Attachment A

Declaration of Lisa Stringer and Attachments

BEFORE THE PUBLIC UTILITIES COMMISSION OF

THE STATE OF CALIFORNIA

Joint Application of Charter Communications, Inc., Charter Communications Holdings, LLC, and Cox Enterprises, Inc. for Approval Pursuant to Public Utilities Code Section 854 of the Indirect Transfer of Control of Cox California Telcom, LLC (U-5684-C).	Application 25-07-016 (Filed July 30, 2025)

DECLARATION OF LISA STRINGER, EXECUTIVE DIRECTOR OF CENTER FOR ACCESSIBLE TECHNLOGY, IN SUPPORT OF COMMENTS ON CETF SETTLEMENT

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June 1, 2026

1. My name is Lisa Stringer. I have served as the Executive Director of the Center for Accessible Technology (CforAT) since November of 2024. I bring 35 years of progressive experience in non-profits serving people with disabilities, and more than 10 years as an executive director. Much of that time has been in educational programs, and I have more than two decades of work teaching, designing curriculum, and supervising digital literacy programs. This includes writing award-winning curriculum for national use and consulting with community colleges, high schools, and CBOs regarding accessible course design. Lastly, I have taught graduate-level classes on inclusion, universal design, and trauma-informed teaching in adult education.
2. In addition to my personal skills, CforAT has extensive experience working with digital literacy programs serving our constituency of people with disabilities. The fundamental mission of our organization is to assist people with disabilities in using technology to enhance their ability to live independently and participate effectively in their community. This has included structured group courses, individual tutoring, and curriculum design and adoption for remote, in-person, synchronous, and asynchronous learning. In addition to running our own programs, CforAT has provided technology training and consultation to schools for over 20 years, with a focus on accessible course design and classroom inclusion.
3. I am aware that the California Emerging Technology Fund (CETF) distributes funding intended to support other CBOs in working to enhance digital literacy in California. It is my understanding that much if not all of the funding obtained and distributed by CETF comes from settlements in proceedings before the CPUC addressing merger applications between various communications providers, and that the pending settlement between Charter, Cox and CETF would continue the pattern of including funding for CETF's digital literacy efforts.
4. I was invited to participate in an information session (called a Digital Inclusion Listening Session) hosted by CETF, addressing the possibility of seeking CETF funding provided stemming from the settlement between CETF and Verizon in Commission Proceeding A.24-10-006. The intent of this session was to discuss how CETF's Digital Equity Ecosystem can be leveraged to support CBOs. I attended to learn more about the funding

opportunity with CETF to support CforAT's ongoing digital literacy efforts and assist our constituency.

5. The CETF Digital Inclusion Listening Session that I attended took place on April 30, 3036. I have attached the information provided to me for this session to this declaration. These materials include information on the CETF-Verizon MOU Implementation Framework, dated January 2026, and a presentation on the "CETF Digital Equity Ecosystem and Key Components," dated February 2026.
6. Based on what I learned at the information session I attended, as well as my background and understanding of the needs of people with disabilities and other vulnerable populations, it is my opinion that CETF's digital literacy funding model does not adequately support an evidence-based population-specific approach to digital literacy that would be effective for people with disabilities or for a number of other populations with specific needs. This is because the CETF model uses a one-size-fits-all approach; the per-person funding allocation is insufficient for students with complex needs; and the curriculum does not allow for in-depth, applied learning.
7. Rather than providing community-based organizations (CBOs) with flexible funding to design and deliver training tailored to their communities' needs, CETF's model requires grantees to use its curriculum, ecosystem, and prescribed training model. This limits CBOs' ability to apply their specialized expertise and established community relationships.
8. CBOs that apply for digital literacy training dollars do not have access to CETF's set curriculum before applying. While the full curriculum remains unknown, the brief list of topics provided during the information session I attended makes no mention of accessibility, individualized learning, or real-life application in project-based scenarios (which are known to result in deeper, long-lasting learning).
9. Based on the information provided in the listening session I attended, I believe that the pacing and sequencing of the CETF curriculum will not work for all participants. For example, the CETF curriculum requires that students learn about the parts of a computer and then receive assistance with setting up an email account. This sequencing places technical vocabulary before practical skills and would also require students to sign up for and participate in online classes without an email address.

10. Although modifications to the basic CETF curriculum may be requested by CBO grantees, CETF did not provide clear guidance regarding the approval process, criteria, or whether the substitution of entirely different curricula will be permitted. As a result, organizations such as CforAT that serve populations with unique needs face significant barriers to implementing the most effective approaches to support our constituents. I believe the same concern would apply to CBOs serving other distinct populations, including limited-English speakers, immigrants, and other groups.
11. Population-specific digital literacy programs consistently outperform one-size-fits-all approaches because they are designed around the needs, barriers, and learning styles of the communities they serve. National evaluations and program outcomes demonstrate that culturally and linguistically tailored training delivered through trusted community organizations produces higher participation, retention, skill acquisition, and real-world application of digital skills.
12. For example, UnidosUS's Digital Skills for Life program exceeded enrollment targets, achieved a 78% retention rate, and found that 70% of participants increased their digital skills while 82% applied those skills to employment or daily life.[1] This program targeted Latinx adults, specifically focused on low-income individuals, immigrant workers, and underrepresented BIPOC adults facing digital skills gaps. The program provided foundational digital literacy training to bridge the digital divide for Latino adults. The project developed a specialized, bilingual curriculum, funded local non-profits to deliver hands-on, community-based classes, and provided tailored support for this community.
13. Similar results have been documented among older adults, low-income seniors, and individuals facing significant health or social barriers, with targeted programs improving digital confidence, independence, social connectedness, and online safety outcomes. These findings are consistent with recommendations from the National Skills Coalition[2] and BroadbandUSA,[3] which emphasize trusted community messengers, individualized

[1] UnidosUS. (2023). *Unmasking inequity and empowering the future: Latinos and the digital divide*. UnidosUS Blog. https://unidosus.org/blog/2023/10/25/unmasking-inequity-and-empowering-the-future-latinos-and-the-digital-divide/

[2] The New Landscape for Digital Literacy, 2023 National Skills Coalition https://nationalskillscoalition.org/wp-content/uploads/2020/12/05-20-2020-NSC-New-Landscape-of-Digital-Literacy.pdf

[3] Pew Research Center. (2024). *Americans' Use of Mobile Technology and Home Broadband*.

support, and digital navigation services as essential components of effective digital inclusion efforts.

14. The limitations of the CETF model are particularly significant for people with disabilities. Research and best practices from disability advocacy organizations and digital inclusion programs consistently show that accessible digital literacy instruction requires individualized pacing, extended instructional time, and the integration of assistive technology training.
15. Individuals with disabilities frequently face a "double learning layer," requiring them to learn first learn how to operate assistive technologies such as screen readers, voice-control systems, alternative input devices, or accessibility settings before they can begin learning mainstream digital skills. Additional time is required for hardware configuration, accessibility customization, fatigue management, and skill reinforcement through repeated practice. These skills must be built throughout digital literacy training. Additionally, specific vulnerabilities (such as aides with access to computers and scams that target people with disabling conditions) must be addressed in digital safety trainings.
16. Effective digital literacy programs serving people with disabilities commonly require training delivered over multiple weeks or months, yet CETF's funding structure limits digital literacy courses to eight hours and does not provide sufficient flexibility for extended learning or ongoing support. Consequently, the populations with the greatest need for digital literacy assistance are least likely to benefit from the CETF framework.
17. The CETF funding structure further creates barriers for organizations serving high-need populations. I understand that CETF provides $400 per participant, with payment provided only after training is completed. This funding structure requires CBOs to front program costs and absorb the financial risk associated with participant attrition. This model disproportionately burdens smaller nonprofit organizations that often serve the most marginalized communities and lack the upfront funds to provide programming. It also incentivizes fast, generic training provided in a short amount of time with economical, asynchronous elements.
18. Research on adult digital literacy programs shows that completion rates vary substantially by delivery model, with self-paced online learning often achieving rates below 20%, whereas cohort-based and community-supported programs achieve around 75%. The

funding model set out by CETF expects CBOs to absorb the additional costs associated with the expected dropout rates.[4]

19. The risk associated with CETF's funding model is aggravated by the fact that CETF appears to encourage strategies that statistically have higher dropout rates, such as asynchronous learning, online instruction, and larger class sizes,[5] to fit within the extremely limited budget. These approaches are generally less effective, create accessibility challenges, and can exclude individuals who lack devices, broadband access, private learning spaces, or the ability to learn independently. They are particularly problematic for people with disabilities who require individualized instruction and ongoing support.
20. The limitations of CETF's model for digital literacy are especially concerning given the persistent digital literacy disparities affecting historically underserved communities. National data show that Black and Latino populations continue to experience lower levels of digital literacy, lower rates of home broadband adoption, and greater reliance on smartphones as their primary computing device. For example, the Urban Institute found that 48% of Black youth and 31% of Latinx youth have no or limited independent digital skills, compared to just 16% of White youth. The National Skills Coalition reports that approximately 50% of Black workers and 57% of Latinx workers lack robust foundational digital skills.[6] Additionally, Pew Research Center data show that only 69%

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[4] Reda Sadki (2025). Online learning completion rates in context: Rethinking success in digital learning networks. Reda Sadki: Learning to make a difference. https://doi.org/10.59350/qadwd-87309 and Perret, Sarah, Noy Alon, and John Torous. "A Digital Literacy Program for Adults with Mental Health Conditions." *Adult Literacy Education*, vol. 5, no. 1, 2023, pp. 49-54. https://www.proliteracy.org/resources/a-digital-literacy-program-for-adults-with-mental-health-conditions/

[5] Alarifi, B.N., Song, S. Online vs in-person learning in higher education: effects on student achievement and recommendations for leadership. *Humanit Soc Sci Commun* **11**, 86 (2024). And Jensen J, Smith CM, Bowers R, Kaloi M, Ogden TH, Parry KA, Payne JS, Fife P, Holt E. Asynchronous Online Instruction Leads to Learning Gaps When Compared to a Flipped Classroom. J Sci Educ Technol. 2022;31(6):718-729. doi: 10.1007/s10956-022-09988-7. Epub 2022 Aug 11. PMID: 35971508; PMCID: PMC9366838. And Antoniou F, Alghamdi MH, Kawai K. The effect of school size and class size on school preparedness. Front Psychol. 2024 Feb 26;15:1354072. doi: 10.3389/fpsyg.2024.1354072. PMID: 38596335; PMCID: PMC11002959.

[6] The New Landscape for Digital Literacy, 2023 National Skills Coalition https://nationalskillscoalition.org/wp-content/uploads/2020/12/05-20-2020-NSC-New-Landscape-of-Digital-Literacy.pdf

of Black adults and 67% of Latinx adults own traditional computers, compared with 80% of White adults.[7]

21. Despite decades of digital inclusion efforts, significant disparities remain by race, income, disability status, and language access, demonstrating that one-size-fits-all approaches have not been sufficient. Several factors are known to mitigate these disparities. In addition to affordable connectivity, the following factors have been proven essential: first, culturally relevant and targeted training: for example, a study of digital literacy programs tailored to the specific needs of adult learners and youth in Black and Latinx communities, integrating localized or community-specific digital challenges, was shown to be more successful than generic curricula.[8] Second, a feedback loop throughout courses where modifications are made to curricula in real time.[9] Additionally, smaller groups with a more individualized approach are essential for learners with more barriers.[10]
22. According to the materials provided at the Listening Session I attended, I understand that the CETF-Verizon agreement included funding of $22 million for "CETF Leadership, Management, and Administration," but only $2 million for digital literacy training. This is based on information in the spreadsheet sent to me by CETF and attached here as Exhibit 2.
23. While the CETF digital literacy training model may provide a cost-effective option for some participants, it does not reflect established best practices for serving individuals

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[7] Perrin, Andrew, and Erica Turner. "Home Broadband Adoption, Computer Ownership Vary by Race and Ethnicity in the U.S." *Pew Research Center*, 16 July 2021, www.pewresearch.org/short-reads/2021/07/16/home-broadband-adoption-computer-ownership-vary-by-race-ethnicity-in-the-u-s/.

[8] Abaz, Yekin, and Refik Nuredin. "Bridging the Digital Divide: Educational Informatics Strategies for Underserved Communities." *Vision International Scientific Journal*, Special Edition, June 2023, pp. 47-55

[9] The California Strategic Growth Council's Technical Assistance Toolkit (2024) https://sgc.ca.gov/technical-assistance/toolkit/step-6-developing-feedback-loop/

[10] Bernard RM, Borokhovski E, Schmid RF, Waddington DI, Pickup DI. Twenty-first century adaptive teaching and individualized learning operationalized as specific blends of student-centered instructional events: A systematic review and meta-analysis. Campbell Syst Rev. 2019 Jul 19;15(1-2):e1017. doi: 10.1002/cl2.1017. PMID: 37131463; PMCID: PMC8356521.

with complex or specialized needs and risks, excluding precisely those populations that require the most intensive digital literacy support.

24. CforAT is not opposed to work by CETF to develop a curriculum or an ecosystem to support other CBOs in working to enhance digital literacy in California. Our concern focuses on the fact that the specific model used by CETF does not serve our constituents and many others effectively. At the same time, this model, funded through settlements in Commission proceedings, is presented as a solution for the whole community. The result is that CETF has effectively established a monopoly on digital literacy funding using only a single model that may not be effective for many populations.

Exhibit 1

California Emerging Technology Fund

California Digital Equity Ecosystem

A Resource for All Digital Equity Champions and Program Leaders

California Digital Equity Ecosystem
A Resource for All Digital Equity Champions and Program Leaders
January 2026

Digital Equity Ecosystem Addresses 3 Barriers to Adoption by Low-Income Households

Successful Adoption programs must address the 3 Barriers to Adoption to get online all low-income households (John Horrigan 2013):

1. Cost (including the cost for both Internet service and an appropriate computing device).
2. Relevance (the reason why outreach in-language and in-culture by "trusted messengers"—the original "Digital Navigators"—is essential to explain to low-income unconnected HHs how they will benefit from being connected at home to the Internet).
3. Digital Literacy (no one will subscribe to service and acquire a device if they don't know how to use it to navigate the Internet).

The purpose of a Digital Equity Ecosystem is to provide the most cost-efficient approach to achieving these Overall Goals. A successful Adoption usually involves the following steps in assisting residents in unconnected households to: (a) understand the benefits of being connected online at home; (b) become aware of available affordable Internet service options; (c) acquire an affordable device for connecting to the Internet; (d) learn the foundational skills of digital literacy; and (e) select and sign up for home Internet service. It should be understood that community-based organizations (CBOs) who are the "trusted messengers" doing the outreach, assisting households sign up for home Internet service, and delivering the digital literacy training are "Digital Navigator"—CETF CBO Grantees have been doing the work of Digital Navigators for more than a decade. All programs supporting Digital Navigators focus on achieving Adoptions with grants to CBOs paid on performance per documented full Adoptions—the most meaningful outcome metric.

Digital Equity Ecosystem 12 Essential Components

The following are the 12 Essential Components of the California Digital Equity Ecosystem which CETF operates at scale to achieve the most cost-effective price points with the greatest impact. The Digital Equity Ecosystem ensures optimal benefit from CBOs and Digital Navigators to do outreach and deliver services in-language and in-culture—which is their specialized expertise—and to avoid "reinventing wheels" and minimize operational overhead costs. The 12 Essential Components begin with the highest productive foundational strategies to get the most people online and digitally-proficient with each successive Component building upon and augmenting the previous Component. The sequence of the Components matters to leverage investments and optimize impact. The Digital Equity Ecosystem can accommodate CBOs, non-profit organizations, and public agencies of all kinds and sizes—small or big, experienced or beginners—to incorporate Digital Inclusion into their existing operations where an established relationship exists.

- Direct Notification to Drive Enrollment in Affordable Internet Service
- Call Center to Enroll Households by CBOs In-Language and In-Culture
- Recruitment and Training of Digital Navigators
- Outreach In-Language and In-Culture by CBO Trusted Messengers
- Digital Literacy Training by CBO Digital Navigators (Synchronous) with Proficiency Assessment
- Online Digital Literacy Resources (Asynchronous) with Proficiency Assessment
- Affordable Computing Devices
- In-Person Enrollment Events
- Public Awareness Advertising
- Tech Support
- Grant Management
- Evaluation

- Direct Notification to Drive Enrollment in Affordable Internet Service: Texting, Emailing, Mailings in multiple languages (with dedicated telephone numbers for "interactive voice response" or IVR) by a "Credible Source" (State Agency, County, School, utility company) doing repeated notifications (>5-7 times needed to achieve 90% engagement), recognizing that today about 1,124 HHs must be notified to enroll 1 Unconnected HH. Cost ranges from nothing for texting and emailing up to $.98 per piece mailed. Direct Mail (DM) to targeted Census Blocks s a proxy for DN, but DN is about 3 times more effective. The "all-in" cost for DM, including targeting, printing, mailing, and management) is <$1.25 depending on volume. The State Departments of Health Care Services (DHCS) and Social Services (CDSS), and San Diego and Santa Barbara Counties currently do DN without a charge. DHCS adds a message on the first page of an annual mailer to all Medi-Cal recipients so that it was seen and not lost in a mailed packet (bill stuffers generally are not effective). CDSS sends emails and text messages to CalFresh recipients. The DN collaborations with Counties cost $.80-$.90 per piece. Each DN communication includes a unique IVR number for the Call Center. CBO personnel answer in-language and conduct 3-way calls with Internet Service Providers (ISPs) to ensure clear communication and prevent upselling (while providing information about all options). CBO community outreach may use a local telephone number for their organization, but cost-effective scale requires repeated stateside DN.

- Call Center to Enroll Households: Dedicated IVR lines for each communication channel transfer interested HHs to CBO Grantees whose staff serve as Digital Navigators for immediate assistance in-language and in-culture to enroll Unconnected, Underconnected, and Unsustainably Connected low-income households in lower-cost offers, including LifeLine, and refer them to Digital Literacy Training resources. Performance standards for CBO Grantees receiving referrals from a Call Center coupled with active management and coaching are critical to high-quality service for households receiving Direct Notifications and needing assistance. CETF currently compensates Call Center Grantee CBOs at $75 per Enrollment. Call Center Grantees receive an additional $25 per HH registered for Digital Literacy Training who attends the first session. CETF just completed a California Public Utilities Commission (CPUC) California Advanced Services Grant (CASF) grant to enroll 20,000 Unconnected HHs and submitted an Application at the end of December 2025 to renew a grant for another 25,000 Unconnected HHs. If awarded (decision not expected until June), that grant will underwrite enrollments of Unconnected HHs in affordable offers and the CPUC LifeLine Pilot Project. However, CASF currently compensates Grantees for enrolling only Unconnected HHs. CETF welcomes ISPs to partner with CETF to market LifeLine to eligible HHs currently on market-rate plans (Unsustainably Connected HHs.

- Recruitment and Training of Digital Navigators: CETF recruits, trains, and manages CBOs to serve as "Digital Navigator Hubs" trains their personnel as Digital Navigators who are responsible for achieving Adoptions. This approach enhances local capacity so that CBOs can seek additional funding on their own. CETF also trains personnel from Public Agencies (social workers, librarians), healthcare providers (intake specialists, Promotoras), and higher education institutions (students in specialized courses-programs such as College Corps) to serve as Digital Navigators or "Digital Resource Experts" who can refer interested clients to Digital Navigator Hubs. The CETF curricula for training Digital Navigators (8 module for 20 hours) was developed in collaboration with the Rural Prosperity Center and Tech Exchange, and accepted by California State University, Chico (CSUC). Digital Navigators completing the training receive certification from CSUC, which also adds to their workforce training and future career growth. An ideal training cohort is 15-25 Digital Navigators. The cost per cohort if grant funds are not available is $5,500 (plus $250 per hour for make-up sessions). CETF also can provide online coaching and periodic Learning Communities (Community of Practice) Workshops. In addition, CETF can orient

- Outreach In-Language and In-Culture by Trusted Messengers: Direct Notification by a Credible Source needs to be augmented and reinforced by Outreach in-language and in-culture by CBOs (Digital Navigators) who are "Trusted Messengers" in their communities. A Trusted Messenger is able to address the "3 Barriers" to explain the value proposition for low-income household in subscribing to affordable Internet service so they understand how it will save time and money. Outreach in-language and in-culture at scale needs to be supported with flier templates in multiple languages that can be customized easily with local CBO and/or Public Agency logos. CETF develops and manages flier templates in conjunction with maintaining the Internet For All Now (IFAN) website, including updating the Tool Kit available to CBOs, Public Agencies, and the public. It is supported by the Director of Policy and Communications and contract partners SAESHE, California Advocacy, and Winning Strategies.

- Digital Literacy Training by CBO Digital Navigators (Synchronous) with Proficiency Assessment: All households enrolled by CBO Digital Navigators through the Get Connected Call Center are referred to Digital Literacy Training resources: (a) CBO Grantees who deliver Digital Literacy Training for the first 3 Elements of the UNESCO Framework for >6 hours of training (2 hours per Element) in-person or virtually (synchronous); and (b) Online Learning courses and lessons (asynchronous). CPUC CASF Adoption Account Grants require 8 hours of documented training, with up to 4 hours being asynchronous. CETF provides a Base Curricula and Facilitator Guide for each Element along with a standardized Digital Literacy Skills Proficiency Self-Assessment. CBO Grantees are able to rely on the Base Curricula as sufficient or submit their own to be approved by CETF to ensure that the content aligns with the essential skills (5 Skills per Element which have been identified by CBOs and their customers). The standardized Digital Literacy Skills Proficiency Self-Assessment is vital to measuring results qualitatively and comparably among all CBO Grantees across the state. CBO Grantees who receive referrals from the Call Center after a household has been enrolled in an affordable Internet service plan can then use their own CPUC CASF Grant or other funding to complete the Digital Literacy Training. Experience has shown that the most powerful incentive for low-income households to complete Digital Literacy Training is the opportunity to earn a computing device at the end, which requires an effective interface with the availability of affordable computing devices. The Directors of Adoptions and Digital Inclusion lead and manage these Components.

- Online Digital Literacy Resources with Digital Proficiency: Online asynchronous learning is an option for households not able or willing to participate in synchronous Digital Literacy Training and is an added resource for those who do complete Digital Literacy Training. CETF has collaborated with the Public Library Association (PLA) to license its DigtialLearn platform to customize an Online Digital Literacy Program for the convenience of the customer and to augment Digital Literacy Training by CBOs. It is a PLA DigitalLearn sub-website *GetConnected!* with URL getconnected.digitallearn.org. Content currently is in English and Spanish;
  - English: 31 Courses, 132 Lessons
  - Spanish: 25 Courses, 134 Lessons

  Other languages, beginning with Vietnamese, will be added next Fiscal Year. CETF also worked with PLA and Davis Research to establish a separate website to measure the effectiveness using the Digital Literacy Skills Proficiency Self-Assessment. The first 10,000 participants in the Online Digital Literacy Training Self-Assessment will receive a $25 gift card. The URLs for the Self-Assessment website are:
  - myinternetlearning.com
  - aprendamosenlinea.com

- Affordable Computing Devices: CBO Grantees provide information to Adopter households about sources for affordable computing devices, including experienced non-profit refurbishers in 5 regions in California, most of which have been CETF Grantee partners. CETF budgets an average of $300 per device—refurbished laptops @ $175-$275 (depending on the device, condition, software) and a new Chromebook @ $250—plus a protective cover @ $15). The most powerful incentive for a low-income household to participate in Digital Literacy Training is the award of a computer upon completion and verification of digital proficiency. Thus, including a new computing device with a protective cover, the total cost for an Adoption is budged for funders, such as Community Foundations and Financial Institutions, at an "all-in" cost of $800.

  CETF and partners launched in 2025 the California Green Technology Initiative (GTI) to decrease the volume of retired computing devices being dismantled-destroyed and/or shipped off-shore and to increase the supply chain remaining in state to help close the Digital Divide. GTI is endorsed by Governor Gavin Newsom and Former Governor Arnold Schwarzenegger along with the CPUC, CDT, elected officials, and major statewide business organizations (California Chamber of Commerce, California Manufacturers and Technology Association, and California Hispanic Chambers of Commerce). It has the dual benefits of reducing impacts on the environment while advancing Digital Equity. The Green Technology Initiative makes it easy for all employers—public and private—to donate retired computers through 2 opportunity channels that are very easy to use:
  - Community Non-Profit Refurbishers
  - CETF-Revivn Partnership

  CETF also has established a fund for financial institutions to make donations to generate additional resources for which they will receive Community Reinvestment Act (CRA) credit. CETF collaborated with Rise Economy (formerly California Reinvestment Coalition) to publish a report on how financial institutions can bridge the Digital Divide.

- In-Person Enrollment Events: CETF assists and coaches CBOs to organize and conduct their own In-Person Enrollment Events in their target community, often joining existing community festivals and fairs. CETF developed a Tool Kit with templates for Intake Survey, Enrollment, and Questionnaire for enrollees receiving computing devices through random drawings. The Get Connect Call Center also functions as a support resource for In-Person Enrollment Events.

- Public Awareness Advertising: Public Awareness Advertising augments and reinforces Direct Notifications, increasing the receptivity of messages. Public Awareness Advertising can be done by ISPs (for their own affordable offers), Public Agencies, and non-profit organizations. CETF has commissioned more advertising about affordable Internet service offers than any other organization in California and has monitored the results of working through community and ethnic channels. A benchmark for Public Awareness Advertising is the 2020 Total Count Census Campaign for which the State of California appropriated $50M. CETF estimates that a beginning "critical mass" amount is $10M committed by ISPs to place their own ads in non-traditional community and ethnic channels (CETF and partners can provide data about past results--impressions and traffic generated to the Call Center for their consideration). CETF recommends that the Legislature authorize the CPUC to invest $20M from the LifeLine program (phased with initial $10M investment evaluated to refine and target use of $10M balance) to increase awareness about LifeLine timed to follow and augment Direct Notification by State Agencies.

