source of funding.

Placing a modest fee of $1.00 to $3.00 on selected internet-enabled devices could create a single dedicated funding stream to sustainably fund digital skills and access.

A statewide county-administered digital navigator program that allows for local customization, includes help desk support, device distribution, and digital skills assessment could help reduce the digital divide at scale.

NEXT STEPS

To bring the digital skills and access program to life, it will be essential to work with the State, counties, cities, community-based organizations, community anchor institutions, private sector partners, and other entities. The scale of the digital divide is too great for any single sector or organization to tackle. Once the proposed program is refined, building a coalition of champions is the next step to support the legislative action required to institute the Digital Skills Contribution Fee.

APPENDICES

APPENDIX A. POPULATION STATISTICS FOR THE STATE OF CALIFORNIA AND RIVERSIDE COUNTY

Table 3: Covered population percentages in Riverside County and California[81]

COVERED POPULATION	% OF RIVERSIDE COUNTY POPULATION	TOTAL IN RIVERSIDE COUNTY	% OF CALIFORNIA POPULATION	TOTAL IN CALIFORNIA
Members of a racial or ethnic minority group	65%	1,559,737	66%	25,156,142
Individuals with language barriers	31%	755,400	31%	12,110,000
Aging individuals	19%	467,170	22%	8,166,156
Individuals living in covered households	23%	550,700	20%	7,509,000
Individuals with disabilities	12%	283,600	12%	4,306,000
Individuals who primarily reside in a rural area	5%	116,400	9%	3,366,000
Veterans	5%	122,308	3%	1,471,467
Incarcerated individuals	1%	12,460	0.30%	136,000*

Table 4: Enrollees in social safety net programs in Riverside County and California[82]

SAFETY NET PROGRAM	% OF RIVERSIDE COUNTY POPULATION	TOTAL IN RIVERSIDE COUNTY	% OF CALIFORNIA POPULATION	TOTAL IN CALIFORNIA
Medi-Cal	42.6%	1,030,343	39.0%	15,207,229
CalFresh	14.0%	339,351	14.2%	5,521,739
Dual Enrolled in Medi-Cal and CalFresh	12.7%	306,083	13.0%	5,049,805

APPENDIX B. EXAMPLE LAPTOP FOR DEVICE DISTRIBUTION

Table 5: Example laptop specifications and cost used for estimating device costs

DEVICE	SPECIFICATIONS	COST
Lenovo Chromebook 3 14" FHD Touchscreen Laptop[83]	Intel Celeron N4020, 4GB Memory, 96GB Storage (32GB eMMC + 64GB Card), Wi-Fi, Bluetooth, Webcam, Chrome OS, 1080p Resolution, HD Audio	$189 pre-tax, $208 with tax

81 US Census Bureau (2024). Accessed at: Digital Equity Act Population Viewer. Incarcerated individual figures are pulled from the April 3, 2024 Department of Corrections and Rehabilitation report.

82 CalFresh (2024), CalFresh Data Dashboard (January 2024 Point in Time). Downloaded on June 20, 2024. Accessed at: https://www.cdss.ca.gov/inforesources/data-portal/research-and-data/calfresh-data-dashboard.

83 Amazon (n.d.), Lenovo Chromebook 3 14''. Accessed at: Amazon.com: Lenovo Chromebook 3 14" FHD Touchscreen Laptop, Light-Weight, Intel Celeron N4020, 4GB Memory, 96GB Storage(32GB eMMC + 64GB Card), WiFi, Bluetooth, Webcam, Chrome OS, Platinum Gray

APPENDIX C. COST-BENEFIT ANALYSIS METHODOLOGY

The following describes our methodology in approaching the benefit analysis of digital skills programming in more detail. To determine the size of the population with digital skills gaps, existing digital skills training activities in California are not included within the projections of persons that will need training support to highlight the overall scale of potential need. For details on the scale and cost associated with the program, please see the Costs and Benefits of Investing in Digital Skills and Access section.

Due to the method used to calculate benefits, only cumulative benefits in the Net present value calculations and cost benefit ratios have been adjusted for inflation.

Costs of digital skills and access program

There is limited data on digital literacy levels in California, and what programmatic costs are associated with starting up a statewide digital skills and access program. This benefit-cost analysis does not purport to provide an exact number for how many Californians need to be upskilled and the costs and benefits associated with this endeavor but serves as a starting estimate.