- Tech Support: Tech Support is needed as a referral resource for CBO Grantees who often are contacted by the household Adopters that they assisted when there is a problem with the computing device. It is not cost-effective for each CBO to have Tech Support expertise in-house. Tech Support is a logical extension of community services for refurbishers, which also are conducting workforce skills development as part of their operating model. CETF also has trained high-school students as part of their curricula to provide Tech Support to CBOs. This student model also can be adapted by Community Colleges. CETF expects >5% of Adopters to need Tech Support and recommends planning to accommodate <10%

- Grant Management: Grant Management involves recruiting and vetting CBOs (including conducting informational workshops), preparing and processing Grant Agreements, monitoring and coaching Grantees, conducting Learning Communities (Communities of Practice), collecting and auditing Grantee performance (including Adoption Master Rosters), and processing Grant Payments. CETF does Grant Management at a relatively-low cost (less than 10% with decreasing percentages with volume of funds flow-through) because Grants are performance-based and management processes have been established and refined through experience over time to support Grantees in achieving results. CETF cumulative overall "Support" expenditures (a measure of overhead) for the last 18 years according to independent annual audits is 7%.

- Evaluation: Evaluation must be integrated into all operations by collecting essential data from the beginning to support "continuous improvement" with tools to make it as easy as possible for Grantees to submit reports and by compiling data as feedback to Grantees. There should be Monthly Summaries and Quarterly Progress Reports to ensure pace of Adoptions is on track to achieve the obligation target. Evaluation data and reports are used in Learning Communities to invite peer coaching and foster peer accountability.

Summary of CETF Existing Assets and Resources to Support Digital Equity Ecosystem

The California Emerging Technology Fund has developed a cost-effective Digital Equity Ecosystem that is operated as a seamless continuum of supports for CBOs so they can focus on outreach and delivery of services in-language and in-culture to reach the most low-income households. The following are the CETF assets and resources to support the Digital Equity Ecosystem:

- Working Relationships Statewide with Spectrum of Community, Public, and Private Partners
- Operations at Scale for Cost-Effective Implementation and Grant Management
- Ability to Partner with New CBOs as Additional Trusted Messengers to Build Local Capacity
- Understanding and Experience in Planning and Managing Direct Notification
- Tool Kit and Templates for Affordable Internet Service Offers in Multiple Languages
- Get Connected Call Center with Ability to Accommodate Multiple Communications Channels
- Curricula to Train Digital Navigators and Coach to Success
- Digital Literacy Training Curricula and Facilitator Guides (UNESCO Framework 6 Elements)
- Digital Literacy Skills Proficiency Self-Assessment for Common Metrics
- Online Learning Platform with Curriculum Content and Self-Assessment Process
- Experience in Organizing and Supporting In-Person Enrollment Events Statewide
- Knowledge in Public Awareness Advertising in Community and Ethnic Media Channels
- Established Strategies to Generate Revenue Streams for Computing Devices
- Data Analysis to Benchmark Costs and Project Possible Impacts
- Deep Experience in Integrating and Managing All Components of Digital Equity Ecosystem

Updated January 2026

California Emerging Technology Fund
Overview of Digital Literacy Framework
Digital Equity Ecosystem

Introduction

The purpose of this document is to provide an overview of Digital Literacy as a component of the Digital Equity Ecosystem, including the definition and content rubrics from credible sources to establish a framework to standardize proficiency assessments and develop curricula for training low-income households to get them connected to the Internet, referred to as an "Adoption." There are 3 primary barriers to achieving an Adoption for low-income households: (1) Cost; (2) Relevance; (3) Digital Literacy. "Cost" includes both the price of home Internet service and acquisition of a computing device appropriate for the household. For example, a household with children has different needs than one with only adults: a family with children in school need a computing device with a keyboard and larger screen for education whereas adults often want to use only a smartphone. "Relevance" requires outreach in-language and in-culture by trusted messengers to explain the importance of being online and prioritizing limited income to pay for Internet service and a computing device. "Digital Literacy" is essential because households need to know how to use the device and navigate the Internet to make the decision to subscribe to Internet service.

Overview

The California Emerging Technology Fund (CETF) identified Digital Literacy as a fundamental strategy to close the Digital Divide through increased broadband adoption in its original 2007 Strategic Action Plan. In 2008 CETF established a Digital Literacy Initiative and convened stakeholders in collaboration with the Governor's Office to review all existing Digital Literacy standards to recommend a coherent policy and framework for Information and Communications Technology (ICT) Skills. CETF published a Summary Report reflecting stakeholder consensus titled *California Basic Elements of ICT Digital Literacy – Continuum of Assessment Skills* which embraced the United Nations Educational, Scientific and Cultural Organization (UNESCO) definition of Digital Literacy as "a lifelong learning process of capacity building for using digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, create and communicate information in order to function in a knowledge-based economy and society" accompanied by the following Framework of Basic Digital Literacy with 6 Elements.

In 2009 CETF secured a Governor's Executive Order (S-06-09) on Digital Literacy and ICT Skills which required the California Technology Agency to prepare an action plan that reaffirmed the Framework in the 2010 report titled *Digital Literacy Pathways in California*. The Executive Order remains in force today.

UNESCO FRAMEWORK FOR DIGITAL LITERACY

BASIC ELEMENTS OF DIGITAL LITERACY		
Elements	**Definitions**	**Competencies**
Access	**Knowing about and knowing how to collect and/or retrieve information.**	**Search, find, and retrieve information in digital environments.**
Manage	**Applying an existing organizational or classification scheme.**	**Conduct a rudimentary and preliminary organization of accessed information for retrieval and future application.**
Integrate	**Interpreting and representing information - summarizing, comparing, and contrasting.**	**Interpret and represent information by using ICT tools to synthesize, summarize, compare, and contrast information from multiple sources.**
Evaluate	**Making judgments about the quality, relevance, usefulness, or efficiency of information.**	**Judge the currency, appropriateness, and adequacy of information and information sources for a specific purpose (including determining authority, bias, and timelines of materials).**
Create	**Generating information by adapting, applying, designing, inventing, or authoring information.**	**Adapt, apply, design, or invent information in ICT environments (to describe an event, express an opinion, or support a basic argument, viewpoint or position).**
Communicate	**Communicate information persuasively to meet needs of various audiences through use of an appropriate medium.**	**Communicate, adapt, and present information properly in its context (audience, media) in ICT environments and for a peer audience.**
Note: International and national digital literacy frameworks and assessment instruments all share these common elements.		

CETF considers the first 3 Elements (Access, Manage, Integrate) foundational for Digital Literacy training for unconnected residents and the second 3 Elements (Evaluate, Create, Communicate) as integral to Education and Workforce Training Programs with STEM (Science, Technology, Engineering, and Math) and/or ICT Skills curricula.

Relationship of UNESCO Framework to Other Rubrics

The UNESCO definition of Digital Literacy and the Framework with the 6 Elements aligns well with other rubrics set forth by respected professional organizations. The following resources and rubrics have been reviewed for comparison to the UNESCO Framework:

- California Department of Education (CDE) and State Board of Education (SBE) Common Core State Standards and Local Control Funding Formula (LCFF) 8 Priorities
- International Society for Technology and Education (ISTE)
- American Library Association
- Partnership for 21st Century Learning
- CDE and SBE Computer Science Standards
- CDE California AfterSchool Network (CAN) Program
- California Workforce Development Board SlingShot Initiative for ICT Skills

CDE and SBE Common Core State Standards

The Common Core State Standards (CCSS) set Digital Literacy knowledge and skill expectations for students, broken down into 3 categories with aligned skill set building objectives as summarized in the chart below:

Digital Literacy Categories According to the CCSS K-12 Technology Scope and Sequence Document

Digital Literacy Categories	
Demonstrate proficiency in the use of computers and applications as well as an understanding of the concepts underlying hardware, software, and connectivity.	Basic Operations Word Processing Spreadsheet Multimedia and Presentation Tools
Demonstrate the responsible use of technology and an understanding of ethics and safety issues in using electronic media at home, in school and in society.	Acceptable Use, Copyright and Plagiarism
Demonstrate the ability to use technology for research, critical thinking, decision-making, communication and collaboration, creativity and innovation.	Research and Gathering Information Communication and Collaboration

Note: Adapted from the CCSS K-12 Technology Scope and Sequence Document (LBUSD, n.d.)

International Society for Technology and Education

The International Society for Technology and Education (ISTE) identifies 14 Essential Conditions as critical elements necessary to effectively leverage technology for learning that provide a research-backed framework to guide system-wide change.

1. Shared Vision	8. Technical Supports
2. Empowered Leaders	9. Curriculum Framework
3. Implementation Planning	10. Student-Centered Learning
4. Consistent and Adequate Funding	11. Assessment and Evaluation
5. Equitable Access	12. Engaged Communities
6. Skilled Personnel	13. Support Policies
7. Ongoing Professional Learning	14. Supportive External Content

ISTE also has promulgated standards for administrators, teachers, students and the community. The Student Standards are relevant for considering digital proficiency standards for residents. They are intended to “empower” the individual as the “driver” of the process.

Standard	Description of Observed Demonstration of Skills
1. Empowered Learner	Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
2. Digital Citizen	Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
3. Knowledge Constructor	Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
4. Innovative Designer	Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
5. Computational Thinker	Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
6. Creative Communicator	Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
7. Global Collaborator	Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

American Library Association

The American Library Association (ALA) recognizes that digital literacy, as with information literacy, requires skills in locating and using information in critical thinking. ALA further states that digital literacy involves knowing digital tools and using them in communicative, collaborative ways through social engagement. The ALA Digital Literacy Task Force defined digital literacy as "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills."

Partnership for 21st Century Learning

The Partnership for 21st Century Learning, a national advocacy organization that promotes the integration of technology in education, classifies Digital Literacy along 3 dimensions:[i]

- Information Literacy: Ability to efficiently access, critically evaluate, innovatively utilize, and successfully manage information for various purposes while adhering to ethical and legal standards.
- Media Literacy: Ability to examine the function of media and effectively analyze and utilize messages received through various forms of media.
- Information Communication Technology: Ability to successfully utilize digital technologies as a tool to research, organize, evaluate and communicate information

Diverse Statewide Experience Informs Essential Digital Literacy Proficiency Skills

CETF works statewide with a network of community-based organizations (CBOs) and public agencies to increase Digital Literacy. Since 2008 CETF Grantees and Partners have provided Digital Literacy Training to than 1M people, including: (a) delivering stand-alone training courses in community facilities; (b) assisting unconnected households become sufficiently digitally-proficient to sign up for an affordable home Internet service and acquire a computing device as part of achieving adoptions; (c) training parents of students participating in School2Home; (d) managing the City of San José Digital Inclusion Partnership Grants that require digital skills proficiency as part of achieving adoptions; (e) training parents of students receiving 25,000 Chromebooks in 2020-2021 purchased by Frontier Communications; (f) developing online training for T-Mobile Lifeline customers; and (g) supporting Promotoras with customized curricula for Telehealth. Drawing upon this experience, CETF developed the Self-Assessments for each of the 3 Elements in the UNESCO Framework that focus on the most essential Digital Literacy Skills reported by CBOs and participants in training programs.

In the meantime, UNESCO published a new rubric of Digital Literacy Competencies. In 2018 the UNESCO Institute for Statistics (UIS), the UN depository for global statistics in education, science, technology, culture and communications, began development of a new methodology for measuring the "percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skills." To this end, UIS conducted comprehensive syntheses of existing frameworks and in-depth consultations to obtain expert feedback on the proposed Competencies. This work is documented in Information Working Paper No. 51, available at: https://bit.ly/2VsJwqI**.** The UIS UNESCO Competencies Framework delineates 5 Competence Areas and related Competencies for use worldwide in training and certification programs. The 5 Competence Areas are: (1.0) Information and Data Literacy; (2.0) Communication and Collaboration; (3.0) Digital Content Creation; (4.0) Safety; and (5.0) Problem Solving. UIS also added an optional Area (0.0) related to devices, hardware and software operations, and a graphical user interface. Each Competence Area has 3-8 Competencies, each more complex than the previous one. The Competencies emphasize personal data security and social media digital identity and span the Digital Literacy 3 Elements. Attached is a matrix showing the relationship of the Competencies to the Framework 6 Elements (Appendix 1).

CETF incorporated the new Competencies Framework into an updated Self-Assessment Tool structured with 5 Questions for each of the 3 Elements to focus on the 15 most essential Skills. The Assessment has a 5-point rating scale (with symbols recommended by Grantees to help overcome language barriers) for sufficient diagnosis and differentiation of Digital Literacy Proficiency to appropriately group participants for Courses and tailor Training. Attached is the Self-Assessment Tool for the 3 Elements along with examples of Practice Exercises that serve as Observable Skills to verify Proficiency (Appendix 2). A standardized Assessment Tool provides the basis for evaluating and comparing performance among many different Digital Literacy Training programs statewide. It also accommodates the variations among CBOs who have tailored their Digital Literacy Training for the communities they serve while being able to collect common data for evaluation.

Digital Literacy Curricula

CETF developed Digital Navigator Training Curricula and Digital Literacy Course Curricula that align with the 6 Elements of the UNESCO Framework for Digital Literacy that are available at no cost to Grantees and Partners across California. Digital Literacy Courses are available in synchronous and asynchronous learning modalities to support the diverse needs and preferences of learners and include additional information, presentations, and activities about how to use mobile phones and the importance of cyber security.

Digital Navigator Tool Kit

CETF developed a Tool Kit to train Grantees and Partners to be Digital Navigators by providing them with the knowledge and skills needed to assist community members in a culturally-sensitive way to effectively access and utilize digital resources. This includes connecting to the Internet, using digital devices, and leveraging online tools and services. Additionally, CETF provides individual coaching and quarterly Learning Communities to share best practices and support Grantees and Partners in achieving their Digital Inclusion goals and outcomes.

Digital Literacy Courses

In collaboration with Parent University, based in Fresno in the San Joaquin Valley, CETF developed a 12-hour series of Digital Literacy Courses aligned to the UNESCO Framework for households needing or wanting both (a) basic Digital Literacy and/or (b) introduction for workforce training. The first 3 Courses (6 hours of training) are foundational for unconnected residents who need basic Digital Literacy Training (based on their Pre-Self-Assessment score), and are aligned with the first 3 Elements (Access, Manage, Integrate) of the UNESCO Framework. The second 3 Courses (6 hours of training) are for learners who score proficient (15 points or higher) on their Pre-Self-Assessment, and are ready for more intermediate/advanced Digital Skills Training that prepares them for the workforce. These Courses are aligned with the last 3 Elements (Evaluate, Create, Communicate) of the UNESCO Framework. The Courses are designed to be delivered in a live, interactive, group setting (synchronous learning modality) and are available in English, Spanish, and Vietnamese. Attached are the Facilitator Guides that outline the course learning objectives and targeted outcomes for each class (Appendix 3).

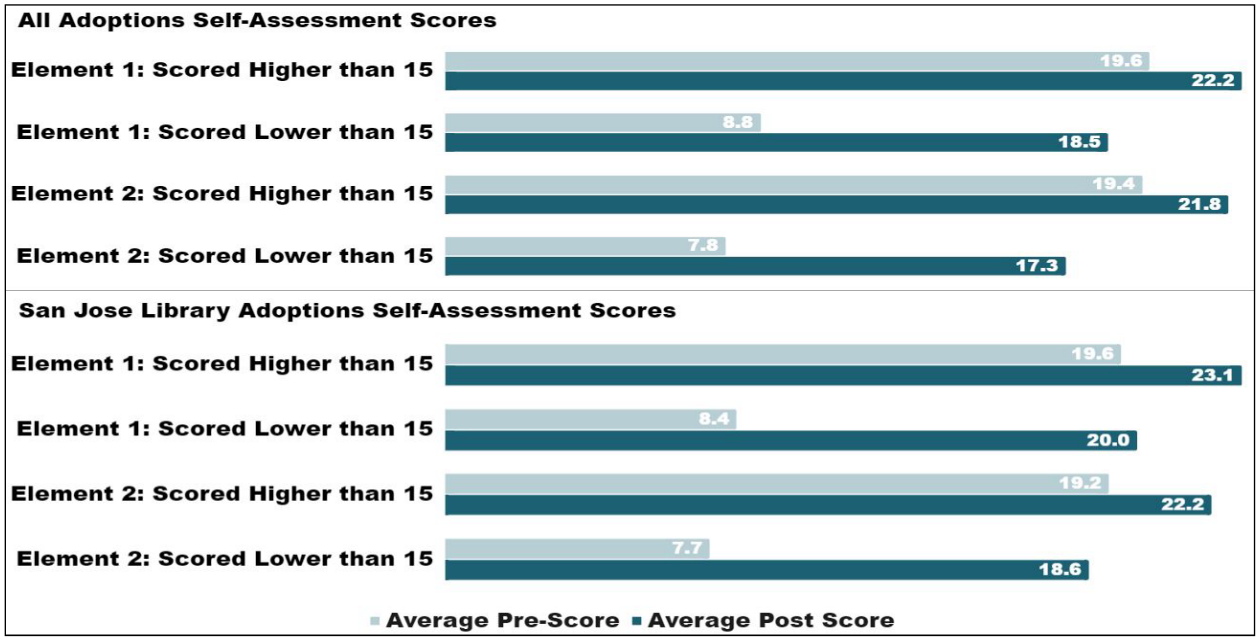
DigitalLearn Online Courses

CETF adopted the Public Library Association (PLA) DigitalLearn platform and branded a sub-site called *GetConnected! California* to provide free, online, self-paced Digital Literacy Courses (asynchronous learning modality) for households who prefer this option. To date, 30 Courses have been customized to align with the 6 Elements of the UNESCO Framework, and learners are incentivized to complete a Pre-and-Post Self-Assessment to measure their Digital Literacy Proficiency. The courses are easily accessible at *getconnected.digitalearn.org*, and are available in English and Spanish; additional languages will be available soon, beginning with Vietnamese. Attached is a flier for community members with simple instructions about how to access the site and establish an account using their phone number (Appendix 4).

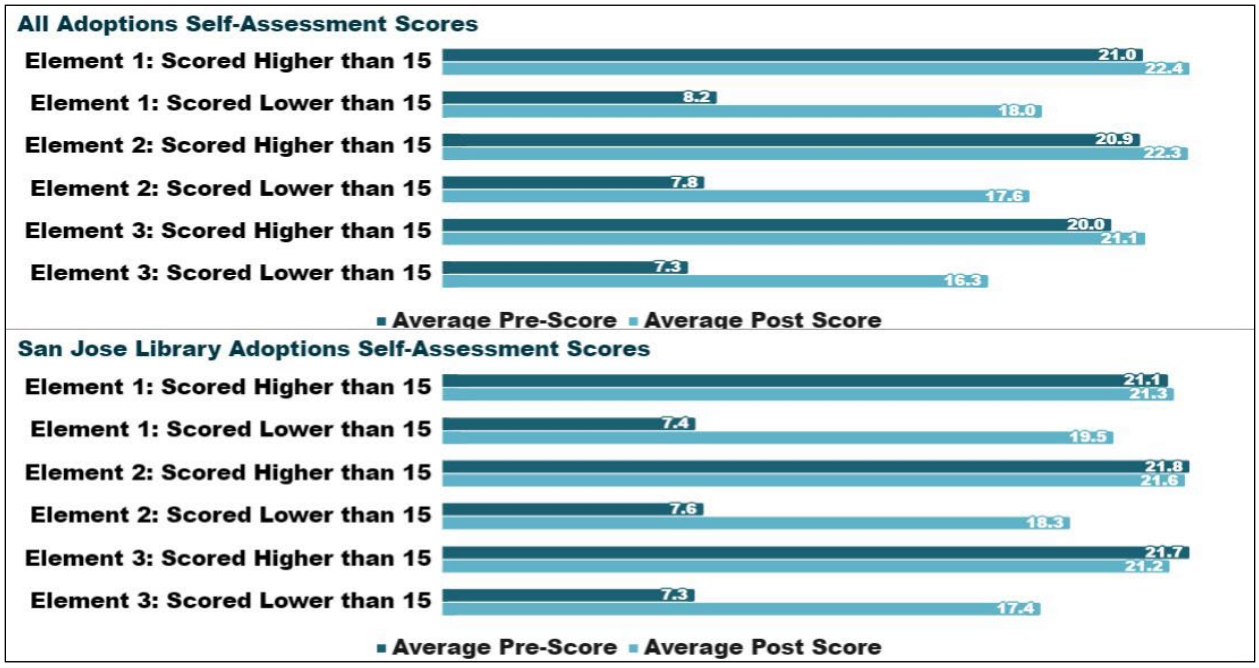
Digital Literacy Training Impact Summary

Since April 1, 2020, CETF has trained and coached 4 cohorts of Grantees (15 CBOs or public organizations) to provide up to 6 hours of basic digital literacy training using our Digital Literacy Curricula and Assessments that aligned with the first 3 Elements (Access, Manage, Integrate) of the UNESCO Framework. Grantees provided Adopters with a Pre Self-Assessment to determine their proficiency and provided training to households who needed or wanted to refresh their basic digital literacy skills. In total, 3,897 Adopters participated in digital literacy training that resulted in measurable increases in proficiency as captured by the Post Self-Assessment scores. Adopters who scored less than proficient on their Pre Self-Assessment increased their Post Self-Assessment score by an average range of 7.1 to 9.6 points after participating in training. Adopters who scored proficient on the Pre Self-Assessment increased their Post Self-Assessment score by an average range of 1.1 to 2.5 points after participating in training.

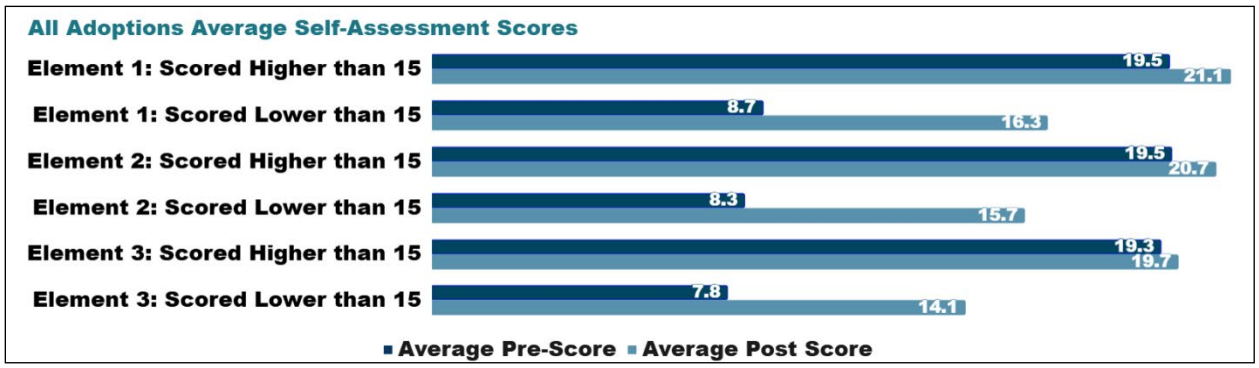
Round 1 Cohort: 2020-2021 – SJDIP



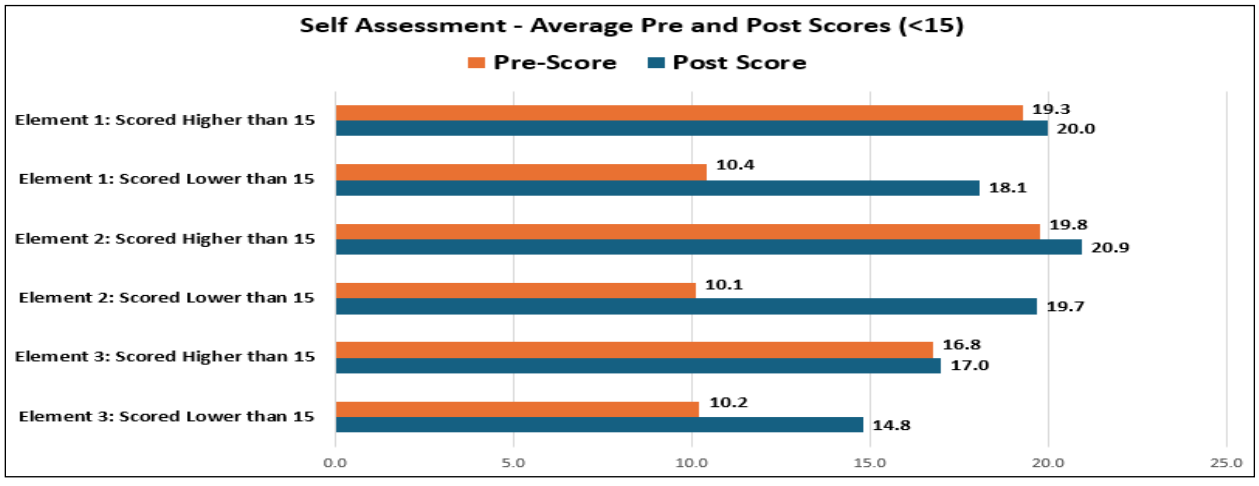
Round 2 Cohort: 2021-2022 – SJDIP

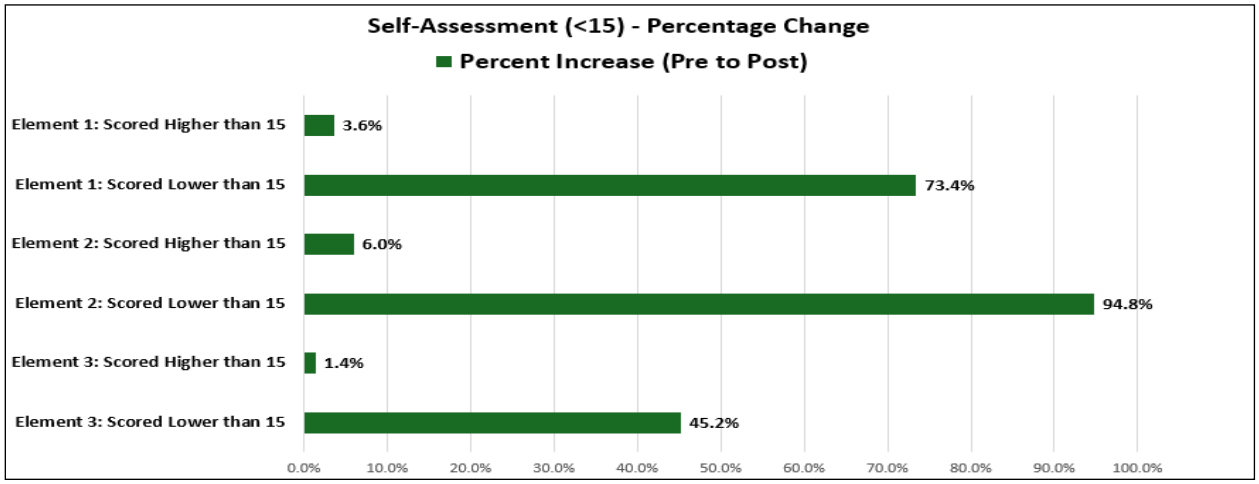


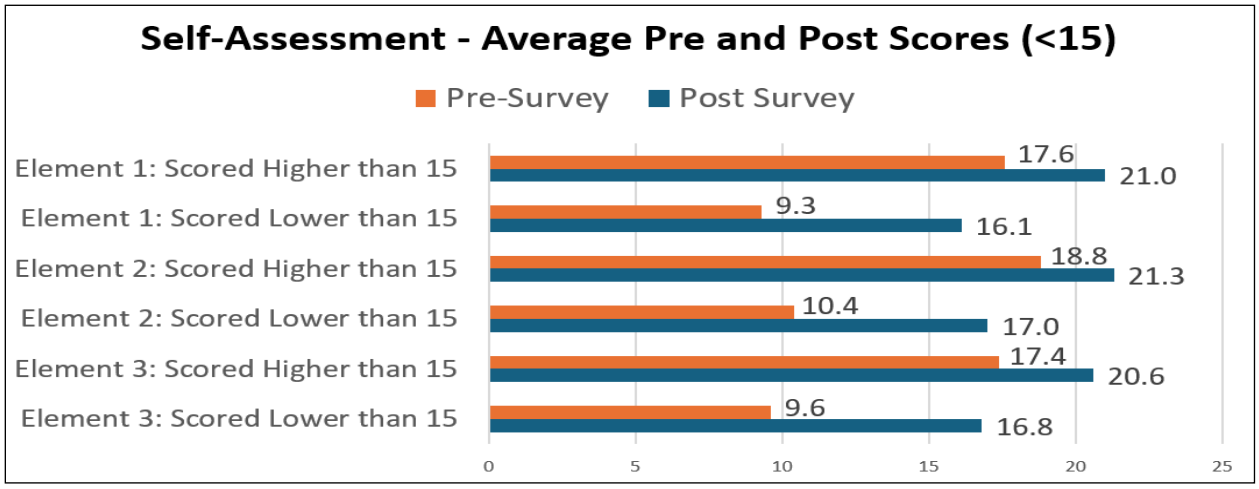
Round 3 Cohort: 2022-2023 – SJDIP

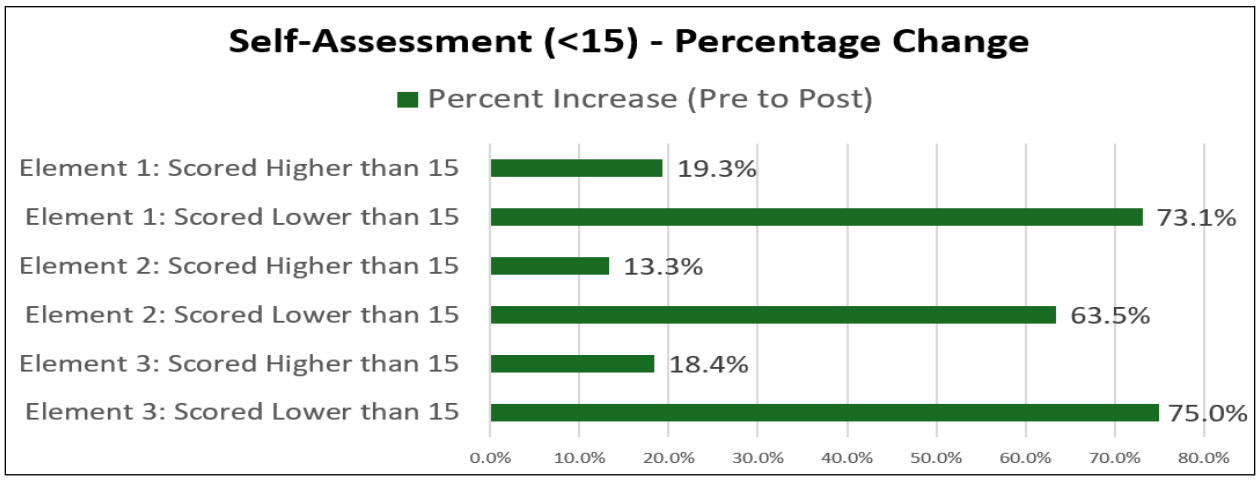


Round 4 Cohort: 2023-2024– Kaiser Permanente and AT&T

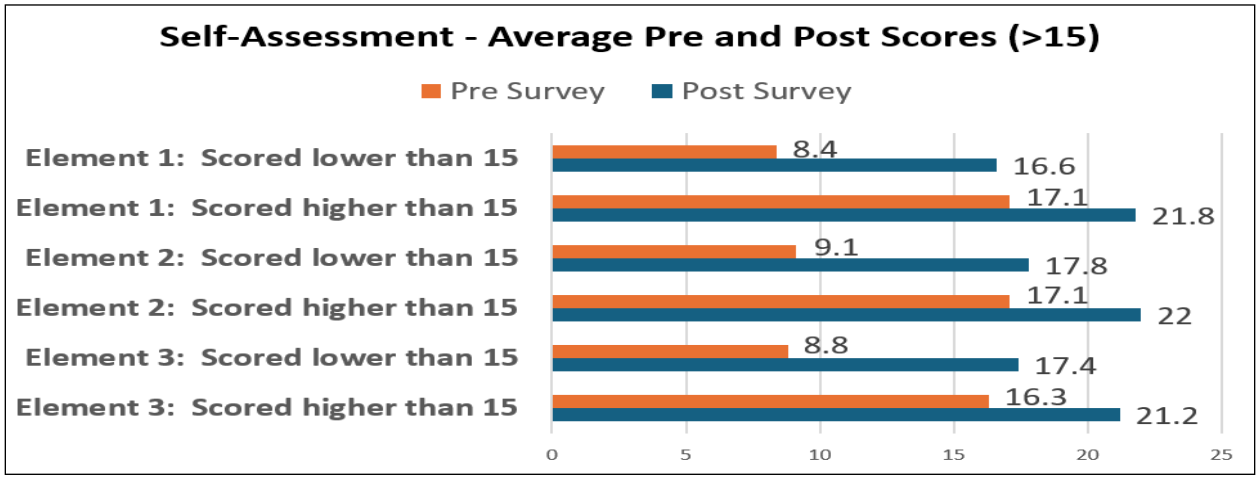


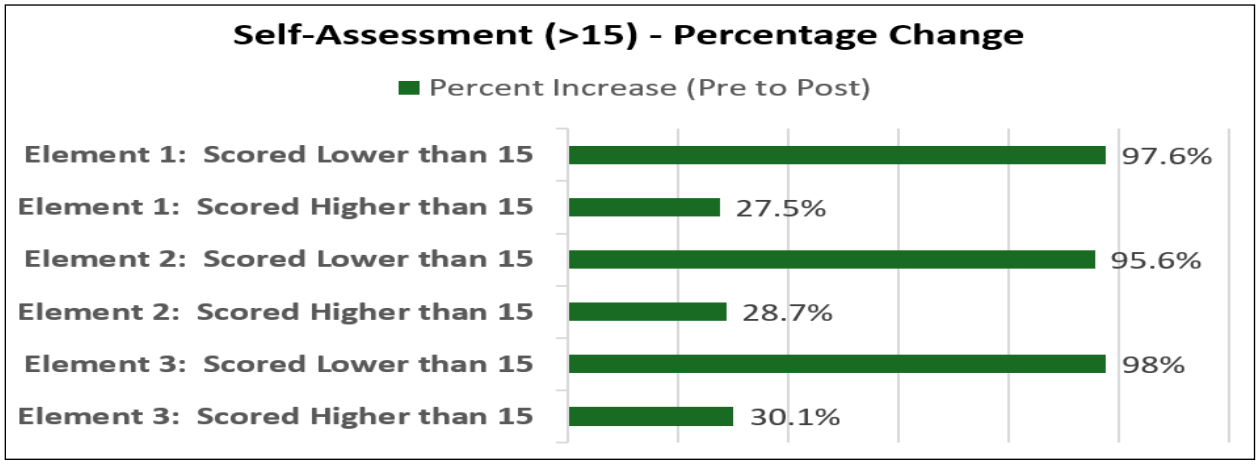

Self-Assessment (<15) - Percentage Change
Percent Increase (Pre to Post)
Element 1: Scored Higher than 15
3.6%
Element 1: Scored Lower than 15
73.4%
Element 2: Scored Higher than 15
6.0%
Element 2: Scored Lower than 15
94.8%
Element 3: Scored Higher than 15
1.4%
Element 3: Scored Lower than 15
45.2%
0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0% 70.0% 80.0% 90.0% 100.0%

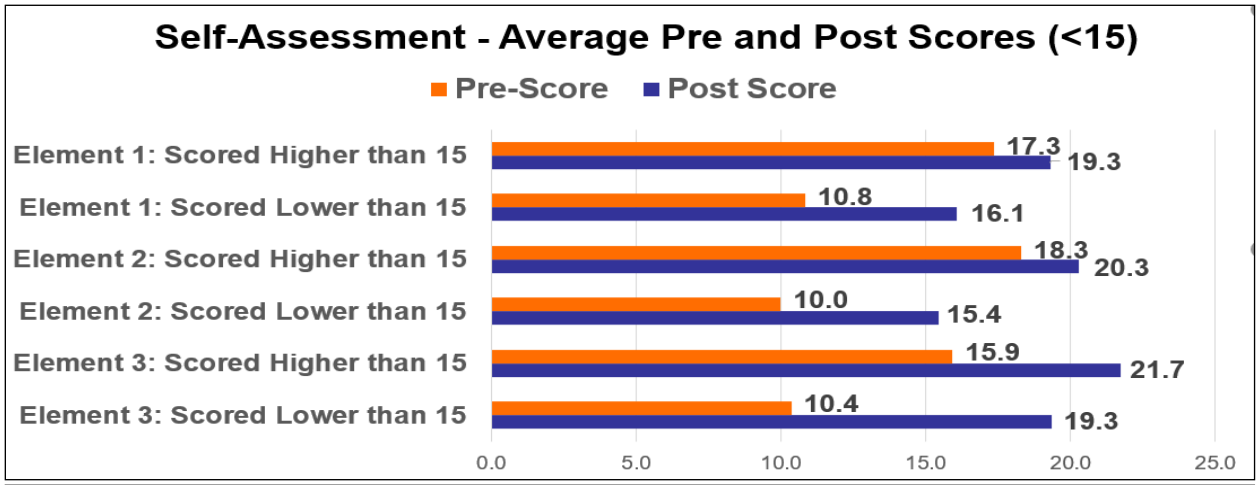

Self-Assessment - Average Pre and Post Scores (<15)
Pre-Survey
Post Survey
Element 1: Scored Higher than 15
17.6
21.0
Element 1: Scored Lower than 15
9.3
16.1
Element 2: Scored Higher than 15
18.8
21.3
Element 2: Scored Lower than 15
10.4
17.0
Element 3: Scored Higher than 15
17.4
20.6
Element 3: Scored Lower than 15
9.6
16.8
0 5 10 15 20 25

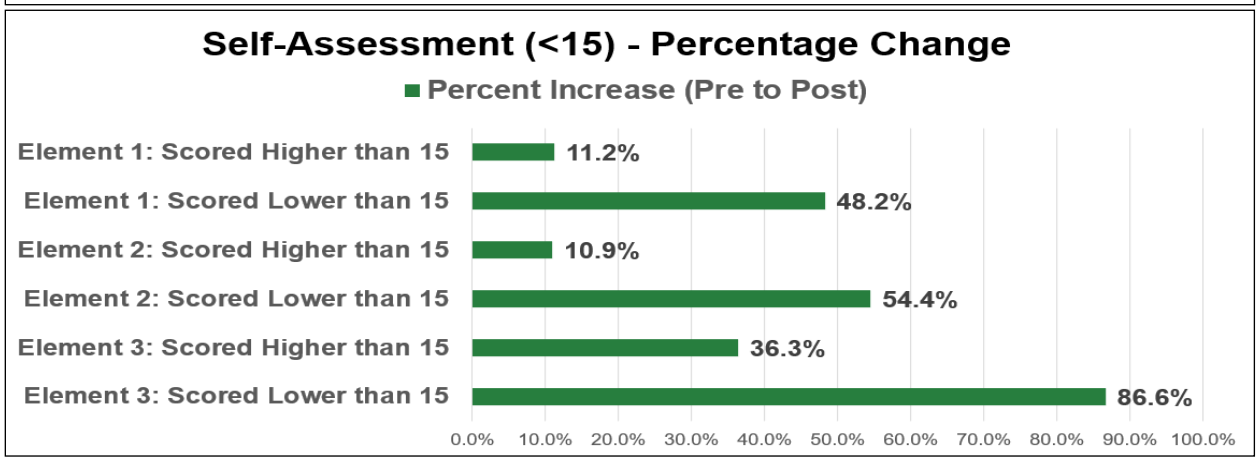

Self-Assessment (<15) - Percentage Change
Percent Increase (Pre to Post)
Element 1: Scored Higher than 15
19.3%
Element 1: Scored Lower than 15
73.1%
Element 2: Scored Higher than 15
13.3%
Element 2: Scored Lower than 15
63.5%
Element 3: Scored Higher than 15
18.4%
Element 3: Scored Lower than 15
75.0%
0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0% 70.0% 80.0%

Round 5 Cohort: 2024-2025 – 3 CASF Grants and Kaiser Permanente






Self-Assessment - Average Pre and Post Scores (<15)
Pre-Score
Post Score
Element 1: Scored Higher than 15
17.3
19.3
Element 1: Scored Lower than 15
10.8
16.1
Element 2: Scored Higher than 15
18.3
20.3
Element 2: Scored Lower than 15
10.0
15.4
Element 3: Scored Higher than 15
15.9
21.7
Element 3: Scored Lower than 15
10.4
19.3
0.0
5.0
10.0
15.0
20.0
25.0


Self-Assessment (<15) - Percentage Change
Percent Increase (Pre to Post)
Element 1: Scored Higher than 15
11.2%
Element 1: Scored Lower than 15
48.2%
Element 2: Scored Higher than 15
10.9%
Element 2: Scored Lower than 15
54.4%
Element 3: Scored Higher than 15
36.3%
Element 3: Scored Lower than 15
86.6%
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%
60.0%
70.0%
80.0%
90.0%
100.0%

California Emerging Technoloy Fund
UNESCO Digital Literacy Competences Aligned to Framework 3 Elements
June 2021

ELEMENT 1: ACCESS	**Competency Description**
0.1 Physical Operations of Digital Devices	*To identify and use the functions and features of the hardware tools and technologies.*
4.1 Protecting Devices	*To protect devices and digital content, and to understand risks and threats in digital environments. To know about safety and security measures and to have due regard to reliability and*
4.2 Protecting Personal Data and Privacy	*To protect personal data and privacy in digital environments. To understand how to use and share personally identifiable information while being able to protect oneself and others from damages. To understand that digital services use a "Privacy policy" to inform how personal data is used.*
1.1 Browsing, Searching and Filtering Data, Information and Digital Content	*To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.*
1.2 Evaluating Data, Information and Digital Content	*To analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. To analyse, interpret and critically evaluate the data, information and digital content.*
Element 2: MANAGE	**Competency Description**
2.1 Interacting through Digital Technologies	*To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.*
2.2 Sharing through Digital Technologies	*To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.*
2.3 Engaging in Citizenship through Digital Technologies	*To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.*
Element 3: INTEGRATE	**Competency Description**

California Emerging Technoloy Fund
UNESCO Digital Literacy Competences Aligned to Framework 3 Elements
June 2021

3.1 Developing Digital Content	*To create and edit digital content in different formats, to express oneself through digital means.*
2.6 Managing Digital Identify	*To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.*
PROBLEM-SOLVING	**This is an optional short course.**
5.1 Solving Technical Problems	*To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems).*
5.2 Identifying Needs and Technological Responses	*To assess needs and to identify, evaluate, select and use digital tools and possible technological responses to solve them. To adjust and customise digital environments to personal needs (e.g. accessibility).*
5.4 Identifying Digital Competence Gaps	*To understand where one's own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.*

Confidential Digital Literacy Pre-and-Post Self-Assessment

Welcome to the Digital Inclusion Program dedicated to helping you get connected at home to the Internet to save you time and money and to support your household needs. Please answer the following questions to help us assist you. Your answers are confidential.

1. How hard are the following tasks for you to do without help from someone?

Digital Literacy Element 1: ABILITY TO ACCESS ONt LINE INFORMATION	**1 Very Hard** 	**2 Hard** 	**3 Unsure** 	**4 Easy** 	**5 Very Easy** 
a. Understand the basic features of a computer including: Operating Systems (Apple IOS, Android, Windows); Internet Browsers (Safari, Google Chrome, Microsoft Explorer); and Software Applications (Google Workspace and Microsoft Office)?					
b. Protect your computer with secure passwords and security software?					
c. Search for information online about health, jobs, school, housing, DMV, and other public services?					
d. Protect your online accounts (email accounts, bank accounts, and shopping accounts) from scams?					
e. Compose and send an email (and create an email account if needed)?					

2. **How hard are the following tasks for you to do without help from someone?**

Digital Literacy Element 2: **ABILITY TO <u>MANAGE</u> ONLINE INFORMATION**	**1** **Very Hard** 	**2** **Hard** 	**3** **Unsure** 	**4** **Easy** 	**5** **Very Easy** 
a. Communicate safely with others using text or email?					
b. Send photos or other documents as an attachment to an email?					
c. Start and join a video conference call using applications, such as Zoom, WhatsApp, or others?					
d. Use a personal social media account safely, such as Facebook, YouTube, WhatsApp, or others?					
e. Access and view a public meeting online, such as city council, school board, or neighborhood meeting?					

3. **How hard are the following tasks for you to do without help from someone?**

Digital literacy Element 3 **ABILITY TO <u>INTEGRATE</u> ONLINE INFORMATION**	**1** **Very Hard** 	**2** **Hard** 	**3** **Unsure** 	**4** **Easy** 	**5** **Very Easy** 
a. Submit online forms, such as a job application, driver's license renewal, or school registration?					
b. Create digital content, such as a resume, note to your child's teacher, or a photo album?					
c. Take or download a photo and edit it using tools, such as cropping and save for future use?					
d. Use your device to make a short video (about 10 seconds) to share with others online?					
e. Make sure your social media posts and other online content you make protects your reputation?					

4. **Are you willing to be contacted in the future to see how the Digital Inclusion Partnership has helped you and your family? Yes _____ No _____**

Thank you for taking the time to complete this Self-Assessment. Your answers are confidential. We look forward to helping you get connected to the Internet at home and learning to use a computing device to help you and your family save time and money.



DIGITAL LITERACY COURSES
UNESCO FRAMEWORK
FACILITATOR'S GUIDES FOR 6 ELEMENTS

Digital Literacy Training for All Low-Income Households

Element 1: Access	Basic
Element 2: Manage	Basic
Element 3: Integrate	Basic – Intermediate

Introduction to Workforce Training

Element 4: Evaluate	Intermediate
Element 5: Create	Intermediate – Advanced
Element 6: Communicate	Advanced

DIGITAL LITERACY COURSE FACILITATOR'S GUIDE

CLASS 1: ACCESS
Finding Information You Need

OVERVIEW

Class 1 is the first in a 6-part series of digital literacy classes for adults. It includes information you can use to introduce participants to the basic knowledge and skills they need to access and use digital tools, including computer basics and software. The presentation includes information on conducting Internet searches, creating and using an email account, and evaluating the information found on the Internet. Additionally, the presentation contains basic information on how to set safe passwords and other online safety tips. The presentation includes numerous opportunities for participants to practice and review. The facilitator should review the participants' self-assessments to gauge their current knowledge of this information and identify areas of uncertainty so you can adjust the presentation accordingly.

LEARNING OBJECTIVES

During this class, participants will be introduced to and explore the following:

- Understand the basic features of a computer and its software.
  - Types of hardware and their features (input vs. output).
  - Software (Operating System vs. Applications).
  - Important digital icons in software applications.

- Searching the Internet to access information.
  - About search engines and safety features.
  - Search strategies and domain names.
  - Search strategies for videos.

- Using the Internet.
  - Online safety tips.
  - Family resources.
  - Email: setting up and using.

TARGETED OUTCOMES

Once participants have completed this class, they will know how to:

- Explain the basic features of a computer and its software.
- Search the Internet to access information.
- Safely use the Internet.

MATERIALS

- Slide presentation with activities for each topic.
- A digital device for each participant with Internet access.
- Projector and/or screen for demonstration.
- Handouts or digital resources for reference as needed; provided in the instructions.

AGENDA

Facilitators should use the following agenda as a guide for their presentation of the class. In most cases, the final agenda should reflect the results of the Pre Self-Assessment.

Topic	Instructions
Welcome and Introductions	Greet participants and review the basics: • Introductions • Intended Length of Session and Breaks
Objectives of the Class	• Understand the basic features of a computer and its software. • Know how to search the Internet to access information. • Know how to safely use the Internet.
Target Outcomes	Inform participants that at the end of the class, they will know how to: • Explain the basic features of a computer and its software. • Search the Internet to access information they need. • Safely use the Internet to protect themselves from scams.
Present the Material	Using presentation slides and handouts, review the materials and guide participants to explore ways to use a computer and safely search the Internet to meet outcomes above. • Computer Basics. • Icons to know. • Searching for information online. • Evaluating information. • Creating an email account. • Password and online safety.
Review and Closing	Thank participants for attending. • Review objectives and answer questions. • Ask participants to complete Element 1: Post Self-Assessment. • Review the date for the next class.

DIGITAL LITERACY COURSE FACILITATOR'S GUIDE

CLASS 2: Manage Communicating with Others

OVERVIEW

Class 2 is the second in a 6-part series of digital literacy classes for adults. This class builds on the foundational materials covered in class 1. A primary focus is on using the Internet to communicate with others safely. For example, participants learn how to send emails with attachments, join a video call, use social media, and evaluate information more carefully. The presentation begins by having participants take a deeper dive into Internet safety. The presentation includes numerous opportunities for participants to practice and review. The facilitator should review the participants' self-assessments to gauge their current knowledge of this information and identify areas of uncertainty so you can adjust the presentation accordingly.

LEARNING OBJECTIVES

During this class, participants will be introduced to and explore the following:

- Internet Safety
  - Easy Tips including personal responsibility.
  - Cookies and browser security features.
  - Phishing Scams and how to avoid them.

- Managing email.
  - Composing with attachments.
  - Responding
  - Managing email accounts.

- Video Conferencing and Social Media.
  - Join a Zoom or other video platform.
  - Using social media: YouTube, Facebook, etc.
  - Identifying 'Fake News.'

TARGETED OUTCOMES

Once participants have completed this workshop, they will know how to:

- Manage cookies and avoid phishing attempts.
- Manage and fully use their email accounts.
- Join a Zoom call and a social media platform.

MATERIALS

- Slide presentation with activities for each topic.
- A digital device for each participant with Internet access.
- Projector and/or screen for demonstration.
- Handouts or digital resources for reference as needed; provided in the instructions.

AGENDA

Facilitators should use the following agenda as a guide for their presentation of the class. In most cases, the final agenda should reflect the results of the Pre Self-Assessment.

Topic	Instructions
Welcome and Introductions	Greet participants and review the basics: • Introductions • Intended Length of Session and Breaks
Objectives of the Class	• Safely communicate with others. • Know how to manage an email account. • Know how to join a video conference and social media.
Target Outcomes	Inform participants that at the end of the class, they will know how to: • Manage cookies and avoid phishing attempts to protect themselves online. • Manage and fully use their email accounts to communicate with others. • Join a zoom call and a social media platform to interact with others.
Present the Material	Using presentation slides and handouts, review the materials and guide participants through the following topics: • Safety and Communications • Sending emails with attachments. • Joining video calls. • Joining social media. • Evaluating Information (fake news).
Review and Closing	Thank participants for attending. • Review objectives and answer questions. • Ask participants to complete Element 2: Post Self-Assessment. • Review the date for the next class.