Due to the fragmented data sets available, not all statistics have been applied "apples-to-apples." To determine the number of learners in the proposed digital skills and access program, this report uses a statistic from National Center for Education Statistics (NCES) analysis from 2013 — 16% of adults in the US do not possess digital skills.[84] The NCES data defines adults as Americans aged 16-65; however, this analysis applies the 16% figure to all Californians. Although not a direct match — and from 10 years ago — this figure is applied to all Californians to include those younger than 16 and older than 65 in the proposed program. This is supported by reports from the National Skills Coalition that there is often fragmented digital literacy in younger adults, who may know how to use social media but not Microsoft Office, and aging individuals, who may not need digital skills for workforce benefits but for connectivity and belonging.[85]

Benefits of digital skills and access support

The costs associated with digital skills training and digital device provision are significant, but there are numerous benefits associated with workforce, healthcare, and communication that offset the initial investment costs. However, as mentioned with the cost estimates for digital skills and access programming, equally limited data for quantifiable economic benefits associated with digital skills and access. The methodology used to estimate benefits from digital skills and access includes assumptions to apply statistics and figures from different years to broader populations than those surveyed for the original analysis. The figures presented in the following sections should be viewed as a starting point to understanding the benefits brought by digital skills and access.

84 US Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (2012), Program for the International Assessment of Adult Competencies. Accessed at: A Description of US Adults Who Are Not Digitally Literate (ed.gov)

85 National Skills Coalition (2020), The New Landscape of Digital Literacy. Accessed at: https://nationalskillscoalition.org/wp-content/uploads/2020/12/05-20-2020-NSC-New-Landscape-of-Digital-Literacy.pdf

Benefits related to increasing employment and tax revenue

According to a Community Technology Empowerment Project Report, digital skills learners experienced a 14.9% increase in their employment rate.[86] Additionally, a 2021 National Skills Coalition study reviewed 43 million "Help Wanted" ads posted that year, identifying the potential increase in tax revenue from employees with digital skills.[87] The analysis found that the increase in state and federal tax revenue from greater earnings can range from $1,363 to $2,879 per year depending on household size and composition.

Digital upskilling ties to California's broader statewide workforce goals, with the Future of Work in California Report emphasizing the importance of digital skills training and technology in reaching California's Workforce Innovation and Opportunity Act goals.[88] We therefore attempt to estimate the employability impacts of ensuring that all Californians learn basic digital skills. To do this, we estimate the potential increase in employment and reduction in unemployment insurance claims if unemployed Californians could find job opportunities through digital skills training. The expected reduction in unemployment benefit payouts is $298 million, considering the number of learners in California, an estimated 5.3% unemployment rate, and 14.9% increase in employment.[89]

To determine the estimated increase in tax revenue from digital skills and access programming, we assume the average household size is 2.89.[90] Using data from the National Skills Coalition, the resulting potential increase in state and federal tax revenue from increased earnings can range from $472 to $996 per individual.[91] Applying the state and federal tax revenue average to digital skills learners experiencing greater employment results in an estimated $1.2 billion increase in tax revenue over 10 years for individuals who were previously unemployed. There is an additional estimated $3.2 billion increase in tax revenue over 10 years for 15% of individuals who were previously employed but experienced an increase in salary based on digital upskilling.[92] This analysis assumes that the increase in employability for those previously employed will be due to increasing earnings from higher paying jobs requiring digital skills and will ultimately increase tax revenue.

Benefits of increasing earning potential for Californians who increase their digital skills level

While the workforce benefits to the State of California are significant, there are also sizeable workforce benefits for individual Californians who become digitally included. The National Skills Coalition study found that individuals who qualify for jobs that require even one digital skill earn an average of 23% more than those working jobs requiring no digital skills, resulting in an estimated $8,000 per year in extra earnings for an individual worker.[93] Assuming that upskilled Californians would earn an extra $8,000 per year, previously unemployed Californians would take home $374 million in additional earnings over 10 years and employed Californians who take a higher paying digital skills job (15%) would take home $6.7 billion in additional earnings over 10 years.