DIGITAL LITERACY COURSE FACILITATOR'S GUIDE

CLASS 3: INTEGRATE
Making and Sharing Content with Others

OVERVIEW

Class 3 is the third in a 6-part series of digital literacy classes for adults. This class introduces participants to knowledge and skills that will enable them to make and edit digital content in different formats to express themselves through digital means. You will help participants learn how to use digital tools to write, take photographs, and make a video and share these products with others through slides and activities. The basics of social media are also presented. Additionally, participants will learn how to modify, refine, and incorporate content from others in their digital products and understand how copyright and licenses are applied to data, information, and digital content. As each new topic is covered, the participants develop a product of their own. The presentation includes numerous opportunities for participants to practice and review. The facilitator should review the participants' self-assessments to gauge their current knowledge of this information and identify areas of uncertainty so you can adjust the presentation accordingly.

LEARNING OBJECTIVES

During this workshop, participants will be introduced to and explore the following:

- Ways to Make and Share Digital Content (Varies Depending on Device).
  - Word, Pages, Google Docs
  - Photography
  - Videos (with slide presentations)
- Tips for Incorporating and Sharing Content From Others.
  - Adding Content to a Form.
  - Downloading Images from the Internet.
  - Posting to a Social Media Account.
- Copyright Issues that Apply to Content Development.
  - Legal Issues
  - Ethical Issues
  - Individual Rights and Responsibilities

TARGETED OUTCOMES

Once participants have completed this class, they will know how to:

- Submit a form online.
- Make a digital document to share with others (resume or note to teacher).
- Take and or download a photo and save for future use.
- Know how to make a social media post that does not compromise their reputation.

MATERIALS

- Slide presentation with activities for each topic.
- A digital device for each participant with Internet access.
- Projector and/or screen for demonstration.
- Handouts or digital resources for reference as needed; provided in the instructions.

AGENDA

Facilitators should use the following agenda as a guide for their presentation of the class. In most cases, the final agenda should reflect the results of the Pre Self-Assessment.

Topic	Instructions
Welcome and Introductions	Greet participants and review the basics: • Introductions • Intended Length of Session and Breaks
Objectives of the Class	• Tools for Making, Saving and Sharing Content. • Tips for Incorporating Content from Others. • Copyrights Basics.
Target Outcomes	Inform participants that at the end of the class, they will know how to: • Demonstrate their ability to make a digital product on their own. • Make digital products that incorporate content from others into their product. • Explain the copyright issues associated with their product.
Present the Material	Using presentation slides and handouts, review the following material and guide participants to explore ways to make content. • Documents and Online Forms • Slide Presentations • Images and Photography • Videos • Social Media • Copyright Basics
Review and Closing	Thank participants for attending. • Review objectives and answer questions. • Ask participants to complete Element 3: Post Self-Assessment. • Thank participants for completing the course and provide them with their Certificate of Completion OR review the date for the next class (if applicable).

DIGITAL LITERACY COURSE FACILITATOR'S GUIDE

CLASS 4: Evaluate
Assessing Information You Need

OVERVIEW

Class 4 is the fourth in a 6-part series of digital literacy classes for adults. It includes information you can use to introduce participants to the knowledge and skills they need to assess and manage information using cloud-based applications (Google Search, Scholar, Docs, and Drive) available through Google Workspace for personal, academic, and business purposes. The presentation includes information on sharing permissions, backing up and restoring files to protect data. Additionally, the presentation contains information on how to critically evaluate online sources and real-time collaboration on documents. The presentation includes numerous opportunities for participants to practice and review. The facilitator should review the participants' self-assessments to gauge their current knowledge of this information and identify areas of uncertainty so you can adjust the presentation accordingly.

LEARNING OBJECTIVES

During this class, participants will be introduced to and explore the following:

- Understand the benefits and applications of Google Workspace.
  - Evaluating differences between a cloud-based suite of applications versus a desktop-based software suite.
  - Sharing and setting up permissions to protect data and prevent unauthorized access.
  - Setting up backup and restore options to protect files.
- Navigate Google Search and Scholar.
  - Critically evaluating online sources to ensure the reliability and credibility of information.
  - Applying techniques to find specific information and save time.
  - Applying features to expand on research.
- Navigate Google Drive and Docs
  - Organizing and managing files and sharing folders with permissions.
  - Access and restore files from any device with an Internet connection.
  - Collaborating in real-time on documents using features (e.g. comments, suggestions).

TARGETED OUTCOMES

Once participants have completed this class, they will know how to:

- Explain how Google Workspace is a suite of cloud-based applications.
- Use tools and features available in Google Search and Scholar to assess the information you need for personal, academic, and business purposes.
- Use tools and features in Google Drive and Docs for personal, academic, and business purposes.

MATERIALS

- Slide presentation with activities for each topic.
- A digital device for each participant with Internet access.
- Projector and/or screen for demonstration.
- Handouts or digital resources for reference as needed; provided in the instructions.

AGENDA

Facilitators should use the following agenda as a guide for their presentation of the class. In most cases, the final agenda should reflect the results of the Pre Self-Assessment.

Topic	Instructions
Welcome and Introductions	Greet participants and review the basics: • Introductions • Intended Length of Session and Breaks
Objectives of the Class	• Understand the benefits and applications of Google Workspace. • Know how to navigate Google Search and Scholar. • Know how to navigate Google Drive and Docs.
Target Outcomes	Inform participants that at the end of the class, they will know how to: • Explain how Google Workspace is a suite of cloud-based productivity and collaboration applications. • Use the tools and features available in Google Search and Scholar to assess the information you need for personal, academic, and business purposes. • Use the tools and features in Google Drive and Docs for personal, academic, and business purposes.
Present the Material	Using presentation slides and handouts, review the materials and guide participants to explore ways to use Google Workspace to increase productivity and collaboration through the following topics: • Understanding cloud-based suite of applications. • Evaluating sources. • Searching for information. • Accessing and storing files. • Sharing and collaborating documents.
Review and Closing	Thank participants for attending. • Review the objectives and answer questions. • Ask participants to complete Element 4: Post Self-Assessment. • Review the date for the next class.

DIGITAL LITERACY COURSE FACILITATOR'S GUIDE

WORKSHOP 5: Create
Generating Information to Communicate with Others

OVERVIEW

Class 5 is the fifth in a 6-part series of digital literacy classes for adults. This class builds on the foundational materials covered in class 4. A primary focus is on using cloud-based applications (Google Slides, Maps, Translate, and YouTube) available through Google Workspace to develop presentations to communicate with others for personal, academic, and business purposes. For example, participants will learn how to create presentations using templates, format them using themes, and enhance them by embedding and referencing multimedia sources. Participants will also learn how to search for locations on a digital map, create custom digital maps, and translate text and voice messages to communicate information. The presentation includes numerous opportunities for participants to practice and review. The facilitator should review the participants' self-assessments to gauge their current knowledge of this information and identify areas of uncertainty so you can adjust the presentation accordingly.

LEARNING OBJECTIVES

During this class, participants will be introduced to and explore the following:

- Understand the features of Google Slides, Maps, Translate, and YouTube.
  - Collaborating in real-time on presentations.
  - Sharing presentations and maps with permissions and authorizing access.
  - Backing up and restoring presentations and maps.
- Navigate Google Slides and Maps.
  - Creating presentations using templates and saving documents.
  - Formatting presentations using themes and layouts.
  - Searching for locations and making maps using markers, routes, locations, street view, and layering.
- Navigate Google Translate and YouTube.
  - Translating text and voice messages.
  - Enhancing presentations by embedding multimedia.
  - Referencing multimedia in presentations.

TARGETED OUTCOMES

Once participants have completed this class, they will know how to:

- Explain how to use Google Slides, Maps, Translate, and YouTube to generate information to communicate with others.
- Use the tools and features in Google Slides and Maps to create custom presentations and maps for personal, academic, and business purposes.
- Use the tools and features of Google Translate and YouTube to communicate information in different languages and using multimedia sources for personal, academic, and business

MATERIALS

- Slide presentation with activities for each topic.
- A digital device for each participant with Internet access.
- Projector and/or screen for demonstration.
- Handouts or digital resources for reference as needed; provided in the instructions.

AGENDA

Facilitators should use the following agenda as a guide for their presentations of the Workshops. In most cases, the final agenda should reflect the results of the Pre Self-Assessment.

Topic	Instructions
Welcome and Introductions	Greet participants and review the basics: • Introductions • Intended Length of Session and Breaks
Objectives of the Class	Understand the features of Google Slides, Maps, Translate, and YouTube. • Know how to navigate Google Slides and Maps. • Know how to navigate Google Translate and YouTube.
Target Outcomes	Inform participants that at the end of the class, they will know how to: • Explain how to use the features of Google Slides, Maps, Translate, and YouTube to generate information to communicate with others. • Use the tools and features available in Google Slides and Maps to create custom presentations and maps for personal, academic, and business purposes. • Use the tools and features of Google Translate and YouTube to communicate information in different languages and using multimedia sources for personal, academic, and business purposes.
Presenting the Material	Using presentation slides and handouts, review the materials and guide participants to explore ways to use Google Workspace to increase productivity and collaboration through the following: • Collaborating in real-time on presentations. • Creating and formatting presentations. • Embedding and referencing multimedia in presentations. • Translating text and voice messages. • Searching for locations and creating maps using markers, routes, locations, street view, and layering.
Review and Closing	Thank participants for attending. • Review objectives and answer questions. • Ask participants to complete Element 5: Post Self-Assessment. • Review the date for the next class.

DIGITAL LITERACY COURSE FACILITATOR'S GUIDE

WORKSHOP 6: Communicate
Presenting Information to Others

OVERVIEW

Class 6 is the last in a 6-part series of digital literacy classes for adults. This class introduces participants to cloud-based applications (Google Forms, Sheets, Calendar, and Photos) available through Google Workspace to persuasively present information to others for personal, academic, and business purposes. The presentation includes information on how to organize schedules, set reminders, and plan tasks. Participants will create customized forms to collect, evaluate, and present information effectively using photos and videos. Additionally, the presentation contains information on Integrating cloud-based applications to increase productivity. The class includes numerous opportunities for participants to practice and review. The facilitator should review the participants' self-assessments to gauge their current knowledge of this information and identify areas of uncertainty so you can adjust the presentation accordingly.

LEARNING OBJECTIVES

During this class, participants will be introduced to and explore the following:

- Understand the features of Google Forms, Sheets, Calendar, and Photos.
  - Integrating cloud-based applications to increase productivity.
  - Sharing forms, sheets, calendars, and photos with permissions and authorizing access.
  - Backing up and restoring data.
- Navigate Google Calendar and Photos.
  - Organizing schedules, scheduling events, setting reminders, and planning tasks.
  - Integrating multiple calendars to effectively manage time.
  - Organizing, editing, searching, and sharing photos and videos.
- Navigate Google Sheets and Forms.
  - Creating and customizing surveys quizzes, applications, and other forms to collect data.
  - Creating and formatting spreadsheets to analyze data.
  - Integrating Forms with Sheets to collect and analyze data efficiently.

TARGETED OUTCOMES

Once participants have completed this class, they will know how to:

- Explain how to use the features of Google Forms, Sheets, Calendar, and Photos to persuasively present information to others.
- Use the tools and features available in Google Calendar and Photos to manage time and visually present information for personal, academic, and business purposes.
- Use the tools and features available in Google Sheets and Forms to efficiently and effectively collect and present information for personal, academic, and business purposes.

MATERIALS

- Slide presentation with activities for each topic.
- A digital device for each participant with Internet access.
- Projector and/or screen for demonstration.
- Handouts or digital resources for reference as needed; provided in the instructions.

AGENDA

Facilitators should use the following agenda as a guide for their presentations of the class. In most cases, the final agenda should reflect the results of the Pre Self-Assessment.

Topic	Instructions
Welcome and Introductions	Greet participants and review the basics: • Introductions • Intended Length of Session and Breaks
Objectives of the Class	Understand the features of Google Forms, Sheets, Calendar, and Photos. • Know how to navigate Google Calendar and Photos. • Know how to navigate Google Sheets and Forms.
Target Outcomes	Inform participants that at the end of the class, they will know how to: • Explain how to use the features of Google Forms, Sheets, Calendar, and Photos to present information to others. • Use the tools and features available in Google Calendar and Photos to manage time and visually present information for personal, academic, and business purposes. • Use the tools and features available in Google Sheets and Forms to efficiently and effectively collect and present information for personal, academic, and business purposes.
Present the Material	Using presentation slides and handouts, review the materials and guide participants to explore ways to use Google Workspace to increase productivity and collaboration through the following topics: • Integrating cloud-based applications. • Organizing schedules, scheduling events, setting reminders, and planning tasks. • Organizing, editing, searching, and sharing photos and videos. • Creating and customizing surveys quizzes, applications, and other forms to collect data. • Creating and formatting spreadsheets to analyze data.
Review and Closing	Thank participants for attending. • Review objectives and answer questions. • Ask participants to complete Element 6: Post Self-Assessment. • Thank participants for completing the course and provide them with their Certificate of Completion.

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California Emerging Technology Fund
Digital Navigator Training Curricula

	Digital Navigator Training Modules	Outline	Time
Module 1	Digital Navigator Overview		1 Hour
	Definition of a Digital Navigator	1. Individuals who address the whole Digital Inclusion and Adoption process — home connectivity, digital literacy skills, devices — with community members through repeated interactions.	
	Characteristics of a Digital Navigator	2. Volunteers or trained staff who already work in community-based organizations (CBOs), libraries, or government initiatives focused on Digital Inclusion.	
		3. Dedicated individuals who empower others by providing guidance, training, and support in navigating the digital world.	
		4. Community leaders who support the promotion of Digital Inclusion by helping individuals or communities gain the skills and confidence needed to fully participate in the digital age.	
		5. Trusted Messengers who are familiar with resources that relate to Digital Inclusion to achieve Digital Dquity and help residents learn to use critical online services that provide guidance with assistance for education, employment, government benefits, public services, and other needs such as food, housing, and child care.	
	Digital Navigator Requirements	6. Manage stressful conversations in a positive way.	
		7. Build trust with clients.	
		8. Utilize technology with comfort with a desire to learn and teach in-language and in-culture.	
	Definition of Digital Inclusion	9. Refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICT).	
	Definition of Digital Equity	10. A condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital Equity is necessary for civic and cultural participation, employment, life-long learning, and access to essential services.	
	Example of Digital Navigator Program Video	Salt Lake City Public Library Digital Navigator Program	
	Knowledge Checks	3 Questions	

Module 2	**Digital Navigator Fundamentals**		**2 Hours**
	Common Help Questions	1. Low-Cost Internet Access	
		2. Free, Low-Cost or Refurbished Devices	
		3. Tech Support	
		4. Referrals to Digital Literacy Programs	
		5. Referrals to Job Training and Online Education Options	
		6. Upskilling and Job-Readiness Program	
		7. Telehealth and Other Daily-Living Needs	
		8. All of the Above	
	Community Assessments	9. Digital Divide Data Worksheet.	
		10. Support for People with Disabilities	
		11. Support for Language Access Services	
	Individual Assessment	12. Intake	
		13. Outreach Event Form	
		14. Digital Literacy (Pre-and-Post Self-Assessments)	
	Links to Resources	15. Home Internet Speed Test	
		16. Home Internet Coverage Check	
		17. California Broadband Map	
		18. Low-Cost Devices	
		19. Intake Form	
		20. Outreach Event Form	
		21. Pre-Self-Assessment Digital Skills Form	
		22. Post-Self-Assessment Digital Skills Form	
	Knowledge Checks	3 Questions	
Module 3	**Access to Technology**		**1 Hour**
	Broadband vs. WiFi	Video https://www.youtube.com/watch?v=TvA4ebcO0e8	
	Broadband: Why We Need It	1. Online Education	
		2. Entrepreneurship	
		3. Health Care Services	
		4. Government Services	
		5. Remote Work	
	Homework Gap	Video	
	Digital Divide	6. What are the Causes of Digital Inequality?	

		a. Access	
		b. Affordability	
		c. Adoption	
	Introduction to Access to Technology	7. Access to technology involves ensuring that individuals have the necessary hardware, such as computers and tablets, and affordable technology options to participate fully in the digital world.	
		8. Digital Navigators can assist by guiding users in acquiring essential devices through community resources and identifying low-cost subsidized technology programs to Bridge the Digital Divide.	
	Helping Individuals Obtain Hardware	9. Understanding Hardware Needs	
		a. Assessing individual needs: determine the specific hardware requirements based on the user's needs.	
		b. Types of hardware: overview of different types of devices (computers, tablets, smartphones) and their typical uses.	
		10. Sources for Obtaining Hardware	
		a. Community resources: TechSoup, Computers for Youth, The On It Foundation, Goodwill Industries SoCal, PCs for People, Californians for the Arts Tech Outreach Programs, Tech Exchange, Computers 4 Kids.	
		b. Non-profits and charities: organizations that provide refurbished or donated devices.	
		c. Community tech programs: programs that offer free or low-cost hardware to eligible individuals.	
		11. Practical Tips for Assisting with Hardware Acquisition	
		a. Application assistance: help individuals complete applications for hardware assistance programs.	
		b. Refurbishment and repair: guide individuals to local resources for refurbishing or repairing old devices.	
		c. Navigating donation requests: provide tips on how to request and follow up on a hardware donations effectively.	
	Facilitating Access to Low-Cost or Subsidized Technology Options	12. Understanding Low-Cost and Subsidized Technology	
		a. Low-cost technology: devices and services offered at a reduced price or with financial assistance.	
		b. Subsidized technology programs: programs that reduce costs based on income or other eligibility criteria.	
		13. Identifying Low-Cost Technology Options	
		a. Discounted devices: retail program and refurbished devices.	

		14. Building Relationships with Providers	
		a. Creating partnerships: established relationships with local providers of low-cost or subsidized technology to stay informed about available options and updates.	
		b. Community outreach: develop strategies for raising awareness about available technology resources with the community.	
Module 4	**Internet Adoption**		**1 Hour**
	Barriers to Adoption	1. Homework Gap - YouTube / Soulpancake	
		a. Low Awareness	
		b. Lack of Trust	
		c. Enrollment Challenges	
	Connecting Households to Home Internet	2. Develop cost and service goals.	
		3. Find and support sign-up for a plan that meets client's goals.	
		4. Document what the costs could become to remain connected.	
		5. Support the client in applying for discounted services.	
		a. Attach eligibility documentation to online applications.	
		b. Check eligibility: guide users in verifying their eligibility for low-cost Internet programs.	
		c. Choosing a plan: help users understand their options and they select the best plan based on their needs.	
		d. Applying online: demonstrate hot to complete an online applicationw	
		e. Troubleshooting: provide assistance for common issues that might arise during the application process.	
		6. Sources of low-cost home Internet service options.	
		a. Eligibility is typically based on income or participation in specific low-income public assistance programs.	
	Low-Cost Internet Service Offers	7. BenefitsCal.org.	
		8. ID and Other Eligiblity Documents	
		9. Undocumented Individuals	
	Links to Resources	10. Federal Poverty Guidelines	
		11. Documentation	
		12. Benefitscal.org	
	Knowledge Check	1 Question	

Module 5	**Technical Support**		**1 Hour**
	Assisting Users	1. Understanding and Identifying Common Computer Issues	
		a. Hardware Problems: Faulty connections, non-responsive peripherals, cables, devices.	
		b. Software Malfunctions: Slow performance, program crashes, closing and restarting programs, updating software.	
		c. Connectivity Issues: Internet / Wi-Fi connection, slow Internet - checking router/modem, reconnecting to Interent.	
	Case Study Activity	Scenario: Community resident (or Digital Literacy participant) encountering a computer Issue.	
		Digital Navigator will problem solve and suggest troubleshooting steps.	
	Assisting Users	2. Troubleshooting Techniques	
		a. Systematic Troubleshooting: Assess the situation, ask questions to gather information, determine the problem's scope.	
		b. Step-by-Step Troubleshooting: Restart, check cables, update drivers, run diagnostics.	
		c. Knowing When to Escalate: identify when an issue requires professional repair and guide resident or participant on next steps if escalation is needed.	
	Group Activity	3. Interactive Troubleshooting Practice	
		a. Groups will tackle a common computer issue scenario, practice systematic troubleshooting steps and reconvene and discuss each group's approach.	
	Assisting Users	4. Providing Support via Videoconference (Zoom is Preferred Platform)	
		a. Scheduling and Preparing for a Call: How to schedule a Zoom meeting, send invitation, and ensure both Digital Navigator and community member have the videoconference application installed and updated.	
		b. During the Call: Share screens, navigate together, use chat, take over content.	
		c. Ending the Call: Confirm the issue is resolved or explain next steps if further action is needed.	
		d. Maintaining Professionalism: Underscore the importance of the Digital Navigator to be punctual, clear and concise and ensure a distraction free environment.	
		e. Ensuring Privacy and Security: Follow best practices for data privacy and security.	
Module 6	**Online Safety**		**1 Hour**
	Understanding Online Safety	1. Types of Online Risks	
		a. Cyberbullying	
		b. Phishing	
		c. Malware	
		d. Identity Theft	

		2. Evolving Threat Landscape	
		a. Recent Trends and Statistics	
		b. Importance of Staying Informed About New Threats	
	Protecting Personal Information	3. Strong Password Practices	
		a. Complex Passwords	
		b. Password Managers	
		c. Definition: An extra layer of security beyond just a password.	
		d. How to Enable: Step-by-step guide for popular platforms.	
	Social Media Privacy	4. Review Privacy Settings: Adjust to Limit Who Can See Personal Information	
		5. Be Mindful of Sharing: Avoid Oversharing Sensitive Details	
	Safe Internet Practices	6. Safe Browsing Habits	
		a. Verify Website Authenticity: Look for HTTPS and check URLs for legitimacy.	
		b. Avoid Suspicious Links: Be cautious of unsolicited links in emails or messages.	
		7. Secure Online Transactions	
		a. Use Trusted Payments Methods: Prefer secure and reputable payment gateways.	
		b. Monitor Financial Statements: Regularly check for unauthorized transactions.	
		8. Regular Software Updates	
		a. Importance of Updates: Keep software and systems updated to patch security vulnerabilities.	
		b. Automatic Updates: Enable them whenever possible.	
	Recognizing and Handling Threats	9. Identifying Phishing Attempts	
		a. Common Indicators: Unusual requests for personal information, poor grammar and urgent language.	
		b. What To Do: Verify the sender's legitimacy and report suspicious emails.	
		10. Handling Suspicious Activities	
		a. Reporting: Guidelines on how to report security incidents to relevant authorities or organizations.	
		b. Seek Help: Contact IT support or cybersecurity professions if needed.	
		11. Incident Response Plan	
		a. Steps to Take: Immediate actions to mitigate damage if a security breach occurs.	
		b. Document: Keep a record of the incident for future reference.	

	Resources and Tools	12. Online Safety Resources	
		a. Educational Websites: Links to sites offering additional online safety information.	
		b. Government and Non-Profit Organizations: Trusted sources for guidance and support.	
		13. Security Tools	
		a. Antivirus Software: Recommendations for reputable antivirus programs.	
		b. Browser Extensions: Useful extensions for enhanced security and privacy.	
Module 7	**Digital Literacy**		**7 Hours**
	Learners New to the Digital World	1. Designing Effective and Inclusive Digital Literacy Programs	
	CETF Digital Literacy Overview	2. CETF Digital Literacy Framework	
		a. Access	
		b. Manage	
		c. Integrate	
	Basic Elements of Digital Literacy	3. Elements	
		4. Definitions	
		5. Competencies	
	Pre and Post Self Assessments	6. How to Guide	
	Learning Method	7. UNESCO Digital Literacy Training (synchronous learning; slide deck/live).	
	Learning Method	8. CETF Digital Learn (asynchronous learning; online, self-paced portal).	
	Knowledge Checks	3 Questions	
Module 8	**Grant Writing Essentials for Digital Navigators**		**6 Hour**
	Grant Writing 101	1. Understanding the Criteria for Eligibility	
		a. 501(c)(3) Status	
		b. Mission Alignment	
		c. Financial Stability	
		d. IRS and California Annual Information Return	
		e. Legal Compliance	
		f. Secretary of State Good Standing Certificate	
		g. SAM.gov Registration, Cage Code, and UEI Number	

	Grant Search	2. Grant Search	
		a. Learn strategies for searching and identifying grants from various sources, including federal government, State, Counties, private foundations, and Community Reinvestment Act (CRA).	
	Identify Potential Partners and Social Enterprise Strategies	3. Learn to Locate and Assess Potential Partners	
		a. Funding sources and explore effective strategies for social enterprise collaborations.	
	Identify Your Grant Writing Team	4. Grant Team Roles	
		a. Researcher	
		b. Program Director / Expert	
		c. Grant Writer	
		d. Graphic Designer	
		e. Support Document Coordinator	
		f. Financial Analyst / Budget Specialist	
		g. Editor / Proof-Reader	
	How to Write a Mission Statement	5. How to Write a Mission Statement	
		a. Develop a clear and compelling mission statement.	
	Creative and Innovative Grant Titles	6. Creative and Innovative Grant Titles	
		a. Explore techniques for crafting engaging and unique grant titles.	
	Prepare a Strong Proposal	7. Key Components to Develop a Strong Proposal	
		a. Understand the critical elements of a grant proposal.	
	Interactive Group Exercise	Hands-on group exercise to apply the concepts learned and develop practical grant writing skills.	
	Certification by CSU Chico	**California Digital Navigator Certificate**	
		Total Time:	**20 Hours**

Get Connected! California Partnership
Overview of the California Green Technology Initiative

The overall goal of the California Green Technology Initiative is to decrease the volume of retired computing devices being dismantled-destroyed and/or shipped off-shore and to increase the supply chain remaining in state to help close the Digital Divide. The Green Technology Initiative has the dual benefits of reducing impacts on the environment while advancing Digital Equity. The Initiative is sponsored by the Get Connected! California Partnership (GCCP) and managed by the California Emerging Technology Fund (CETF).