86 Literacy Strategies (2015), Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs. Accessed at: Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs (americorps.gov)

87 National Skills Coalition (2023), Closing the Digital Skill Divide. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org)

88 California Future of Work Commission (March 2021), Future of Work in California. Accessed at: California Future of Work Report

89 CA Employment Development Department (July 19, 2024), Homepage. Accessed at: Employment Development Department | California

90 US Census Bureau (2023), QuickFacts California. Accessed at: US Census Bureau QuickFacts: California.

91 National Skills Coalition (2023), Closing the Digital Skill Divide. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org)

92 Literacy Strategies (2015), Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs. Accessed at: Evaluation Report: Impact of Northstar Assessment and Related Computer Skills Programming on Employment in CTEP Programs (americorps.gov)

93 National Skills Coalition (2023), Closing the Digital Skill Divide. Accessed at: NSC-DigitalDivide_report_Feb2023.pdf (nationalskillscoalition.org)

Financial and time savings for individuals accessing telehealth

University of California, Los Angeles's Center for Health Policy Research looked at the prevalence of telehealth encounters among Californians. Of Californians with access to telehealth services, only 46.7% of Californians statewide and 41.2% of rural Californians used telehealth in 2022.[94] Another California-based study uncovered that access to telehealth may reduce costs for patients, finding that telehealth users saved $11.02 in total round-trip travel cost saved per telehealth encounter.[95] The estimated telehealth benefits for non-rural Californians with digital skills gaps is $2.3 billion, considering the number of Californians who used telehealth in 2022, the percentage of Californians with low digital skills, the percentage of Californians living in non-rural areas, and the savings per telehealth encounter. This calculation assumes one telehealth visit per year per learner.

On average, rural Americans live 10.5 miles from the nearest hospital (equal to a 21 mile round trip), when compared to 5.6 miles for those in suburban areas and 4.4 miles for those in urban areas.[96] The estimated travel cost savings from telehealth use for rural Californians is $5.2 million, considering 58.8% of rural residents do not use telehealth, the number of rural Californians, the miles travelled per round trip medical visit, and the IRS's 2023 standard mileage rates for medical trips ($0.22/mile).[97] This calculation assumes one telehealth visit per year per rural learner. In addition to transportation savings, if 74% of rural Californians who may benefit from telehealth are paying additional family expenses when traveling for medical care, using telehealth for one medical appointment each year leads to savings of $94 million over 10 years.

Reduced workload for government employees

According to the General Services Administration, if the government achieved 20 hours of workload elimination via digitalization per employee, the net capacity gained would be worth $3 billion.[98] This equals a capacity gain of $72 per employee per hour, considering there are two million employees in the federal workforce.[99]

If State government employees experience similar capacity gains, our analysis assumes that State of California employees would also increase their capacity by $72 per hour. With digital skills training, more previously digitally unskilled Californians would use online government services, leading to a reduction in State employee workload of one hour in year one, two hours in year two, three hours in year three, etc., through the program's 10-year period. As more Californians are upskilled each year, we assume that the reduction in State employee workload would increqase by one hour each year. The estimated government efficiency benefits over 10 years are equal to $953 million, given 240,000 State employees.

94 UCLA Center for Health Policy Research (2023), Telehealth and the Future of Health Care Access in California. Accessed at: UCLA Center for Health Policy Research Policy Brief: Increased Risk of Poor Mental Health and Severe Mental Health-Related Impairment Among California Adults Impacted by COVID-19. Note: This rate is less than the 49.0% in 2021 during a period when there were more in-person restrictions, but nearly quadruple the 12.4% of adults who used telehealth in 2018.

95 Sharma, S. et al. (2022), Environmental Impact of Ambulatory Telehealth Use by A Statewide University Health System During COVID-19. Accessed at: Environmental Impact of Ambulatory Telehealth Use by a Statewide University Health System During COVID-19 | Telemedicine and e-Health (liebertpub.com). Note: Ambulatory care refers to medical services performed on an outpatient basis, without admission to a hospital or other facility.

96 Onyi Lam, Brian Broderick, Skye Toor (2018), How far Americans live from the closest hospital differs by community type. Accessed at: How far do urban, suburban and rural Americans live from a hospital? | Pew Research Center

97 IRS (2023), Standard mileage rates. Accessed at: Standard mileage rates | Internal Revenue Service (irs.gov)

98 Federal RPA Community of Practice (2020), RPA Program Playbook. Accessed at: RPA Program Playbook v1.1 (gsa.gov)

99 FedScope (n.d.), Federal Employment — Current Month. Accessed at: Employment — Current Month — IBM Cognos PowerPlay Studio (opm.gov)

APPENDIX D. NET PRESENT VALUE CALCULATIONS

Table 6: Net present value calculations for government benefits (rounded to closest dollar)

Discount Rate of 2.0%[100]

GOVERNMENT BENEFITS											
YEAR	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**TOTAL**
Benefits	$74,619,038	$202,152,880	$310,915,349	$419,875,813	$529,354,745	$638,422,033	$747,489,321	$856,556,610	$965,623,898	$1,074,691,187	$5,819,700,874
Present Value Benefits	$73,155,919	$194,303,037	$292,982,478	$387,900,350	$479,452,902	$566,900,495	$650,734,437	$731,062,819	$807,990,882	$881,621,088	$5,066,104,406
Cost	$79,538,596	$75,756,399	$77,498,796	$79,281,268	$81,104,738	$82,970,147	$84,878,460	$86,830,665	$88,827,770	$90,870,809	$827,557,647
Present Value Costs	$77,979,016	$72,814,686	$73,028,846	$73,243,637	$73,459,060	$73,675,116	$73,891,807	$74,109,136	$74,327,104	$74,545,713	$741,074,122
B - C	-$4,919,559	$126,396,481	$233,416,553	$340,594,545	$448,250,007	$555,451,887	$662,610,862	$769,725,945	$876,796,128	$983,820,378	
Disc. Factor	1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22	
Disc. Annual Cash Flows	-$4,823,097	$121,488,351	$219,953,631	$314,656,713	$405,993,842	$493,225,379	$576,842,630	$656,953,683	$733,663,778	$807,075,375	$4,325,030,284
Sum NPV	$4,325,030,284										
Benefit Cost Ratio	6.84										

Table 7: Net present value calculations for individual benefits

Discount Rate of 2.0%

INDIVIDUAL BENEFITS											
YEAR	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**TOTAL**
Benefits	$376,448,002	$813,839,447	$819,623,932	$830,758,894	$851,834,923	$890,327,847	$965,283,496	$1,113,164,597	$1,406,896,602	$1,992,330,415	$10,060,508,154
Present Value Benefits	$369,066,668	$782,237,069	$772,349,937	$767,492,804	$771,533,135	$790,585,649	$840,337,372	$950,075,265	$1,177,228,140	$1,634,404,869	$8,855,310,909
Cost	$85,287,016	$87,248,617	$89,255,336	$91,308,208	$93,408,297	$95,556,688	$97,754,492	$100,002,845	$102,302,911	$104,655,878	$946,780,288
Present Value Costs	$83,614,722	$83,860,647	$84,107,296	$84,354,671	$84,602,773	$84,851,604	$85,101,168	$85,351,465	$85,602,499	$85,854,271	$847,301,116
B - C	291,160,986	726,590,829	730,368,596	739,450,685	758,426,626	794,771,159	867,529,004	1,013,161,752	1,304,593,691	1,887,674,538	
Disc. Factor	1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22	
Disc. Annual Cash Flows	285,451,947	698,376,422	688,242,641	683,138,133	686,930,362	705,734,044	755,236,205	864,723,800	1,091,625,641	1,548,550,598	$8,008,009,792
Sum NPV	$8,008,009,792										
Benefit Cost Ratio	10.45										

100 White House (Feb. 27, 2024), Valuing the Future: Revision to the Social Discount Rate Means Appropriately Assessing Benefits and Costs. Accessed at: https://www.whitehouse.gov/cea/written-materials/2024/02/27/valuing-the-future-revision-to-the-social-discount-rate-means-appropriately-assessing-benefits-and-costs/

APPENDIX E. EXAMPLE ESTIMATED DIGITAL SKILLS CONTRIBUTION FEE ALLOCATION BY COUNTY

The Digital Skills Contribution Fee (DSCF) allocation will fluctuate depending on the actual revenue collected annually.