The California Green Technology Initiative makes it easy for all employers—public and private—to donate retired computers through 2 opportunity channels that are very easy to use:

- Community Non-Profit Refurbishers
- CETF-Revivn Partnership

The Green Technology Initiative addresses one of the major barriers to getting everyone online—more than 99% of Californians say they want to be connected. Affordability is the leading reason why low-income households are not connected to the Internet, with 61% citing it as a factor and 35.6% saying it is the single most-important barrier (only 2.7%—less than 3%—say the primary reason is the lack of high-speed Internet infrastructure; 33.1% cite the lack of a computing device as a barrier and 32.2% say they lack sufficient computer skills. The majority (56%) who are connected categorize themselves as a "beginner" (3% say they are "intermediate" and only 8% say they are "advanced"). Further, 65% state that they want more digital literacy training.

Community non-profit refurbishers pick up, clean, renovate, and make available refurbished computing devices (particularly laptops and desktops) at competitive prices while also conducting workforce training. There are several experienced refurbishers throughout the state, such as: Computers4Kids (Sacramento Capital Region); Tech Exchange (Bay Area); human-I-T (Los Angeles Region); San Diego Futures Foundation (San Diego Region); and Computers for Classrooms (Chico and Sacramento Valley Region). The CETF-Revivn Partnership offers a "white-glove" service from a socially-responsible corporation who serves larger organizations (2,000+ employees) to perform the same functions as non-profit refurbishers while also generating a revenue stream managed by CETF to purchase refurbished and new devices (particularly Chromebooks). CETF also has established a fund for financial institutions to make donations to generate additional resources for which they will receive Community Reinvestment Act (CRA) credit. The CRA Digital Equity Fund is the result of collaboration with Rise Economy (formerly California Reinvestment Coalition) to study how financial institutions can help close the Digital Divide.

Launch Event on June 2, 2025

The the California Green Technology Initiative launched on Monday morning, June 2, 2025 in West Sacramento. The recap video can be accessed on the CETF YouTube (https:// www.youtube.com/watch?v=w_pm0maqxjA).

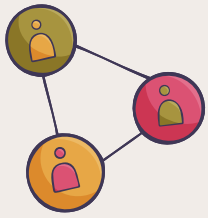
Note: The Green Technology Initiative was part of the Get Connected! California Partnership (GCCP) Application for the NTIA Competitive Grant that was awarded in the first round announced by NTIA, but which is on-hold. Thus, CETF and GCCP are moving forward to jumpstart this statewide mobilization to reduce impacts on the Environment and generate a supply of computing devices for low-income households completing Digital Literacy Training.

CALIFORNIA GREEN TECHNOLOGY INITIATIVE

CLOSING THE DIGITAL DIVIDE, PROTECTING THE ENVIRONMENT

WHAT IS THE CALIFORNIA GREEN TECHNOLOGY INITIATIVE?

Sponsored by the Get Connected! California Partnership (GCCP) and managed by the California Emerging Technology Fund (CETF), the initiative aims to advance digital equity while reducing environmental impacts of e-waste.



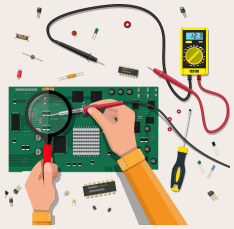


WHAT IS THE GOAL OF THE INITIATIVE?

The goal of the Green Technology Initiative is to **decrease** the number of retired computing devices that are shipped offshore and to **increase** the supply chain remaining in-state to help close the Digital Divide.

HOW DOES IT WORK?

Community non-profit refurbishers pick up, clean and make available refurbished computing devices (especially laptops and desktops) at very low prices while also conducting workforce training. The CETF-Revivn partnership performs the same function for large organizations (2,000+ employees), while also generating a revenue stream managed by CETF to purchase refurbished and new devices.





WHO REFURBISHES THE DEVICES?

Regional non-profit partners include: Computers4Kids (Capital Region); Tech Exchange (Bay Area); Human IT (Los Angeles); San Diego Futures Foundation (San Diego Region); and Computers for Classrooms (Chico and Capital Region.) Revivn serves large employers throughout the state.

WHO BENEFITS?

Everyone! Through the partnership, low-income households throughout the state can receive free or low-cost devices, digital literacy training and IT services to help close the Digital Divide, while we all enjoy the benefits of a massive reduction in e-waste.



CETFUND.ORG | CHARLENE.TATIS@CETFUND.ORG | (888) 584-8633

California Green Technology Initiative

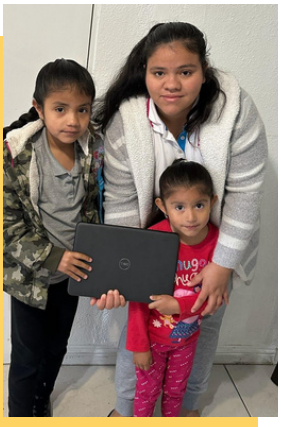
Join Us to Help Close the Digital Divide and Protect the Environment
It is EASY!

Donate Your Old Computers and Digital Equipment to Generate Funds

- Help Low-Income Families and Students Get Connected to the Internet
- Reward Families for Learning Computer Skills to Navigate the Internet
- Designate the California Community to Benefit from Your Donations

Achieve a Business Advantage

- ✓ Use a Free Service to Dispose of Retired Computers and Equipment
- ✓ Save on Costs for Disposal and Storage
- ✓ Advance Your Commitments to the Community and Environment



"Revivn is a Public Benefit Corporation that specializes in helping technology companies manage their global end-of-life needs for IT hardware. Revivn is a full-service organization that offers worldwide logistics, data security, inventory processing, reporting, and value recovery in our vertically integrated software. Revivn is on a mission to provide computer access for all - in addition to delivering a single end-of-life solution, Revivn works to bridge the digital divide with repurposed hardware through the Revivn Tech Access Program."
- Anthony Seriana, Co-Founder and Co-CEO Revivn

"At Adobe, our vision of Creativity for All starts with ensuring people have the tools and resources they need to be successful in today's digital world. Our work with the California Emerging Technology Fund and Revivn helps close the digital divide by providing broadband access and computers to Californian communities which in turn helps boost digital media literacy and drive student and workforce enablement."
- Toni Vanwinkle, Vice President of Employee Experience Adobe



California Emerging Technology Fund
A Public-Interest Foundation for the Digital Age

The California Emerging Technology Fund (CETF) provides leadership statewide to close the Digital Divide, promote Digital Inclusion, and achieve Digital Equity by accelerating the deployment and adoption of broadband (a generic term for high-speed Internet infrastructure including wireline and wireless networks) to unserved and underserved communities and populations.

Your Free Easy Solution is a Click Away
Contact: charlene.tatis@cetfund.org or call 888-584-8633

revivn

Revivn is a certified public benefit corporation, a for-profit enterprise that has a public benefit mission to provide the world access to a computer. Revivn is committed to a business model of high-growth and high-impact of doing good by providing participating companies an all-in-one solution for managing and repurposing their retired information technology assets.

HOW IT WORKS

You sign up for the Green Technology Intitiative and schedule a pick up anywhere in the world through the app.

Revivn picks up all your assets. No packing necessary.



Revivn destroys all asset data in accordance with NIST 800-88 and Department of Defense standards.

Revivn refurbishes and repurposes or ethically recycles the rest.





Revivn contributes a match contribution to any donation to the Green Technology Initiative.

Revivn provides a detailed reporting about your devices and your environmental impact which you can view on the app.



CALIFORNIA EMERGING TECHNOLOGY FUND

CALIFORNIA GREEN TECHNOLOGY INITIATIVE
Regional Refurbishers

Through key partnerships with regional refurbishers, the California Green Technology Initiative reduces e-waste while empowering California families and students and helping to close the Digital Divide.

COMPUTERS 4 KIDS | Greater Sacramento

- 13 years of service
- 4,000+ computers distributed
- 56 technicians trained

digital literacy classes | technical services | e-waste donations

HUMAN-I-T | Los Angeles

- 523,000 devices distributed
- 110,000 households connected
- 11,500 digital learners supported
- 15.1M pounds of e-waste diverted from landfills

devices | internet access | digital skills training | tech support

COMPUTERS FOR CLASSROOMS | Chico/Capital Region



- Nearly 20,000 devices distributed from 2023-2024
- 209 laptops to Butte College students impacted by the Camp Fire
- 600 devices to students during the COVID-19 pandemic
- Process more than 5,000 systems annually

devices | discounts | warranties | volunteer-to-earn programs

TECH EXCHANGE | Bay Area

- 3,050 tons of e-waste diverted
- 150,000 refurbished computers distributed
- 70,000 hours of computer training
- 450 youth technical internships provided

devices | affordable internet | multilingual IT support

SAN DIEGO FUTURES FOUNDATION | San Diego

- 2,000+ devices to nonprofits
- 4,000+ devices to foster youth and families
- 15,000+ digital learning hours
- 6M+ pounds of e-waste diverted from landfills

devices | free digital learning workshops | internship training

CETF
CALIFORNIA EMERGING TECHNOLOGY FUND

California Green Technology Initiative Launch

Protecting the Environment and Closing the Digital Divide

June 2025



Leadership in Closing the Digital Divide

Governors Arnold Schwarzenegger and Gavin Newsom have made huge strides in addressing the Digital Divide.

October 2006



Executive order established the Broadband Task Force and promoted expansion of broadband in rural areas

August 2010



The **California Broadband Council was introduced by SB 1462 (Padilla)** to convene organizations working to close the Digital Divide.

August 2020



Executive order directed the Broadband Council to develop a statewide Broadband Action Plan and promote digital equity, launching Broadband for All.

July 2021



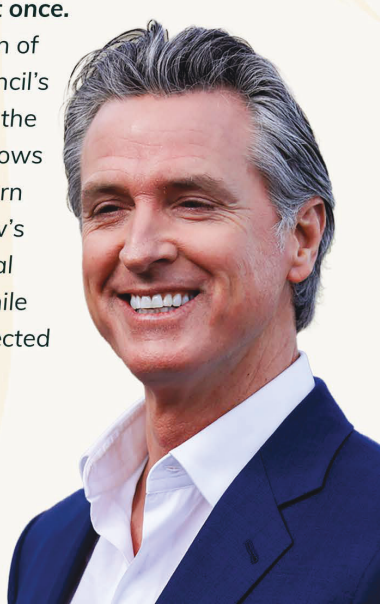
SB 156 accelerated the state's commitment to bridging the Digital Divide, dedicating funds to the effort.

California's Commitment Remains



As Governor, I pushed California to lead on environmental innovation. *The California Green Technology Initiative carries that legacy forward. By reducing e-waste and expanding digital access, we're proving once again that California and California's businesses can protect the planet and pump up the economy."*

California is once again proving that we can lead on climate, equity, and innovation—all at once. *Supporting the implementation of the California Broadband Council's State Broadband Action Plan, the Green Technology Initiative shows how California's businesses turn yesterday's tech into tomorrow's opportunity—closing the digital divide and cutting e-waste while building a cleaner, more connected future for all.*



The California Green Technology Initiative

The **Green Technology Initiative** provides an easy, safe and secure solution to make a big difference for the environment and families in need.

Goals

1. **Decrease** the volume of retired computing devices being dismantled-destroyed and/or shipped off-shore
2. **Increase** the supply chain of devices remaining in California to help close the Digital Divide

How Does the California Green Technology Initiative Work?

Any business can donate retired computers to regional non-profit refurbishers to clean and refurbish devices and generate revenue to provide low-income households that have completed digital literacy training with computers of their own!

How to Donate

1

Community Non-Profit Refurbishers

2

CETF-Revivn Partnership

A Win-Win for California Consumers and Employers



Donations from Adobe and Snap, Inc., to Revivn have generated more than $100,000 to date to support the purchase of new and refurbished computing devices for at least 475 families!

All California employers can easily participate and help those in need!

California Emerging Technology Fund (CETF)

California Green Technology Initiative: Powered by Regional Refurbisher Partners

- The California Green Technology initiative advances digital equity and environmental sustainability by refurbishing retired technology and connecting underserved Californians to devices, training and the internet.

- Through key partnerships with regional refurbishers and companies like Revivn, the Initiative ensures devices stay in California communities, reducing e-waste while empowering families and students.

CETF
CALIFORNIA EMERGING TECHNOLOGY FUND

Computers 4 Kids (Greater Sacramento)

The Facts

- **13 years of service**
- **4,000+ computers distributed**
- **56 technicians trained**

- **Computers 4 Kids serves the Sacramento region, with a mission to greatly improve the educational outcome of low-income students** by providing free and low-cost computers to those who meet program qualifications.

- C4K also provides digital literacy classes, technical services and accepts e-waste donations for responsible recycling and refurbishing.

Success Story

"Computers 4 Kids has been a tremendous benefit for RISE students. *Computers at a discount price [are] an invaluable resource that [give] students the ability to complete their coursework and be successful overall. Not having access to essential resources such as a computer is a huge burden."*

– Sacramento City College RISE Program



Human I-T (Los Angeles)

human-i-t

The Facts

- **523,000 devices distributed**
- **110,000 households connected**
- **11,500 digital learners supported**
- **15.1 million pounds of e-waste diverted from landfills**

- **Human-I-T is a social enterprise that creates equitable access to opportunity** by providing devices, internet access, digital skills training and tech support for communities left on the wrong side of the digital divide, while at the same time, empowering businesses and organizations to do good by diverting technology from landfills.

- Since 2012, Human-I-T has emphasized that “refurbishing is the new gold standard” while using community storytelling and educational videos to highlight the power of digital inclusion.



Computers for Classrooms (Chico/Capital Region)



The Facts

- **2024: 12,006 devices**
- **2023: 7,611 devices**
- **209 laptops to Butte College students impacted by Camp Fire**
- **600 to students during COVID pandemic**



- **Computers for Classrooms has been providing low-cost refurbished computers, laptops and Chromebooks** to low-income families, seniors, students and nonprofits across Northern and rural California.

- With a small but impactful team, they process over 5,000 systems annually—most sourced from government agencies—and offer discounts, warranties and volunteer-to-earn programs to ensure affordability and access. Originally founded to equip classrooms, the organization has expanded its mission to serve entire communities, playing a critical role during disasters such as the Camp Fire by helping residents reconnect through technology.

Tech Exchange (Bay Area)

Tech Exchange

The Facts

- **3,050 tons of e-waste diverted**
- **150,000 refurbished computers distributed**
- **70,000 hours of computer training**
- **450 Youth Technical internships provided**

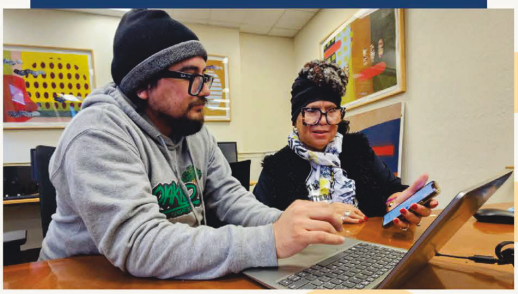
- **Tech Exchange, based in Oakland, has been bridging the digital divide in the Bay Area for 30 years by providing refurbished devices, affordable internet and tech support.** Through its East Oakland Tech Hub, the organization offers free, multilingual IT support to the community.

- Tech Exchange has served all six Bay Area counties and in 2023-2024, provided 642 adults with laptops and 360 hours of digital skills training through 45 cohorts. The organization also focuses on connecting residents in highly impacted AB 617 communities, partnering with schools, libraries and nonprofits to extend its reach.

Success Story

"Thank you so much for the class. I was definitely inexperienced and unlearned, and I learned a lot in the class, just some basics, how to do some things I really need to do. *So thank you from a senior citizen in the community! I have really appreciated it and I appreciate having a computer that I'll be able to use."*

– Tech Education Digital Skills Course Graduate



San Diego Futures Foundation (San Diego)

The Facts

- **2,000+ to nonprofits**
- **4,000+ to foster youth and families**
- **15,000+ digital learning hours**
- **6M+ pounds of e-waste diverted from landfills**





- **The San Diego Futures Foundation (SDFF) improves San Diego's workforce and economic growth by equipping individuals and communities with the tools they need to thrive in a digital world.** Through their sustainable initiatives, they repurpose computers and offer educational programs tailored to foster digital learning.

- From students to seniors, SDFF's programs have empowered countless San Diegans to navigate the digital landscape confidently. Their offerings, including low-cost computers, free digital learning workshops and CompTIA A+ internship training, provide more than just skills—they open doors to opportunities and meaningful employment.

Statewide Corporate Partner: Revivn

- Revivn is a certified Public Benefit Corporation that partners with large employers to provide secure IT asset pick-up, data destruction and refurbishment or recycling services.
- The Revivn Tech Access Program repurposes retired hardware for families in need, while ensuring ethical recycling practices and offering detailed environmental impact reporting to participating organizations.
- **Through its collaboration with CETF, Revivn generates funding used to purchase additional devices for low-income Californians, supporting digital inclusion efforts statewide.**





Statewide Corporate Partner: Adobe

Adobe

The Facts

- **Adobe revenue stream through Revivn has generated more than $92,000 to buy 425 devices for low-income families in California who complete Digital Literacy Training.**

- **Adobe began its partnership with CETF and Revivn in early 2022, seeking an all-in-one solution for managing and repurposing our retired technology assets** and advancing our commitments to the community and environment.

- The Green Technology Initiative provides companies with an easy, safe, and secure solution to make a big difference for the environment and families in need.

Success Story

"At Adobe, our vision of Creativity for All starts with ensuring people have the tools and resources they need to be successful in today's digital world. *Our work with the California Emerging Technology Fund and Revivn helps close the digital divide by providing broadband access and computers to Californian communities which in turn helps boost digital media literacy and drive student and workforce enablement."*

Toni Vanwinkle
Vice President of Employee Experience Adobe

Statewide Corporate Partner: Snap, Inc.

- Snap, Inc. began its partnership with the California Emerging Technology Fund (CETF) and Revivn in the Fall of 2024.
- Snap revenue through Revivn has already generated $10,000 to buy devices for low-income families in California who complete the digital literacy training supported by CETF.

- **Snap Inc. is proud to Partner with the California Emerging Technology Fund and Revivn to provide support for devices for families in need.** Uplifting families with access to devices aligns with Snap's mission to contribute to human progress by empowering people to express themselves, live in the moment, learn about the world and have fun together.

The Green Technology Initiative's newest statewide partner!

Financial Institutions Can Make a Difference Too!



The California Emerging Technology Fund (CETF) has established a fund that financial institutions can donate to, for which they will receive Community Reinvestment Act (CRA) credit.



The CRA Digital Equity Fund is a collaboration with Rise Economy (formerly California Reinvestment Coalition) to **study how financial institutions can help close the Digital Divide.**

Together, we can **protect our environment** and **close the Digital Divide.**

To join the California Green Technology Initiative,
call (888) 584-8633



Exhibit 2

California Emerging Technology Fund

Framework for Implementation of CETF-Verizon Public Benefits Agreement

California Emerging Technology Fund

Framework for Implementation of CETF-Verizon Public Benefits Agreement

Get 100,000 Unconnected Households Online with Affordable Broadband and Digital Proficiency

January 2026

Investment Option	Timeframe	Unit Cost	Time Units	Total Cost	Notes
CETF Leadership, Management, Administration					
CETF Core Mission and Digital Equity Ecosystem	Annually	$4,000,000	5	$20,000,000	Current Core Mission is $5M annually. This is a reduction.
Statewide Survey and Other Research Studies	Bi-Annually	$500,000	2	$1,000,000	Statewide Surveys will be conducted 2027, 2031.
Contingency	Contingency	$1,000,000	1	$1,000,000	
TOTAL				***$22,000,000***	
Digital Inclusion Program Options and Values					
School2Home	$500/Student	$500	10,000	$5,000,000	This is average $1M/ year. S2H currently is $2M/year.
Unconnected Enrollments	$75/HH to CBO	$75	100,000	$7,500,000	Could be stretched with CASF Grant for 25,000 HHs.
Underconnected Enrollments	$50/HH to CBO	$50	40,000	$2,000,000	Could be augmented by CPUC and ISPs.
In-Person Direct Notification	$10/Enrollment	$10	50,000	$500,000	CBOs paid to find Unconnected HHs with confirmed Enrollments.
Digital Literacy Training (Asynchronous DL in Ecosystem)	$400/HH to CBO	$400	5,000	$2,000,000	10,000 HHs could be GCCP CASF Grant. CETF will support funded CBOs for >50,000 HHs.
RBCs and Local Governments				$1,000,000	$800,000 committed match for 2 CASF Applications.
TOTAL				***$18,000,000***	Exceeds $5M required by MOU.
TOTAL				**$40,000,000**	

Note: CETF reserves the right to reallocate funds to support the Digital Equity Ecosystem if needed to meet goals.

Attachment B

CforAT Response to DR SCE-C4AT-001

CforAT Response to DR SCE-C4AT-001

Proceeding Number:	**A. 26-01-003 et al**
Proceeding Name:	**2026 IQP Application**
Issue Date:	**9/22/2025**
Response Date:	**10/8/2026**
Response by:	Melissa W. Kasnitz; service@c4at.org; mkasnitz@c4at.org
Originated by:	Olivia Samad 626-302-3477 Southern California Edison Company 8631 Rush Street Rosemead, CA 91770 Olivia.Samad@sce.com

Question 1:
C4AT testimony (p. 12) states that SCE's proposed upfront eligibility verification process would "remove or prevent enrollment of a substantial number of customers from the program who meet eligibility standards but do not successfully navigate the enrollment process." In addition, C4AT testimony (p. 14) states that the proposal would adversely affect "otherwise-eligible customers who are nevertheless barred from the program." Please identify and provide all analyses, studies, data, surveys, evaluations, reports, assumptions, and other evidence relied upon by C4AT to support these conclusions, including any estimates of the number or percentage of otherwise-eligible customers that would be unable to enroll or remain enrolled under SCE's proposal.

Response to Question 1:

The understanding that an increase in administrative burden, including specifically the production of documents, results in lower enrollment in support programs is well understood, and there is a substantial body of literature that supports this understanding. As a concept, it is not reasonably in dispute. Both academic literature and the common understanding of individuals and organizations involved in anti-poverty work recognize that enrollment rates for public support programs drop when documentation requirements increase.

CforAT did not conduct any specific study or analysis of SCE's proposal to reverify this broad understanding, which is consistent with our experience obtained through years of work in this policy area representing the needs of vulnerable consumer groups. However, we are happy to provide you with some leading materials on the concepts that underpin our understanding, including the following:

- *Administrative Burden: Policymaking by Other Means,* P. Herd & D. Moynihan, published in 2018. The entire book is available for download at https://www.russellsage.org/publications/book/administrative-burden. *See also* P. Herd & D. Moynihan, *Administrative Burdens in the Social Safety Net,* Journal of Economic Perspectives, Vol. 39, No. 1, Winter 2025 at pp. 129-50. The full text of this article is available for download at https://www.aeaweb.org/articles?id=10.1257/jep.20231394;
- *The Time Tax*, A. Lowrey, published in 2026.

Some useful materials specifically addressing enrollment in utility support programs include the following:

- 2022 Low Income Needs Assessment, produced by Evergreen Economics for the large California IOUs and the Energy Division of the CPUC, at pp. 31-34 (addressing barriers to participation in ESA), available at https://liob.cpuc.ca.gov/wp-content/uploads/sites/14/2023/07/2022_LINA_Report_120922_FINAL.pdf;
- *Beyond Waste, Fraud and Abuse: The Economic Impact of Increasing Compliance Hurdles for the FCC's Lifeline Program;* The Brattle Group, August 1, 2026 (determining that increasing compliance requirements for participation in the federal low-income communications support program creates measurable economic costs because it diverts resources toward administrative compliance and raises barriers to participation for eligible households) (copy attached).
- Please also see the information reported by each California IOU regarding customers who drop off of CARE enrollment during post-enrollment verification based on failure to provide requested documents rather than any direct finding of ineligibility.

Finally, please note that, in this very proceeding, PG&E has expressed understanding of the difficulties caused by increased administrative burden *on a utility*. This demonstrates a clear recognition that increased requirements for review and documentation create challenges that are not part of a more simplified process:
https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M608/K305/608305628.PDF

Journal of Economic Perspectives—Volume 39, Number 1—Winter 2025—Pages 129–150

Administrative Burdens in the Social Safety Net

Pamela Herd and Donald Moynihan

By the age of five, Abel Sewell had survived cancer and was receiving monthly blood tests to ensure his leukemia had not returned. The tests were covered by TennCare, Tennessee's Medicaid program, until, at a regular doctor's visit, his mother discovered that the coverage had lapsed. Abel's mother spent months fighting to get their coverage restored, ultimately taking out a second mortgage on their home to manage the mounting health care debt that came from being uninsured. The family very much wanted health services, and were willing to endure significant hardships to get it.

The Sewells were not an anomaly. Between 2016 and 2019, almost 250,000 children in Tennessee lost coverage. What happened? The Sewells, like many others, said they never received the TennCare renewal forms. Even those who did receive the renewal packets often struggled to complete the 47 pages (Kelman and Reicher 2019). Failure to return forms accounted for 67 percent of those who lost coverage, and it seems likely that many of them did not receive the forms due to outdated mailing addresses. Late or incomplete forms also resulted in a loss of coverage (Arbogast, Chorniy, and Currie 2022). How should policy researchers and policymakers understand what happened to Abel Sewell and others like him, instances in which a series of bureaucratic obstacles impede access to the very policies intended to help them?

■ *Pamela Herd is Carol Kakalec Kohn Professor of Social Policy and Donald Moynihan is the Ira and Nicki Harris Family Professor of Public Policy, both at the Ford School of Public Policy, University of Michigan, Ann Arbor, Michigan. Their email addresses are pherd@umich.edu and dmoyn@umich.edu.*

For supplementary materials such as appendices, datasets, and author disclosure statements, see the article page at https://doi.org/10.1257/jep.20231394.

Table 1
Categories of Administrative Burden

Learning costs	Time and effort expended to learn about the program or service, ascertaining eligibility status, the nature of benefits, conditions that must be satisfied, and how to gain access.
Compliance costs	Provision of information and documentation to demonstrate standing; financial costs to access services (such as fees, legal representation, travel costs); avoiding or responding to discretionary demands made by administrators; the amount of time spent on these processes.
Psychological costs	Stigma arising from applying for and participating in an unpopular program; loss of autonomy that comes from intrusive administrative supervision; frustration at dealing with learning and compliance costs, unjust or unnecessary procedures; stresses that arise from uncertainty about whether a citizen can negotiate processes and compliance costs; fear about the coercive face of state power.

Source: Adapted from Herd and Moynihan (2018).

There is growing attention to the pervasive problem of safety net benefits left unused by eligible individuals (National Academies of Sciences, Engineering, and Medicine 2023). As Table 2 shows, large fractions of those eligible for key social welfare policies do not actually receive those benefits. In some cases, this might reflect preferences of the client to forgo benefits. A $10 monthly food stamp benefit might not be worth the hassle of applying for and maintaining access to that benefit. But in other cases, especially when client needs are intense, the answer lies elsewhere: perhaps clients never apply for services they are unaware of, mistakenly believe they are ineligible for them, or cannot figure out how to get started. Perhaps they apply, but do not make it through hurdles in the application process: mandatory interviews, demands for documentation, or lengthy and confusing paperwork. They may also lose eligibility for the program when a renewal deadline arises. Even those that access benefits may struggle to use them, due to, for example, the complicated rules regarding what you can buy in food stamp programs, what Barnes (2021) calls redemption costs. At every step, administrative processes might be experienced as stigmatizing, disempowering, frustrating, and stressful.

In this article, we group together these issues under the heading of "administrative burden," which we define as the experience of policy implementation as onerous to the individual. The types of administrative burden costs can be cataloged as learning, compliance, and psychological costs, as shown in Table 1. These frictions are interrelated, and generate similar effects, across a variety of safety net programs.

Why do we need an administrative burden approach to better understand the safety net? As scholars working in interdisciplinary spaces, we have observed researchers from an array of disciplines and specific policy areas offer insights about the origins, nature, and impact of frictions in the operation of public services, but with relatively little communication with one another. The administrative burden

approach is intended to address that problem. It does not rely on a single model, but a set of nested concepts and assumptions about empirical relationships that can be tested. The idea of administrative burden belongs to no single disciplinary field and is relatively recent in origin, and so our summary here is provisional. It offers a framework for those interested in how the public interacts with the state, the resulting consequences, and whether it is possible to restructure those interactions to produce better outcomes.

The article proceeds as follows. We review three core claims of the administrative burden approach. We next compare administrative burdens to other approaches to frictions. We then identify the emergence of a public policy infrastructure, via presidential executive orders and statutory guidance, to address these burdens. Finally, we consider some implications of the administrative burden research for the study of the safety net. While we focus on burdens in the American safety net, people experience burdens across a wide array of government services, and we conclude by discussing their relevance in other countries.

Basic Claims about Administrative Burden

Research on administrative burden is based on three foundational claims: (1) even small administrative burdens can have large effects; (2) administrative burdens can reinforce and exacerbate inequality; and (3) administrative burdens can be policymaking by other means. While we focus on the cost of burdens, it is important to note that burdens can be justified by other public service goals, such as minimizing fraud. Decisions on policy design and implementation should, however, be informed by evidence of the negative and positive effects of bureaucratic practices that generate burden, as well as a search for less onerous alternatives that satisfy core policy goals.

Small Burdens, Big Effects

Asking someone to complete a seemingly simple administrative process can prove a significant impediment, even when it is rational for individuals to complete that process. A public health insurance system that required individuals to pick and enroll in a plan—after having been deemed eligible for free coverage—led to a 33 percent drop in coverage compared to a system of automatic enrollment (Shepard and Wagner 2022). Simply removing Medicaid recipients' renewal requirements during the Covid-19 public health emergency led to a greater increases in health insurance coverage than the Patient Protection and Affordable Care Act of 2010, the most visible and contentious extension of public health insurance in decades (Dague and Ukert 2024). Indeed, when the public health emergency ended, nearly one-third of Medicaid beneficiaries lost their coverage once they were put through renewal processes again (Tolbert and Corallo 2024). It was not simply that people were no longer eligible. Over 70 percent of those disenrolled were for procedural reasons, such as missing paperwork (Tolbert and Corallo 2024). States

Table 2
Take-Up Rates of Large Safety Net Programs

Program	*Take-up rate*
Supplemental Nutrition Assistance Program	82%
Medicaid	50% for adults, 65% for children
Temporary Assistance to Needy Families	28%
Earned Income Tax Credit	77%

Source: National Academies of Science, Engineering, and Medicine (2023, pp. 128–29).

vary widely in these procedural denials, from a low of 23 percent in Maine to over 90 percent in states like Nevada, Utah, and New Mexico, which is consistent with burdensome processes, rather than eligibility rule themselves, as a key driver (Guth et al. 2023).

Even discrete steps within larger administrative processes can have large effects. In a study of the Supplemental Nutrition Assistance Program, commonly known as "food stamps," Homonoff and Somerville (2021) focused on the requirement to complete an interview with a caseworker as part of the annual process to ensure clients were still eligible. They found that clients who had a smaller time window to complete the interview, compared to those who had a larger window, were 22 percent less likely to get through the recertification process and continue to receive benefits. Conversely, efforts to reduce such frictions can have large impacts. An experiment that used administrative data to pre-fill forms for student loan recipients who were eligible to receive reduction in their loan payments increased take-up from 24 percent among those not receiving pre-filled forms to over 60 percent among those receiving pre-filled forms (Mueller and Yannelis 2022).

Burdens Can Reinforce Inequality

Speaking broadly, programs that target benefits to low-income, racially marginalized, and disabled populations tend to shift more of the administrative burdens for proving eligibility to individuals than do programs that confer benefits to higher income, white, and able-bodied individuals (Herd et al. 2023; National Academies of Sciences, Engineering, and Medicine 2023, pp. 132, 134–135; Herd and Johnson 2024; Ray, Herd, and Moynihan 2023). For example, Social Security retirement benefits have low administrative burdens, with the government collecting lifetime earnings data and automating most of the processes that determine eligibility and benefit size (Herd and Moynihan 2018). Nearly 100 percent of those eligible receive the benefit. In contrast, the Supplemental Security Income program, which benefits low-income, blind, disabled, and elderly individuals, is rife with complicated paperwork and documentation for participants to manage, with take-up rates around 60 percent for low-income older adults (McGarry and Schoeni 2015). In another example, the tax subsidies that individuals receive for employer-based health insurance coverage are nearly equivalent to Medicaid

spending for low-income Americans, but while those receiving employer-based health insurance face no burdens to access that subsidy, the burdens are extraordinarily high for those accessing Medicaid (CBO 2024).

Beyond the greater presence of burdens in means-tested programs, groups may be reluctant to engage with administrative processes because of concerns about discrimination or other negative outcomes. For example, during the first Trump administration, when anti-immigration statements accelerated rapidly and general burdens in Medicaid increased (Barofsky et al. 2020), Hispanic families became less likely than non-Hispanic families to access health insurance, along with families that included a noncitizen (Arbogast, Chorney, and Currie 2022).

Those funneled into programs with higher administrative burdens also appear to be, on average, less likely to navigate those burdens successfully to access benefits; those who might most need help may also struggle the most to overcome burdens they experience in seeking the help (Christensen et al. 2020). A National Academies of Sciences, Engineering, and Medicine report (2023, p. 134) concludes, "Because these safety-net-programs are aimed at low-income families, the problem of cognitive barriers is particularly relevant: lower-than-average levels of education and literacy are common for this population, yet the administrative complexity of applying for the programs and continuing to receive benefits is significant. Low-income individuals and families often cope with significant daily life challenges, so limited attention is a significant factor for this population." Skills such as education may matter because they capture "administrative capital," which refers to the skills and knowledge an individual has to negotiate administrative spaces (Masood and Nisar 2021). Poor health (including mental health) and disability make it harder to navigate administrative requirements (Bell et al. 2023). For example, using a natural experiment based on closure of Social Security field offices, Deshpande and Li (2019) find that such closures discourage applications from clients with lower education, earnings, and with moderately severe disabilities. In the study mentioned earlier about interview completion to maintain eligibility for the Supplemental Nutrition Program, Homonoff and Somerville (2021) find that the lowest income individuals are the least likely to complete such an interview.

Burdens as Form of Policymaking

Administrative burdens generate policy effects: sometimes intended, sometimes not. In either case, the opaque nature of state actions that give rise to administrative burdens—which often depend upon complicated or obscure administrative processes—can make them especially attractive to policymakers. For example, anti-abortion legislators used a series of burdens, on both individuals and clinics, to restrict, in practice, access to legal abortions (Herd and Moynihan 2018, 2024). Burdens can also serve to ration services for policymakers seeking to minimize spending. Conversely, state actions that give rise to burdens may fail to achieve their stated purpose. As we discuss in greater detail below, the administrative burden involved in work requirements is often justified as a means to increase employment,

but it often fails to achieve this goal while making it harder for eligible clients to receive benefits and services.

Comparing Administrative Burden to Other Approaches to Frictions

There are other ways of thinking about frictions (for a review, see Madsen, Mikkelsen, and Moynihan 2022). We review two alternative approaches: "ordeal mechanisms" and "sludge." Both are rooted in economic theory, but, as we will describe, they come to different conclusions regarding the relative value of administrative burden in social welfare programs.

Ordeal Mechanisms

Ordeal mechanisms originated in the economics literature focused on social policy. The original paper that coined the term defined these ordeals as the imposition of "deadweight costs" on individuals applying for public programs (Nichols and Zeckhauser 1982, p. 372). The appeal of ordeals was that they could serve as another way, beyond eligibility requirements, to target benefits more efficiently (Heinrich et al. 2022).

The ordeal mechanism approach assumed that individuals encountering burdens behave rationally. Those who do not truly need a service will be put off by the hassles and will exit out of burdensome processes. Burdens become the price, paid in time or other hassles, for obtaining a benefit, and needier individuals are willing (and able) to pay this price. In sum, "[t]he demeaning qualification tests and tedious administrative procedures involved in many [social welfare] programs may serve such a sorting function" (Nichols and Zeckhauser 1982, p. 372).

The administrative burden approach, in contrast, casts doubt on the value of burdens as a way to target benefits more effectively. Instead, it assumes that the ability (or inability) to overcome burdens will be driven by factors other than individual preferences and the relative value of time. For example, peoples' ability to navigate complicated administrative requirements may be affected by things such as educational attainment, financial resources, and experiences of poor health or scarcity. Those with fewer resources may have less bandwidth to engage with or complete forbidding or complex administrative processes, even if they deeply value or need the benefits that might follow (Christensen et al. 2020; Mullainathan and Shafir 2013).

Of course, whether or not ordeals improve targeting, or increase inequality, is an empirical question. But recent evidence challenges whether burdens are efficient at targeting. For example, time diary studies reveal that people with poorer health spend more time on administrative tasks and report more negative well-being because of their experiences with burdens (Martin, Delaney, and Doyle 2023). There is also evidence that burdens loom larger for public-service clients who report poorer mental and physical health, increasing their tendency to withdraw from programs (Bell et al. 2023; Deshpande and Li 2019).

Apart from the empirical effects of ordeals, any effort to use administrative hassles as a targeting tool raises a particular set of normative concerns. Policymakers design programs with specific eligibility requirements. Adding administrative requirements to limit access to individuals who meet those legal requirements raises questions about fairness in a democratic system. It is one thing to use an ordeal mechanism with the idea that it will discourage millionaires from consuming resources also used by lower-income clients; it is another to discourage a group of lower-income clients from claiming benefits *to which they are legally entitled* and from which they may benefit. A growing body of evidence that administrative burdens weigh most heavily on those with lower levels of human capital and health raises fundamental questions about how ordeals worsen equity in the delivery of public services.

Sludge

Sludge emerged from the growing field of behavioral economics, which has increasingly shown that people do not always make optimal decisions, due to a mixture of cognitive and psychological biases, to maximize their overall welfare (Tversky and Kahneman 1974; Thaler and Sunstein 2009). This approach challenges the assumption behind the ordeals approach, which is that people who need and want benefits will actually navigate burdensome processes.

Specifically, sludge refers to "[e]xcessive or unjustified frictions that make it difficult for consumers, employees, employers, students, patients, clients, small businesses, and many others to get what they want or to do as they wish" (Sunstein 2022, p. 656). The name "sludge" consciously echoes the "nudge" focus of behavioral economics, as in Thaler and Sunstein's (2009) eponymous book. The right "choice architecture," or a nudge, can help us overcome common human biases, like our tendency towards inertia or our cognitive limitations, so that we can make better choices. Sludge, present in both the public and private sector, instead exacerbates these human biases and limitations. Sunstein (2021, 2022) calls for regular "sludge audits" to address such problems, reflecting the point that governments typically do not revisit the need and value of rules and processes that have accumulated over time.

There is much in common between the administrative burden and sludge perspectives. Indeed, the burden approach draws from the insights of Thaler and Sunstein (2009), and also pioneering work by Moffitt (1983) on stigma and Currie (2006) on the reasons why individuals do not take up benefits. But there are some distinctions between the sludge and administrative burden framework. First, the administrative burden literature is more attentive to the political economy of frictions, including the political origins and feedback effects of state actions that beget burdens, such as how burdens can be "policymaking by other means" (Baekgaard, Halling, and Moynihan 2024; Baekgaard, Moynihan, and Thomsen 2021; Herd and Johnson 2024; Herd and Moynihan 2018). Second, the administrative burden work is more centered on the relationship between burdens and inequality, and also how inequality can instigate and reinforce burdens. For

example, burdensome requirements are more prevalent in programs where beneficiaries are largely poor and racially marginalized women than in programs that benefit wealthier white men (Ray, Herd, and Moynihan 2022; Herd and Moynihan 2024).

Ultimately, the idea that frictions matter is relatively intuitive. Researchers working on the topic can draw from multiple approaches, and their choices may reflect disciplinary training or other factors (as discussed in the review of frictions in Madsen, Mikkelsen, and Moynihan 2022). Ordeal mechanisms suggest that using hassles to ration safety net benefits may significantly counterbalance any costs, making this an attractive approach for policymakers who want to limit spending. Conversely, a sludge approach suggests that simplifying safety net administrative processes to reduce costs of time and learning is worthwhile. But research on administrative burden points to the need for significant structural and organizational changes, as well as identifying when the roots of that administrative burden lie in political and value-based debates. Moreover, directing attention to the specific types of costs people encounter in safety net programs provides a framework for clarifying what constitutes the burden, as well as how to identify and design interventions to address it.

A Public Policy Infrastructure for Reduction of Administrative Burden

Attention to administrative burden has been growing, not only in research, but also in broader policy and practice. The administrative burden approach invites policymakers to reconsider existing policy designs, such as overly complicated eligibility criteria for programs, by considering the implementation of these policies from the perspective of users. But while we can reduce (or add) burdens via legislation, federal and state executive agencies can also significantly affect these burdens by changing institutional and organizational practices.

In recent years, an administrative burden policy framework has emerged at the federal government level, relying on executive orders, legislation, and agency guidance to signal the goal of burden reduction, as well as to provide agencies with the authority to enact change. Among the first executive orders that President Joseph Biden (2021a) signed, which was primarily focused on racial equity, tied reduction of administrative burden to inequality. Later that year, Biden (2021b) signed a second executive order that was even more explicit, stating, "Agencies must work with the Congress; the private sector and nonprofit organizations; State, local, Tribal, and territorial governments; and other partners to design experiences with the Federal Government that effectively reduce administrative burdens, simplify both public-facing and internal processes to improve efficiency, and empower the Federal workforce to solve problems." Attention to burden reduction was also incorporated into the Government Service Delivery Improvement Act signed by President Biden in early 2025.

While there have been prior efforts to improve customer service in government, the emerging policy infrastructure emphasis is different in three important ways. First, the connection between customer experience and inequality is new. Second, current efforts draw more directly from social science to inform its approach, rather than relying on business principles (US Office of Management and Budget 2021). Third, the current approach is more deeply embedded into existing administrative processes, and therefore less likely to fade away with a new president. Circular A-11, the budget guidance that every agency must follow, was also revised to direct agencies to report on burden reduction efforts (US Office of Management and Budget 2022). Guidance for the Paperwork Reduction Act, overseen by the Office of Information and Regulatory Affairs, was revised to encourage agencies to do more to identify learning, compliance, and psychological costs, and to reduce administrative burdens (US Office of Information and Regulatory Affairs 2022). The 21st Century Integrated Digital Experience Act of 2018 has been used to push agencies to create accessible and inclusive designs for all abilities. The Biden administration also drew on the Plain Writing Act of 2010 to push agencies to communicate clearly and concisely, as well as to encourage comments from the public on areas for improvement.

Bureaucracies have traditionally had few incentives to understand how they impose costs on members of the public. Creating leadership momentum, a policy infrastructure, and a set of tools to allow them to do so can help address this problem. For example, the Department of Homeland Security successfully achieved a goal of reducing 20 million hours of citizen time spent interacting with the agency (US Executive Office of the President 2023). The policy infrastructure of identifying administrative burdens, so that they can be reduced, has been created quickly. How it will evolve remains to be seen. In his first term in office, President Trump (2018) signed an executive order that called for more work requirements to be placed on safety net programs. Political disagreement about the size and value of safety net policies, and the communities they serve, may therefore lead them to take different approaches to supporting or opposing administrative burdens (Herd and Moynihan 2018). But for federal officials interested in burden reduction, a coherent policy framework now exists, one that state and local governments can choose to follow.

Implications for the Safety Net

Giving greater attention to administrative burdens can change how the policy design of safety net programs is understood, encouraging systems that will not become weighed down by unnecessary requirements. Similarly, attention to administrative burdens points to a problem with federalism, in which each level of government adds opportunities for new frictions, as well as problems with privatized and fragmented service delivery mechanisms that create confusion rather than generate competitive behaviors that benefit clients (Goldstein et al. 2023; Herd

et al. 2023). The policy design lessons that follow also offer a useful agenda for researchers interested in evidence on how burdens matter and how to reduce them.

Avoid Predictably Ineffective State Actions

Not all administrative burdens are equal. Some have large negative effects on access, while providing few benefits. In particular, policy design motivated by the actions of a small population or by unusual situations, but which create frictions for a large population of eligible beneficiaries, will predictably lead to large costs with limited positive effects. Such state actions often reflect concerns about legitimate political values, such as minimizing fraud. But policymaking is, or should be, about both facts and values, and the research can bring evidence to the table about tradeoffs. The question "are we going to tolerate any fraud?" is very different from the question of "how much fraud are we willing to tolerate given impacts on access?" The latter question implies a willingness to consider tradeoffs, which in turn requires evidence. Private companies, such as credit card companies or grocery stores, make these tradeoffs all the time, accepting some measure of theft or fraud rather than imposing a set of requirements that make services impossible to access. Some examples clarify this point in the context of safety net programs.

Asset tests, or restricting eligibility to those with low (or no) assets (such as a home or savings), are an example of a predictably ineffective state action driven by fraud concerns. The target population of asset tests in poverty-based programs is presumably low-income individuals who are seeking safety net benefits but have significant wealth. In practice, this group is mostly confined to a relatively small group of older adults, but imposing asset tests on all generates significant costs (Ratcliffe et al. 2016). States that removed asset tests for the Supplemental Nutrition Assistance Program saw a 20 percent reduction in administrative costs and no increase in fraud, while increasing participation of those previously eligible by streamlining administrative processes (Lin 2023). In this setting, the administrative burden of asset tests raised program costs and offered little value in reducing fraud.

Another value-based concern is that those receiving benefits should be employed if they are able. Key parts of the existing social safety net, including Temporary Assistance to Needy Families (TANF), the Earned Income Tax Credit, and the Child Tax Credit are already tied to work. Policymakers disagree about expanding work requirements for food stamps (SNAP) and introducing new work requirements for health insurance programs like Medicaid (Herd and Moynihan 2021; Haeder and Moynihan 2023).

Work requirements assume a population of individuals who could be employed, but choose to rely on welfare benefits instead. Moreover, they assume a population that is not already subject to work requirements under other welfare programs. In practice, this population is very small.

Additional work requirements do little to spur additional labor force participation. For example, just 6 percent of those on Medicaid are nonemployed and nonelderly clients who would not qualify for an exemption from work requirements, and one-third of those 6 percent are retired (Guth et al. 2023). There is

little evidence that work requirements in the Supplemental Nutrition Assistance Program have substantially increased labor force participation. However, such requirements have caused vulnerable groups, such as the homeless and those with chronic health conditions, to lose benefit access (Cook and East 2024; Cuffey, Beatty, and Mykerezi 2022; Gray et al. 2023; Han 2022; Ndumele et al. 2024). For this reason, some safety net advocates characterize work requirements as "work reporting requirements," to communicate that the consequential aspect of the regulation is the paperwork burdens, not on actual labor force participation.

When Arkansas adopted Medicaid work requirements, 95 percent of those targeted by the program were already employed or should have been exempted due to disability, but the work requirements in the state reduced Medicaid enrollment by 12 percentage points (Sommers et al. 2019). About one-third of those who lost coverage, who were disproportionately those with lower education, were simply unaware of the new requirements. The work requirements did not increase labor force participation. However, half of those who lost Medicaid coverage reported serious problems paying off medical debt, 56 percent delayed care due to cost, and 64 percent delayed taking medications because of cost (Sommers et al. 2020).

Policymakers should be able to gather information to understand which administrative burdens are having disproportionately negative effects. For example, the Biden administration altered its approach to requiring annual income verification processes for a student loan forgiveness program for people with disabilities, pointing to evidence that this requirement led to half of participants losing benefits, even though fewer than one in ten actually become ineligible because of income changes (US Executive Office of the President 2023). The administrative burdens of state actions like asset tests or work requirements—and the effects of these burdens on program participation—are not unanticipated (Cook and East 2024). If policymakers ignore this evidence, it suggests that they are using administrative burdens to engage indirectly in policymaking about the size and scope of a safety net program.

Shift Burdens from the Individual to the State

Social welfare programs are characterized by conditionality—that is, eligibility criteria that individuals must meet to access benefits. The question is who absorbs the costs of ensuring those criteria are met. The administrative burden literature suggests various approaches to reduce the costs associated with burdens, often by shifting more of the responsibilities of ensuring access to social welfare benefits away from individual beneficiaries and onto the state (Herd et al. 2013).

There are two broad approaches regarding how the state can reduce administrative burden for individuals. First, the state can provide help to people to navigate complicated administrative systems. Caseworkers, for example, provide social welfare beneficiaries significant support navigating the complicated US social welfare system. Low-income individuals trying to access tax benefits designed for them, such as the Earned Income Tax Credit, rely on tax preparers to help navigate that process. The state can pay for or incentivize private actors to offer help, such as

health insurance navigators. Of course, private or nonprofit third-party actors can help clients manage this burden, either for a fee or out of a sense of solidarity.

A second approach to reducing burdens is for the state to change the administrative systems that deliver social welfare programs. The simplest approaches are informational nudges, such as notifying people they may be eligible for a program or explaining how to use their benefits. This reduces learning costs for potential clients. This low-cost approach is popular, partly because it is easy to adopt, and partly because it fits with a behavioral-economics perspective on change. However, "the evidence on the effectiveness of low-cost nudges to encourage participation is mixed, with some interventions showing modest effects on take-up but others showing no significant effect or any effect" (National Academies of Sciences, Engineering, and Medicine 2023, p. 135; DellaVigna and Linos 2022).

More fundamental changes to administrative systems are typically required to substantially reduce administrative burdens for the public. Such changes require a will and capacity to change how the government operates, rather than simpler interventions like sending texts to clients. One of the most effective strategies is automatic enrollment—or process changes that move in that direction (Fox, Stazyk, and Feng 2020; Herd et al. 2013). Indeed, our largest and most effective poverty reduction policy, the Social Security retirement program, does this. Individuals are enrolled into the Social Security retirement benefits by default (Herd and Moynihan 2018). The program is very complex in terms of how eligibility and benefits are determined, but feels simple to the user because the state has organized a machinery to record their earnings and payroll tax contributions over the course of their lives. Automatic enrollment (and recertification) effectively reduces, and even eliminates, learning, compliance, and psychological costs. There has also been movement in low-income programs like Medicaid, where people have to annually demonstrate they are still eligible, to automate that "recertification" process when states have the data they need (such as within their tax administrative systems) to see whether individuals are still eligible (Volkov et al. 2024). In short, rather than requiring Medicaid beneficiaries to provide the paperwork and documentation to prove they are still eligible, states internally verify eligibility with their existing administrative data.