Table 8: Example of the estimated Digital Skills Contribution Fee allocated to each county annually

COUNTY	NUMBER OF HOUSEHOLDS[101]	NUMBER OF HOUSEHOLDS WITHOUT BROADBAND	% OF CA HOUSEHOLDS WITHOUT BROADBAND	DSCF ALLOCATION
California	13,315,822	1,138,238	100.0%	$83,026,375
Alameda	585,818	41,892	3.7%	$3,054,753
Alpine	435	63	0.0%	$25,000
Amador	15,745	2,220	0.2%	$161,882
Butte	83,319	8,526	0.7%	$621,714
Calaveras	17,198	2,498	0.2%	$182,153
Colusa	7,432	1,465	0.1%	$106,827
Contra Costa	408,537	21,707	1.9%	$1,582,868
Del Norte	9,530	994	0.1%	$72,482
El Dorado	75,190	6,172	0.5%	$450,061
Fresno	318,322	46,692	4.1%	$3,404,768
Glenn	9,742	1,378	0.1%	$100,483
Humboldt	54,495	6,117	0.5%	$446,050
Imperial	47,024	5,919	0.5%	$431,612
Inyo	7,849	1,371	0.1%	$99,973
Kern	277,499	33,359	2.9%	$2,432,529
Kings	43,594	5,797	0.5%	$422,716
Lake*	26,487	4,374	0.4%	$318,951
Lassen	8,925	1,261	0.1%	$91,952
Los Angeles	3,363,093	329,279	28.9%	$24,010,934
Madera	43,857	4,848	0.4%	$353,515
Marin	103,709	5,420	0.5%	$395,225
Mariposa	7,597	1,259	0.1%	$91,806
Mendocino	34,557	4,975	0.4%	$362,776
Merced	82,760	8,965	0.8%	$653,725
Modoc	3,403	706	0.1%	$51,481
Mono	5,473	563	0.0%	$41,054
Monterey	130,973	10,736	0.9%	$782,866
Napa	49,218	3,641	0.3%	$265,501
Nevada	41,415	4,019	0.4%	$293,064
Orange	1,066,286	68,168	6.0%	$4,970,792
Placer	152,537	11,115	1.0%	$810,503
Plumas	8,104	1,268	0.1%	$92,462
Riverside	749,976	62,009	5.4%	$4,521,679

101 US Census Bureau. American Community Survey 2022 5-Year Estimate, "B28002_004E: Estimate Total Households with an Internet Subscription — Broadband of any Type". API query: https://api.census.gov/data/2022/acs/acs5?get=NAME,B28002_004E&for=county:*&in=state:06.

COUNTY	NUMBER OF HOUSEHOLDS[101]	NUMBER OF HOUSEHOLDS WITHOUT BROADBAND	% OF CA HOUSEHOLDS WITHOUT BROADBAND	DSCF ALLOCATION
Sacramento	563,856	41,648	3.7%	$3,036,961
San Benito	19,852	1,375	0.1%	$100,265
San Bernardino	659,928	62,145	5.5%	$4,531,596
San Diego	1,149,157	72,797	6.4%	$5,308,337
San Francisco	360,842	30,379	2.7%	$2,215,228
San Joaquin	237,423	24,576	2.2%	$1,792,075
San Luis Obispo	108,099	9,320	0.8%	$679,612
San Mateo	264,323	14,720	1.3%	$1,073,378
Santa Barbara	148,032	12,393	1.1%	$903,694
Santa Clara	650,352	34,816	3.1%	$2,538,773
Santa Cruz	96,487	7,197	0.6%	$524,803
Shasta	71,107	8,166	0.7%	$595,462
Sierra	1,135	261	0.0%	$25,000
Siskiyou	18,768	2,989	0.3%	$217,957
Solano	154,987	11,054	1.0%	$806,055
Sonoma	189,653	12,460	1.1%	$908,580
Stanislaus	175,747	18,134	1.6%	$1,322,326
Sutter	33,041	4,138	0.4%	$301,742
Tehama	24,623	4,127	0.4%	$300,940
Trinity	5,483	1,187	0.1%	$86,556
Tulare	140,670	20,247	1.8%	$1,476,406
Tuolumne	22,831	3,087	0.3%	$225,103
Ventura	275,653	22,281	2.0%	$1,624,724
Yolo	76,107	6,850	0.6%	$499,500
Yuba	27,567	3,115	0.3%	$227,145

COUNTY OF RIVERSIDE
MAY 9, 1893

RIVCO CONNECT