Technology: Reducing or Causing Administrative Burden?

Shifting burdens onto the state via automatic enrollment requires a monitoring regime to ensure that any such system actually works to reduce burdens. It is helpful to distinguish between automatic enrollment and renewals as a specific tactic and the more general trend toward automation of administrative processes, which has a mixed record. Indiana tried to automate eligibility processes that had been handled by individual caseworkers (Wu and Meyer 2023). Indiana Governor Mitch Daniels contracted with IBM to use technology to resolve what he characterized as issues of fraud, error, and poor service. The use of automation allowed remote applications and approvals, which reduced compliance costs. But the resulting systems were inflexible and error-ridden, increasing burdens on clients and leading to large

decline in enrollments for the Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, and Medicaid. The declines were especially large in higher poverty counties, and even when the state abandoned the automated system, the enrollment declines became permanent.

In a critique of the Indiana system, Eubanks (2017) notes that the automated system overwhelmed caseworkers who were unprepared to work with it, removed their knowledge of clients, and denied them discretion to resolve problems. Automation can generate "digital cages," trapping people in virtual processes where they cannot find human support (Peeters and Widlak 2018). Such failures are more likely to occur when the digital interfaces are poorly designed, when outcomes are not monitored by humans to detect errors or manage appeals, and if the political principals and/or designers of the system are indifferent to imposing burdens on the public. Clients and caseworkers experience the costs and errors of inflexible administrative systems, which may take years to detect and fix.

An appropriate degree of skepticism about the limits of technology, and the ways in which it can go wrong, should not diminish attention to the ways that technology can help to reduce burdens in the safety net. Well-designed digital interfaces and back-end processes can reduce learning, compliance, and psychological costs. There are promising tactics to reduce burdens in the context of improvements to digital interfaces (for example, Moynihan et al. 2022; Giannella et al. 2024). The type of automatic enrollment relies on optimized back-end technologies that allow for accurate and efficient data matching for programs like Medicaid (Herd and Moynihan 2023a). In sum, technology is a tool—it can reduce or exacerbate administrative burdens. Increasingly, government has a digital face, meaning the role of technology becomes ever more central to how burdens are experienced.

Street-Level Bureaucrats Can Buffer or Impose Burdens

While technology and automation will play a larger role in the administration of the safety net, understanding the role of caseworkers and other public officials embedded in these systems remains important. To the degree that "street level bureaucrats" (Jilke and Tummers 2018) have discretion, their judgment, behaviors and decisions can alter the experiences and outcomes of clients (Barnes and Henly 2018). For example, individual caseworkers can have significant effects on the probability of approval for the Supplemental Nutrition Assistance Program for the clients they are assigned, even under conditions where the caseworkers appear to have limited discretion to make decisions (Cook and East 2023).

Understanding what motivates these officials and how they use their discretion is relevant for understanding administrative burdens. Audit studies, which reveal that street-level bureaucrats may engage in discriminatory practices when dealing with the public, can usefully consider the role of burdens as a mechanism of discrimination. For example, administrative actors can use their discretion to provide or withhold information to clients (affecting learning costs), to add more demands and offer little help with documentation processes (affecting compliance costs), or

offer a more or less welcoming tone (affecting psychological costs) (Olsen, Kyhse-Andersen, and Moynihan 2022).

Program Shifts since Welfare Reform: Lower Burdens, Increased Inequality

An administrative burden approach also offers a mixed assessment of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996—better known as the "welfare reform act"—and its aftermath (Herd and Moynihan 2023a). A major shift in the 1996 act, along with toughening work requirements, was that states received the federal share of Temporary Assistance to Needy Families funds as a block grant—and have considerable freedom to regarding how to spend the money. A growing body of evidence suggests that the high level of discretion that states have, alongside with a wide array of complex programs, has led to substantial burdens in the programs funded by TANF (Herd and Moynihan 2023b). For example, the programs complex array of requirements means that high fractions of participants, as many as 50 percent in Wisconsin, were sanctioned for failing to meet them, with black individuals more likely to be sanctioned (Wu et al. 2006).

At the same time, other aspects of the safety net have grown more quickly, and often feature fewer administrative burdens. For example, before the 1996 welfare reform act, eligibility for the Supplemental Nutrition Assistance Program ("food stamps") had been attached to cash welfare. After welfare reform, claimants had to go through a separate process to claim food stamps (Herd and Moynihan 2018). At first, the new administrative burdens led to substantially lower take-up. But a sustained effort to reduce these burdens was successful (Ganong and Liebman 2018).

The Earned Income Tax Credit and the Child Tax Credit have no separate administrative process that clients must negotiate to access benefits. A good example of their ability to minimize administrative burden occurred during the pandemic, when a temporarily expanded Child Tax Credit proved startlingly successful in reducing poverty and food insecurity (Parolin et al. 2023). Much of this success came from being able to deliver the benefit quickly via the tax system. Moreover, the federal government did not wait for people to apply; it automatically enrolled them. But those with the lowest incomes, who are not legally required to submit taxes, did not benefit from such automatic enrollment and had to apply for the Child Tax Credit separately. Not surprisingly, they benefited from the expansion of that credit at much lower rates than those connected to the tax system. In this way, the full poverty-reducing effects of the Child Tax Credit expansion was blunted by not being able to reach the poorest beneficiaries (Herd and Moynihan 2023a).

Beyond Take-Up and Recertification

The emerging literature on administrative burdens has centered to a great degree on how burdens affect "take-up," or whether people enroll in programs for which they are eligible, and on recertification, which refers to whether people are able to maintain that eligibility when reassessed on a biannual or annual basis. This

focus is understandable, but the scope of administrative burdens, as well as their impacts, is broader.

For example, even those who (eventually) access safety benefits may still experience administrative burdens, including loss of time, stress, and anxiety. Reducing the "time tax" that people lose in citizen-state interactions, or negative psychological experiences, has value in and of itself (Lowery 2021).

People can also experience administrative burden when trying to use their safety net benefits, which Barnes (2021) refers to as "redemption costs." For example, the Supplemental Nutrition Assistance Program and Special Supplemental Nutrition Program for Women, Infants, and Children (commonly abbreviated as WIC) have a lengthy list of requirements regarding what food people can and cannot buy, down to the size of the container (Barnes 2021). Medicaid recipients sometimes face obstacles finding and getting an appointment with a doctor that accepts Medicaid (Office of Inspector General 2014). Individuals using Medicaid home and community-based long-term care services face significant hurdles accessing services for which they have been deemed eligible, in large part due to worker shortages linked to low pay (Herd and Johnson 2024).

Those receiving safety net benefits can also experience administrative burdens when targeted by audit mechanisms to verify they have not engaged in fraud (Peeters and Widlak 2023). For example, the Earned Income Tax Credit involves a relatively low-burden application process, but recipients are much more likely to face audit processes that can be difficult to overcome (Herd and Moynihan 2018). Thus, research on administrative burdens considers a broader array of experiences, beyond take-up, better measuring experiences of burden as a topic in its own right across a wider array of venues beyond application and renewal processes (for example, Barnes 2021; Jilke et al. 2024).

It is also the case that administrative burdens likely have downstream effects, beyond immediate participation and use of benefit or service. For example, administrative burdens that hinder access to social safety net programs likely affect long-term health and financial well-being (Herd and Moynihan 2020). Burdens might also shape people's political beliefs, identities, and participation. More negative citizen-state encounters might sap trust in public services, and government more generally (Michener 2018).

In addition to considering the political consequences of administrative burdens, we might consider their political origins. To what degree do they reflect "policymaking by other means"—like a mandate to hold down costs or to benefit some groups over others—rather than a function of bureaucratic inattention (Herd and Moynihan 2018; Herd and Johnson 2024)? Why are persistent administrative burdens tolerated by policymakers, caseworkers, and the mass public (Baekgaard, Moynihan, and Thomsen 2021; Baekgaard, Halling, and Moynihan 2024)?

An International Dimension

While much of the administrative burden research has focused on the safety net in high-income countries, especially the United States, these challenges are likely to

be even greater in developing nations, due to a mixture of more limited government capacity to manage burdens and limits on individual access to the resources to overcome burdens (Heinrich 2016; Banerjee et al. 2021). Some of the most insightful empirical work on improving safety net systems comes from such settings, where a variety of experimental interventions have sought to improve the flow of benefits to clients. In some cases, these interventions seek to minimize the risk of corruption among public officials, with the effect of making the administrative processes easier for clients by removing points where officials may siphon off resources or solicit bribes (Nieto-Morales, Peeters, and Lotta 2024). Other cases involve the use of new technologies to bypass outdated or under-resourced administrative processes.

For example, Muralidharan, Niehaus, and Sukhtankar (2016) point to the use of biometric data in anti-poverty programs in India as a means to increase state capacity to reduce "leakage" of benefits, but the program also reduces burdens on clients to provide documentation. Provision of program information to beneficiaries increased subsidies provided to them, reducing learning costs about benefits in a way that allowed citizens to more successfully claim benefits (Banerjee et al. 2018). Help in registering for public health insurance increased take-up in Indonesia, but even with help, people continued to struggle to manage unwieldy processes, unreliable administrative data, and distant in-person offices: "In short, administrative capacity constraints generate hassle costs that suppress demand" (Banerjee et al. 2021, p. 3038). It is not just about capacity. Qualitative work in settings as varied as Pakistan and Mexico points to how citizen understanding of administrative burdens, and strategies to manage them, reflect local cultural norms (Masood and Nisar 2021; Peeters et al. 2018). Such research enriches our understanding of the relationship between state capacity, local culture, and safety net systems, and may build additional conceptual linkages to other studies by clarifying the administrative burden aspect of such work.

Conclusion

If more economists are, as Duflo (2017) urges, to become as useful as plumbers, tinkering and adjusting with existing policy systems, the administrative burden approach offers some useful tools to understand why these burdens matter, how to identify them, and how to fix them. The approach also provides a distinctive orientation for policymakers towards identifying and reducing burdens, viewing them as damaging to program goals, client outcomes, as well as devaluing the time of citizens. Indeed, the language of "administrative burden," as drawn from scholarship and used by policymakers, offers a bridge between these communities.

The administrative burden approach invites a relatively broad research agenda. Some of these questions will be relatively straightforward extensions of behavioral perspectives. For example, why do people not access services they want and desire? What are the heterogeneous effects of current structures? How does this relate to inequality despite seemingly neutral systems? What are ways to make it easier for

people to access those services? In particular, what role can technology play as a means to reduce burdens (or in some cases, increase burdens)? Extending take-up analyses to consider the downstream effects of burdens on, for example, public health, as well as a deeper understanding of the political economy of burdens offers an opportunity to extend the research framework.

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Beyond Waste, Fraud and Abuse: The Economic Impact of Increasing Compliance Hurdles for the FCC's Lifeline Program

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August 1, 2026

NOTICE

- This white paper reflects the perspectives and opinions of the authors and does not necessarily reflect those of The Brattle Group's clients or other consultants. However, we are grateful for the valuable contributions of [list specific names or write "many consultants of The Brattle Group"].
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NOTICE AND DISCLOSURES

- This white paper reflects the perspectives and opinions of the authors and does not necessarily reflect those of The Brattle Group's clients or other consultants. However, we are grateful for the valuable contributions of Yong Paek, Peter Christenson, and Joseph Suharno.
- Where permission has been granted to publish excerpts of this white paper for any reason, the publication of the excerpted material must include a citation to the complete white paper, including page references.
- This research was not funded, commissioned, or otherwise supported by any third party. The authors are consultants and provide paid consulting services to organizations with interests in spectrum policy, spectrum valuation, wireless communications, and related matters. The views expressed in this paper are solely those of the authors.
- Artificial intelligence tools were used to support the research, coding, and drafting stages of this paper. The authors directed and controlled all analyses and take full responsibility for the paper's content and any remaining errors.

Abstract

The Federal Communications Commission has proposed reforms that would substantially tighten eligibility requirements under the Universal Service Fund Lifeline program. While efforts to reduce waste, fraud, and abuse in the Lifeline program are both appropriate and necessary to preserve public trust and fiscal discipline, there is a risk that overly stringent eligibility, verification, or usage requirements could unintentionally suppress broadband adoption among the most vulnerable households. The paper examines the economic trade-off between reducing improper payments in the FCC's Lifeline program and preserving broadband affordability for eligible low-income households. It argues that the policy debate should not focus solely on eliminating fraud, but rather on balancing Type I errors (providing benefits to some ineligible households or tolerating limited fraud) against Type II errors (excluding eligible households through more burdensome eligibility and verification requirements).

To evaluate the economic consequences of alternative policy approaches, the paper uses Brattle's BEYOND computable general equilibrium (CGE) model to compare five scenarios: eliminating Lifeline entirely, tolerating limited inefficiency through either improper payments or fraud, and increasing compliance burdens by doubling or tripling enrollment verification requirements. The results indicate that Lifeline program generates a GDP increase by 1.48 billion from the $943 million spending. The paper finds that modest levels of inefficiency have relatively small macroeconomic effects. By contrast, substantially increasing compliance requirements imposes measurable economic costs because it diverts resources toward administrative compliance and raises barriers to participation for eligible households. The paper concludes that, for the levels of inefficiency examined, the economic costs of significantly tightening enrollment and verification requirements exceed the benefits of eliminating a relatively small amount of improper payments. It therefore argues that policymakers should seek to minimize the combined costs of fraud and administrative burden rather than pursue a zero-fraud objective irrespective of its broader economic consequences.

I. Introduction

Affordable access to broadband has become an essential component of participation in the modern economy. High-speed connectivity enables individuals to search for employment, participate in education and workforce training, access telehealth services, communicate with employers and government agencies, conduct financial transactions, and participate in civic life. As economic and social activities have become increasingly digital, policymakers have increasingly recognized broadband as critical infrastructure whose benefits extend well beyond individual users. These benefits include higher labor productivity, increased workforce participation, improved educational attainment, enhanced business formation, and broader economic growth. Consequently, improving broadband adoption has become a central objective of federal communications policy.

While broadband infrastructure deployment has expanded substantially over the past decade, affordability remains one of the principal barriers to broadband adoption among low-income households. The Federal Communications Commission ("FCC") has long recognized that availability alone does not ensure meaningful access.[1] Even where broadband service is available, recurring monthly service charges may place Internet access beyond the reach of economically vulnerable households. To address this challenge, the FCC administers the Lifeline program, one of the four Universal Service Fund ("USF") programs, which provides monthly subsidies to eligible low-income consumers for voice and broadband services.[2] Established in 1985 as a telephone affordability program, Lifeline has evolved alongside communications technology and today serves as the federal government's primary long-standing broadband affordability program.[3]

The importance of affordability subsidies became particularly evident during the COVID-19 pandemic. Congress created the Emergency Broadband Benefit ("EBB") in 2021, which subsequently evolved into the Affordable Connectivity Program ("ACP") under the Infrastructure

[1] FCC, "In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion," 2024 Section 706 Report, Adopted March 14, 2024, GN Docket No. 22-270, https://docs.fcc.gov/public/attachments/FCC-24-27A1_Rcd.pdf.

[2] FCC, "Universal Service: Low-Income Consumers," last accessed July 27, 2026, https://www.fcc.gov/general/universal-service-low-income-consumers.

[3] FCC, "Lifeline Program for Low-Income Consumers," last accessed July 27, 2026, https://www.fcc.gov/general/lifeline-program-low-income-consumers.

Investment and Jobs Act.[4] At its peak, the ACP provided broadband subsidies to more than 23 million households nationwide before its funding expired in 2024.[5] A Benton Institute survey estimated that approximately 13 percent of ACP recipients expected to disconnect broadband entirely, while an additional 36 percent planned to downgrade their service after the subsidy ended.[6] The Benton survey also found that 53% of low-income households reported difficulty affording broadband even while ACP was available and 43% were considered "subscription vulnerable," meaning they had previously experienced service disconnections, struggled to pay broadband bills, or lived near the poverty line.[7] It also estimated aggregate consumer benefits declining by more than $2 billion annually.[8] The expiration of the ACP renewed attention to the role of federal affordability programs in maintaining broadband adoption among economically vulnerable households and highlighted the continuing importance of Lifeline as the nation's remaining permanent broadband affordability program.

At the same time, broadband affordability programs have become the subject of renewed policy debate. The current FCC has emphasized the importance of ensuring that USF resources are administered efficiently and that taxpayer-supported programs are protected against waste, fraud, and abuse.[9] FCC Chairman Brendan Carr has argued that because Americans contribute billions of dollars annually to support Universal Service programs, the Commission has a responsibility to ensure that these funds are directed only to eligible beneficiaries.[10] In 2026, following an FCC Office of Inspector General advisory identifying weaknesses in certain eligibility verification processes, the Commission initiated a rulemaking to strengthen Lifeline program integrity through additional eligibility verification and enforcement measures.[11]

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4 FCC, "Affordable Connectivity Program," last accessed July 28, 2026, https://www.fcc.gov/affordable-connectivity-program.

5 Figliola, Patricia Moloney, "The End of the Affordable Connectivity Program: Options for Consumers and Congress," Congress.gov, published May 13, 2025, https://www.congress.gov/crs-product/IF12637, ("The End of the Affordable Connectivity Program: Options for Consumers and Congress").

6 https://www.benton.org/content/acp-expiration-means-billions-lost-savings

7 https://www.benton.org/content/acp-expiration-means-billions-lost-savings

8 https://www.benton.org/content/acp-expiration-means-billions-lost-savings

9 FCC, "Lifeline and Link Up Reform and Modernization; Bridging the Digital Divide for Low-Income Consumers; Telecommunications Carriers Eligible for Universal Service Support; Affordable Connectivity Program; Emergency Broadband Benefit Program," Statement of Chairman Brendan Carr, February 18, 2026, WC Docket Nos. 11-42, https://docs.fcc.gov/public/attachments/DOC-418786A2.pdf, ("Statement of Chairman Brendan Carr on Lifeline and Link Up Reform and Modernization").

10 Statement of Chairman Brendan Carr on Lifeline and Link Up Reform and Modernization.

11 FCC, "In the Matter of Lifeline and Link Up Reform and Modernization; Bridging the Digital Divide for Low-Income Consumers; Telecommunications Carriers Eligible for Universal Service Support; Affordable

Continued on next page

The FCC has proposed reforms that would substantially tighten eligibility requirements under the Lifeline program.[12] The FCC proposes treating Lifeline as a federal public benefit limited to U.S. citizens and qualified aliens, with enhanced verification requirements (*e.g.*, full Social Security number collection and use of federal verification systems).[13] The FCC is also proposing codifying requirements that providers must verify a household doesn't already receive Lifeline support before enrolling them, as well as seeking comment on mechanisms to remove support for subscribers not actively using service.[14] The NPRM is likely motivated in part by concerns about waste, fraud, and abuse in Lifeline administration, and states that it aims to balance protecting benefits for eligible consumers with strengthening program accountability.

These concerns regarding program integrity are both legitimate and important. Public programs should incorporate robust safeguards that minimize improper payments while ensuring that assistance reaches eligible recipients. However, from an economic perspective, the existence of some level of fraud or improper payments does not, by itself, determine whether a public program improves social welfare. Virtually every large federal benefit program—including Medicare, Medicaid, unemployment insurance, and tax credits—experiences some level of improper payments despite extensive oversight mechanisms.

Technically, the challenge is how to balance Type I Errors (false positives or the provision of lifeline services to those not eligible) with Type II Errors (false negatives or the failure to provide lifeline service to those who are eligible.) The appropriate economic question is therefore not whether improper payments exist, but whether the overall benefits generated by the program exceed its costs, including any fraud, administrative expenses, and other inefficiencies.

This balancing of errors in program design is particularly important in the context of broadband affordability. Broadband adoption generates benefits that extend well beyond the households receiving subsidies. Increased connectivity improves labor market efficiency, facilitates access to education and healthcare, enables greater participation in digital commerce, and creates productivity spillovers that benefit firms and the broader economy. Because these spillover effects affect production, labor markets, and consumption throughout the economy, evaluating

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Connectivity Program; Emergency Broadband Benefit Program," Notice of Proposed Rulemaking, Adopted February 18, 2026, https://docs.fcc.gov/public/attachments/FCC-26-8A1.pdf, ("Notice of Proposed Rulemaking on Lifeline and Link Up Reform and Modernization").

12 Lifeline and Link Up Reform and Modernization.

13 FCC, "FCC Fact Sheet: Lifeline and Link Up Reform and Modernization," January 28, 2026, WC Docket No. 11-42, https://docs.fcc.gov/public/attachments/DOC-418282A1.pdf, ("FCC Fact Sheet: Lifeline and Link Up Reform and Modernization").

14 FCC Fact Sheet: Lifeline and Link Up Reform and Modernization.

broadband affordability programs solely on the basis of direct program expenditures understates their total economic contribution. A comprehensive assessment requires measuring both the direct effects on participating households and the indirect economy-wide effects generated through increased broadband adoption.

This paper develops such an assessment using Brattle's BEYOND computable general equilibrium ("CGE") model. Unlike traditional cost-benefit analyses that focus primarily on direct program expenditures and household impacts, a CGE framework captures interactions among consumers, firms, labor markets, government, and trade to estimate the broader macroeconomic consequences of broadband affordability policies. By incorporating these general equilibrium effects, the analysis measures changes in gross domestic product ("GDP"), employment, labor income, industry output, household welfare, and government revenues resulting from changes in broadband adoption.

The paper investigates two primary questions. (1) First it estimates the current benefit generated by the program. To do this, it establishes the counterfactual where the Lifeline program is eliminated and the quantifies the benefits lost in terms of GDP and impact on wages. (2) Second, it compares the overall benefits generated by the existing program that likely has some inefficiencies and fraud with the cost of tightening program requirements. To accomplish this, it establishes the baseline scenario where the current (arguably 'looser' according to some) eligibility restrictions lead to a some inappropriate payments and fraud. This base scenario is the Type II error case where currently, there are likely some false positives with (i) some limited portion of Lifeline subsidies allocated to non-eligible households; and (ii) a portion of payments lost due to fraud.. We compare these against the FCC's current objective of tightening the enrolment and eligibility requirements, a scenario more prone to Type II error, *i.e.* increased eligibility and enrollment requirements will increase the burden of enrollees leading to a loss of benefits. This enables an assessment of the relative benefits and costs of the Type I and Type II error. We find that tolerating some wastage in the system and having looser eligibility requirements yields a better economic outcome than more stringent enrolment requirements aimed at a zero fraud environment.

This paper does not seek to minimize concerns regarding fraud or argue that program integrity is unimportant. It addresses a different policy question: whether the presence of some improper payments due to looser eligibility enforcement or fraud is sufficient to eliminate the substantial economic and social benefits generated by the Lifeline program. By explicitly incorporating both program costs and economy-wide benefits into a unified analytical framework, this paper

provides an evaluation of the overall economic value of the Lifeline program and contributes to ongoing discussions regarding the future of broadband affordability policy in the United States.

II. Policy Background: The Evolution of Lifeline and the Current Policy Debate

A. Universal Service and the Origins of Lifeline

Universal service has been a foundational objective of U.S. communications policy for nearly a century. The Communications Act of 1934 established the principle that communications services should be available to all Americans at reasonable rates, reflecting Congress's recognition that communications networks generate substantial public benefits extending beyond individual subscribers.[15] The Telecommunications Act of 1996 reaffirmed this objective by codifying universal service principles in Section 254 and directing the FCC to ensure that consumers in all regions of the United States, including low-income consumers, have access to telecommunications and information services at rates that are reasonably comparable to those available in urban areas.[16] The Act further requires that support mechanisms be "specific, predictable, and sufficient" to preserve and advance universal service.[17]

Today, the USF finances four principal programs: (i) High-Cost Program (supporting broadband deployment in high-cost areas); (ii) Schools and Libraries Program (E-Rate); (iii) Rural Health Care Program; and (iv) Lifeline.[18] Among these programs, Lifeline is unique because it is designed to reduce affordability barriers faced by individual low-income households rather than financing network deployment or institutional connectivity.

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[15] FCC, "Whether FCC's Lifeline Program is a Benefit Subject to the Personal Responsibility and Work Opportunity Reconciliation Act of 1996," Memorandum Opinion for Brandan Carr Chairman Federal Communications Commission, May 28, 2026, https://www.justice.gov/olc/media/1442991/dl?inline=, ("Whether FCC's Lifeline Program is a Benefit Subject to the Personal Responsibility and Work Opportunity Reconciliation Act of 1996").

[16] Whether FCC's Lifeline Program is a Benefit Subject to the Personal Responsibility and Work Opportunity Reconciliation Act of 1996.

[17] Cornell Law School, "47 U.S. Code § 254 - Universal service," last accessed July 28, 2026, https://www.law.cornell.edu/uscode/text/47/254, ("47 U.S. Code § 254 - Universal service").

[18] FCC, "Universal Service Fund," last accessed July 28, 2026, https://www.fcc.gov/general/universal-service-fund.

The FCC established the Lifeline program in 1985 to ensure that low-income households could maintain access to basic telephone service following the divestiture of AT&T and the resulting restructuring of telephone pricing.[19] At the time, telephone connectivity was viewed as an essential public necessity because it enabled access to emergency services, employment opportunities, healthcare providers, and government agencies. Throughout its early history, Lifeline focused exclusively on voice telephone service.[20] Eligibility was based primarily on income or participation in specified federal assistance programs, and support was provided through participating telecommunications carriers.[21]

The Telecommunications Act of 1996 fundamentally reshaped universal service policy by explicitly incorporating support for low-income consumers into federal statute.[22] Section 254 established several guiding principles,[23] including that: quality communications services should be available at just and reasonable rates; consumers in rural and urban areas should have access to comparable services; and low-income consumers should have access to telecommunications and information services. Although broadband Internet was not yet widely available, Congress established a flexible framework that allowed universal service policy to evolve alongside technological change.

B. Broadband Modernization (2016)

Perhaps the most significant development in Lifeline's history occurred in 2016, when the FCC adopted the Lifeline Modernization Order.[24] The Commission concluded that broadband Internet had become essential infrastructure rather than an optional service.[25] Accordingly, the

[19] FCC, "The Honorable Jeff Sessions," September 27, 2013, https://docs.fcc.gov/public/attachments/DOC-323809A1.pdf.

[20] FCC, "In the Matter of Lifeline and Link Up Reform and Modernization; Telecommunications Carriers Eligible for Universal Service Support; Connect America Fund," Order, adopted July 1, 2026, WC Docket No. 11-42, https://docs.fcc.gov/public/attachments/DA-26-651A1.pdf.

[21] Cornell Law School, "47 C.F.R. § 54.409," last accessed July 28, 2026, https://www.law.cornell.edu/cfr/text/47/54.409.

[22] 47 U.S. Code § 254 - Universal service.

[23] 47 U.S. Code § 254 - Universal service.

[24] FCC, "In the Matter of Lifeline and Link Up Reform and Modernization; Telecommunications Carriers Eligible for Universal Service Support; Connect America Fund," Third Report and Oder, Furthest Report and Order, and Order on Reconsideration, Adopted March 31, 2016, WC Docket No. 11-42, https://docs.fcc.gov/public/attachments/FCC-16-38A1.pdf, ("Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization").

[25] Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

Commission added broadband Internet access as a supported Lifeline service while beginning a gradual transition away from standalone voice support.[26]

Importantly, the 2016 reforms were not solely an expansion of benefits. They also represented the largest overhaul of Lifeline's integrity protections since the program's inception.[27] Major reforms included: creation of the National Verifier; centralized eligibility determination; annual recertification requirements; improved duplicate subscriber detection; stronger documentation requirements; increased auditing; and enhanced enforcement authority.[28]

Concerns regarding waste, fraud, and abuse have long accompanied federal transfer programs, and Lifeline is no exception. Historically, the FCC relied on participating providers to determine subscriber eligibility. This decentralized system produced inconsistent verification practices and increased the possibility of duplicate enrollments and improper payments. Beginning in 2012 and accelerating with the 2016 Modernization Order, the Commission implemented numerous reforms designed to strengthen oversight.[29]

Among the most important reforms was creation of the National Verifier, administered by the USAC, which independently verifies applicant eligibility using federal and state databases whenever possible.[30] Other reforms included: National Lifeline Accountability Database (NLAD); annual subscriber recertification; de-enrollment of inactive subscribers; one-benefit-per-household enforcement; identity verification; provider audits; and enhanced enforcement actions.[31] These reforms substantially reduced provider discretion in determining eligibility and

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[26] Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

[27] Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

[28] Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

[29] FCC, "In the Matter of Lifeline and Link Up Reform and Modernization; Telecommunications Carriers Eligible for Universal Service Support; Connect America Fund," Report and Order and Further Notice of Proposed Rulemaking, Adopted January 31, 2012, WC Docket No. 11-42, https://docs.fcc.gov/public/attachments/FCC-12-11A1.pdf; Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

[30] Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

[31] Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

centralized many administrative functions.[32] Consequently, the current Lifeline program differs significantly from earlier versions frequently cited in historical discussions of fraud.

C. Lessons Learned During the COVID-19 Pandemic

The COVID-19 pandemic fundamentally altered perceptions regarding broadband connectivity. As schools, workplaces, healthcare providers, and government agencies shifted online, broadband became essential for daily economic and social activity. Recognizing these circumstances, Congress established the Emergency Broadband Benefit ("EBB") through the Consolidated Appropriations Act of 2021.[33] Later that year, Congress enacted the Infrastructure Investment and Jobs Act ("IIJA"), replacing the EBB with the Affordable Connectivity Program ("ACP").[34] At its peak, ACP served more than 23 million households, making it the largest broadband affordability program in U.S. history.[35]

Compared with Lifeline, ACP: provided larger monthly subsidies ($30 per month per household compared with $9.95 per month per household);[36] covered substantially more households; included support for connected devices ($100 one-time benefit);[37] and received direct congressional appropriations rather than relying upon the Universal Service Fund.[38]

Congress did not appropriate additional funding for ACP, and the program exhausted available funding in 2024.[39] The expiration of ACP created what economists often describe as a natural experiment regarding broadband affordability. Numerous surveys conducted following ACP's expiration found that many participating households: disconnected service; downgraded broadband plans; reduced spending on other necessities to maintain Internet service; or

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[32] Third Report and Oder, Furthest Report and Order, and Order on Reconsideration on Lifeline and Link Up Reform and Modernization.

[33] FCC, "Emergency Broadband Benefit Program," last accessed July 29, 2026, https://www.fcc.gov/emergency-broadband-benefit-program, ("Emergency Broadband Benefit Program").

[34] Emergency Broadband Benefit Program.

[35] The End of the Affordable Connectivity Program: Options for Consumers and Congress.

[36] Tribal areas received a higher amount. *See*, FCC, "Affordable Connectivity Program," last accessed July 29, 2026, https://www.fcc.gov/acp, ("Affordable Connectivity Program").

[37] Affordable Connectivity Program.

[38] Affordable Connectivity Program.

[39] Affordable Connectivity Program.

expressed uncertainty regarding future connectivity.[40] In prior work we have estimated that as a result of discontinuing the ACP, there were 5 million broadband disconnects, with a majority of these in the wireless segment.

Consumer surveys have consistently found affordability to remain one of the principal barriers to broadband adoption among low-income households. Internet service providers similarly reported increased subscriber churn among former ACP households following the program's expiration. Although estimates differ across studies, the available evidence consistently indicates that broadband affordability materially influences adoption decisions among lower-income households. These observations reinforce the central premise underlying Lifeline: affordability remains a binding constraint on broadband adoption despite substantial improvements in network availability.

D. Understanding the Current Status of Funding and Enrollment

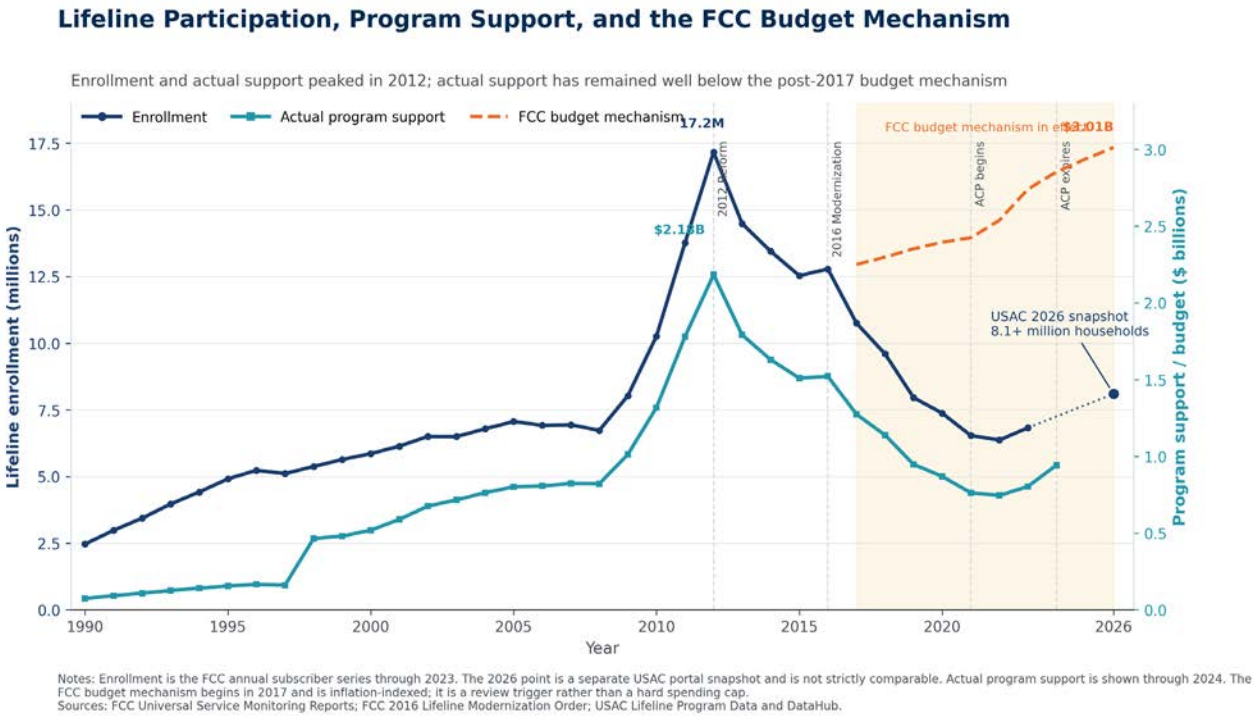
Figure 1 summarizes the evolution of the Lifeline program over the past three decades by presenting subscriber enrollment, annual program support, and, beginning in 2017, the FCC's annual Lifeline budget mechanism. The figure shows that both enrollment and program expenditures increased steadily throughout the 1990s and 2000s, peaking in 2012 at approximately 17.2 million subscribers and $2.2 billion in annual support. Following the FCC's 2012 Lifeline Reform Order and the subsequent implementation of enhanced eligibility verification, including the National Lifeline Accountability Database ('NLAD') and later the National Verifier, both enrollment and program support declined substantially. By 2024, annual program support had declined to approximately $0.9–1.0 billion, representing a reduction of more than 55 percent from the program's peak spending. This decline in enrollment and disbursements likely reflects a combination of enhanced eligibility verification, removal of duplicate and ineligible subscribers, administrative reforms, and decline in subscriber participation due to enhanced transaction cost.

The figure also demonstrates that, since the FCC established an inflation-adjusted Lifeline budget mechanism in 2017, actual program expenditures have consistently remained well below the authorized budget level. This pattern suggests that the program has operated within its available

[40] *See, for e.g.,* John Horrigan, "Leaving Money on the Table: The ACP's Expiration Means Billions in Lost Savings," Benton Institute for Broadband & Society, July 24, 2024, https://www.benton.org/publications/acp-expiration-means-billions-lost-savings.

funding while serving a considerably smaller and more targeted population than at its historical peak.

FIGURE 1: LIFELINE BUDGET, DISBURSEMENT AND ENROLLMENT (1990 – 2026)



E. Current FCC Review

Broadband affordability programs have entered a new phase of policy review under Chairman Brendan Carr. Chairman Carr has repeatedly emphasized that Americans contribute billions of dollars annually toward Universal Service programs and that the Commission therefore has an obligation to ensure careful stewardship of those resources.[41]

In February 2026, the FCC adopted a Notice of Proposed Rulemaking ("NPRM") seeking comment on reforms to the Lifeline program.[42] The NPRM identifies several objectives: strengthening eligibility verification; reducing fraud, waste, and abuse; simplifying program administration;

[41] Statement of Chairman Brendan Carr on Lifeline and Link Up Reform and Modernization.

[42] FCC, "FCC Announces Comment Dates for Proposed Lifeline Changes," last accessed July 29, 2026, https://www.fcc.gov/consumer-governmental-affairs/fcc-announces-comment-dates-proposed-lifeline-changes, ("FCC Announces Comment Dates for Proposed Lifeline Changes").

improving accountability; modernizing program rules; and ensuring that support reaches eligible consumers.[43]

In his accompanying statement, Chairman Carr argued that taxpayers deserve confidence that these funds are directed only toward eligible beneficiaries.[44] Importantly, neither the NPRM nor Chairman Carr's statement argues that broadband affordability lacks value. Rather, the Commission's current inquiry focuses on whether existing safeguards sufficiently protect program integrity while continuing to provide affordable communications services to eligible low-income households.

III. Framing the Economic Question and Estimation Methodology

A. Understanding the Implications Stemming from the FCC's Proposal

While efforts to reduce waste, fraud, and abuse in the Lifeline program are both appropriate and necessary to preserve public trust and fiscal discipline, there is a risk that overly stringent eligibility, verification, or usage requirements could unintentionally suppress broadband adoption among the most vulnerable households. The FCC contends that these changes are intended to eliminate financial waste in the Lifeline program. In a recent news release, the agency referenced a January internal investigation finding that approximately $10.5 million was improperly disbursed between 2020 and 2025, including funds credited to deceased individuals or issued in duplicate.[45] Even so, that amount represents less than 0.4% of Lifeline's annual budget, which was set at $15.9 billion for 2020 - 2025.[46]

Voice and broadband availability are a prerequisite to closing the digital divide, but once available, adoption remains the final hurdle. Lifeline has historically provided targeted subsidies

[43] FCC Announces Comment Dates for Proposed Lifeline Changes.

[44] Statement of Chairman Brendan Carr on Lifeline and Link Up Reform and Modernization.

[45] Eric Chiu, "How the FCC is Trying to Make it Harder to Get Low-Income Internet," Money Talks News, March 13, 2026, https://www.moneytalksnews.com/how-the-fcc-is-trying-to-make-it-harder-to-get-low-income-internet/.

[46] FCC, "Wireline Competition Bureau Announces Updated Lifeline Minimum Service Standards and Indexed Budget Amount," Released July 14, 2025, WC Docket No. 11-42, https://docs.fcc.gov/public/attachments/DA-25-619A1.pdf. Brattle estimates for 2020-2025 budget based on USAC data.

to low-income households to support broadband and voice service adoption. Changes to the complexity of enrolling in the program will affect household adoption decisions and ultimately the digital divide. Current data shows that in 2025, only about 22% of eligible households were enrolled in Lifeline (*e.g.*, ~8 million enrolled out of ~37 million eligible).[47]

Low-income consumers tend to be highly price sensitive and face greater administrative burdens; even modest increases in compliance costs or uncertainty can reduce participation. From prior work and available evidence, we know that the complexity of the verification process poses a significant barrier to enrolling in low-income internet subsidy programs.[48] If the FCC reforms increase this complexity, there can be significant decreases in enrolment leading to widening the digital divide. In an economy rapidly integrating AI tools and digital platforms, reduced connectivity among disadvantaged populations risks exacerbating inequality, slowing human capital development, and ultimately weakening U.S. competitiveness.

Traditional analyses of Lifeline reforms often rely on static participation counts or budgetary savings calculations. However, increased cost of compliance and administrative uncertainty may generate broader equilibrium effects through reduced consumer and provider participation in low-income markets. In this paper, we will evaluate the full economic impact of the FCC's proposed reforms using BEYOND, Brattle's structural general equilibrium model. The current debate surrounding Lifeline has appropriately emphasized accountability and the need to minimize improper payments. These are important objectives for any publicly funded program. However, from the perspective of welfare economics, concerns regarding fraud do not by themselves determine whether a program increases or decreases overall social welfare.

The relevant policy question is whether the social benefits generated by increased broadband adoption exceed the total costs of providing those subsidies, including administrative expenses and any improper payments. This analytical framework is routinely applied to infrastructure investments, tax expenditures, healthcare programs, and other public initiatives that generate both direct and indirect economic effects.

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[47] FCC, "In the Matter of Lifeline and Link Up Reform and Modernization; Telecommunications Carriers Eligible for Universal Service Support; Connect America Fund," Comments of Public Knowledge, National Digital Inclusion Alliance, National Hispanic Media Coalition, Open Technology Institute at New America, Multicultural Media, Telecom and Internet Counsel (MMTC), American Civil Liberties Union, Asia Americans Advancing Justice AAJC, Everyone On, Massachusetts Digital Equity Coalition , and NTEN, May 4, 2026, WC Docket No. 11-42, https://www.newamerica.org/wp-content/uploads/2026/05/2026.05.04-Public-Interest_Joint-Commenters_-Lifeline-NPRM-.pdf.

[48] FCC, "Telecommunications: FCC has Implemented the Lifeline National Verifier but Should Improve Consumer Awareness and Experience," GAO-21-235, Published January 28, 2021, https://www.gao.gov/products/gao-21-235.

The remainder of this paper adopts a comprehensive benefit-cost framework to assess these broader impacts. Using Brattle's BEYOND CGE model, the analysis first establishes the economy-wide effects of the current Lifeline program by evaluating the counterfactual of eliminating the program. Next it evaluates our baseline case – of tolerating two types of 'fraud': (i) a portion of Lifeline subsidies (1% and 5%) are assumed to represent improper payments, *i.e.*, are allocated to non-eligible households; and (ii) a portion of payments (1% and 5%) is fraudulent or wasted. These are then compared against FCC's current objective of tightening the enrolment and eligibility hurdle - by estimating the impact of the increased paperwork etc. based on an OMB report that estimated the current time and monetary impact of new and continuing enrollment certification. We show two scenarios. One where fulfilling the increased eligibility requirements takes twice the amount of time and another where it takes thrice the amount of time compared to the current case (2 hours are required per year, per enrollee).[49]

B. Methodology

The analysis uses BEYOND, Brattle's computable general equilibrium model of the U.S. economy. A CGE framework represents households, firms, government, and factor and product markets as an interdependent system in which all markets clear simultaneously, so a change in policy propagates through prices, wages, capital returns, sectoral output, and consumption until the economy reaches a new equilibrium. Unlike static cost-benefit calculations that count only direct program expenditures and participant impacts, this approach captures the indirect, economy-wide consequences of a change in broadband adoption. The version used here is calibrated to household data from the Current Population Survey (CPS) and distinguishes five representative household groups by annual income: under $25,000; $25,000 to under $50,000; $50,000 to under $75,000; $75,000 to under $150,000; and over $150,000.

All results are reported in real 2024 dollars and summed across the fifty states and the District of Columbia. Wage income refers to total real labor compensation rather than an individual wage rate; sector output is gross output rather than value-added; and employment is measured by the model's Jobs Quantity Index, which captures relative changes in labor demand rather than headcounts. Household real consumption is CPI-deflated expenditure; where household-specific prices change, the analysis also examines consumption-quantity and welfare indices, which provide a clearer measure of incidence than expenditure alone. Standard tax revenue comprises

[49] OMB, "Bridging the Digital Divide for Low-Income Consumers, Lifeline and Link Up Reform and Modernization, Telecommunications Carriers Eligible for Universal Service Support," 3060-0819, April 2020, https://omb.report/icr/202012-3060-004/doc/106979701.

labor, capital, output, consumption, and import taxes and excludes the model's custom Lifeline subsidy accounts.

Against a baseline calibrated to current program parameters ($943 million in annual disbursement in 2024)[50], the analysis evaluates five scenarios. The first three change the flow of subsidy funds: (1) complete cancellation, in which the full $943 million of annual Lifeline support for households earning under $50,000 is removed from domestic use without an offsetting transfer; (2) Reassignment of funds to ineligible households in which $94.3 million - one-tenth of program support - is redirected from households earning under $50,000 to subsidize telecom consumption by households earning $50,000 to under $75,000; and (3) fraud or waste, in which the same $94.3 million is removed but reaches no household or other domestic agent. The last two scenarios model the FCC's tightening of enrollment requirements – it retains every subsidy dollar but raises the annual cost of verifying continuing subscribers' eligibility: (4) a doubling and (5) a tripling of the recertification burden.

The verification scenarios are anchored to the FCC's own paperwork estimate. Under OMB Control No. 3060-0819, the continuing-subscriber recertification burden associated with FCC Form 5630 is estimated at roughly 1.35 million hours and $44.8 million annually.[51] Doubling that burden adds $44.8 million of incremental annual cost, and tripling it adds $89.5 million. Because these figures exclude the separate enrollment and verification burden imposed on new subscribers, they represent lower-bound estimates of the compliance cost of tighter requirements. The simulations isolate the resource cost of additional verification; they do not credit the policy with any offsetting benefit from preventing ineligible payments that stricter checks might prevent, so their results should be read as the cost side of the eligibility trade-off.

[50] USAC Disbursement database.

[51] OMB, "Bridging the Digital Divide for Low-Income Consumers, Lifeline and Link Up Reform and Modernization, Telecommunications Carriers Eligible for Universal Service Support," 3060-0819, April 2020, https://omb.report/icr/202012-3060-004/doc/106979701.

IV. Quantifying the Economic Impact of the Lifeline Program and Estimating the Overall Economic Impact of the FCC's Proposal

This section reports the national economic impacts of the five scenarios. For reference, the model's baseline places real GDP at approximately $29.30 trillion, real wage income at $15.05 trillion, real household consumption at $19.69 trillion, and standard real tax revenue at $8.80 trillion.

A. What Happens if the Lifeline Program is Discontinued

Complete cancellation produces the largest negative effect because the full $943 million is withdrawn from the telecom purchasing power of households earning under $50,000 with no offsetting transfer or expenditure. Lower household spending reduces business sales, labor compensation, capital income, and tax receipts throughout the economy. **Real GDP falls by approximately $1,482.6 million**, **real household consumption by $1,060.9 million**, **real wage income by $755.7 million**, and standard **tax revenue by $445.1 million**. Expressed per dollar of support removed, each dollar is associated with roughly $1.57 less GDP, $1.13 less household consumption, $0.80 less wage income, and $0.47 less tax revenue.

The contraction is felt most directly in telecommunications, where combined wired, wireless, and satellite output falls by about $653 million, or 0.20 percent - the largest percentage decline of any sector - because household telecom purchases are affected first. Large service sectors record the biggest dollar losses, since even small percentage changes apply to very large baseline output. Several manufacturing sectors - electronics, transportation equipment, primary metals, and chemicals- expand modestly as labor and capital are reallocated away from contracting household-facing activities, but these gains do not offset the losses elsewhere. Aggregate employment is essentially unchanged; the labor-market effect appears through wage income and sectoral reallocation rather than through a change in total jobs. Notably, the $445 million decline in ordinary tax collections means that a substantial share of the program's gross fiscal saving is offset by the erosion of the underlying tax base.

The direct burden falls on the low-income households the program serves. Expenditure by households with annual income under $25,000 rises slightly even though this group is directly

harmed: household-specific consumption price rises by approximately 0.03%, while its consumption-composite quantity falls by approximately 0.03%. For households with annual income from $25,000 to under $50,000, the household-specific price rises by approximately 0.02% and the consumption quantity falls by approximately 0.03%. The concentrated percentage burden of the telecom price increase lands on households earning under $50,000. In short, eliminating Lifeline removes roughly $0.94 billion of support but **costs the economy on the order of $1.48 billion in output**- a measure of the program's current economic contribution.

B. Baseline Scenario – Tolerating Limited Inefficiency (Type I Error)

a. Limited Lifeline Funds are Allocated to Ineligible Households

Redistributing 1% or 5% of the Lifeline disbursement, or $9.4 million of the Lifeline funds from households earning under $50,000 to subsidize telecom consumption by households earning $50,000 to under $75,000, national GDP, wage income, consumption, and tax revenue are all **left essentially unchanged**- the reported movements, on the order of a few million dollars, are negligible against national totals - because the money remains in household telecom demand. The effect is almost entirely distributional: purchasing power falls for the two lower-income groups and rises by a corresponding amount for the middle group, while aggregate telecom output is virtually flat. Whether such a shift is desirable is a question of policy priorities rather than of macroeconomic efficiency.

b. Limited Lifeline Funds are Wasted

When **1%** of Lifeline support- $9.4 million- is lost to fraud or waste and reaches no household or other domestic agent, **real GDP falls by approximately $9.3 million**, **household consumption by $15.3 million**, **wage income by $12.4 million**, and **tax revenue by $4.5 million**. When **5%** of Lifeline support- $47.2 million- is lost to fraud or waste and reaches no household or other domestic agent, **real GDP falls by approximately $85.4 million, household consumption by $57.8 million, wage income by $38.1 million**, and **tax revenue by $17.3 million**.

Taken together, the scenarios frame the choice facing the Commission. Losing funds to fraud or waste is genuinely costly- between $9.3 million and about $85.4 million of GDP for the 1 – 5% of Lifeline disbursement removed from domestic use. But substantially heavier verification is also costly - about $82 million to $133.6 million of GDP - even though it captures only the resources consumed by compliance and not the additional losses from any eligible households it deters. Set

against documented improper payments of roughly $10.5 million over five years, well under 0.4 percent of the program's annual budget, the modeled cost of aggressively tightening verification is of the same order of magnitude as—and by some measures exceeds—the very leakage it seeks to eliminate. The economic case therefore favors calibrating program-integrity measures to preserve broad, low-friction access: the objective should be to minimize the combined cost of improper payments and of the administrative burden required to prevent them, not to drive improper payments to zero regardless of the burden imposed on eligible households and the broader economy.

C. FCC's Proposal of Tightening Eligibility and Enrollment Requirements – Increased Compliance Burden (Type II Error)

The FCC's proposed reforms raise the burden of verifying that continuing subscribers remain eligible. The distinction matters economically. Because every subsidy dollar keeps flowing, tighter verification does not create the direct loss of Lifeline purchasing power seen under cancellation. Instead, it diverts carrier staff time and subscriber time toward compliance- resources that would otherwise be put to productive use- raising production costs, lowering factor income, and reallocating activity across sectors. The model does not capture attrition, i.e. people who choose not to apply because of the increased burden or are not considered eligible because they failed to complete the paperwork. Thus, the results are necessarily a lower bound.

a. Compliance Burden in Double that of Current Requirement

At the doubled-burden assumption ($44.8 million of incremental annual cost), real **GDP falls by approximately $82.4 million**, **real household consumption by $53.6 million**, **real wage income by $38 million**, and **standard tax revenue by $16.3 million**. Per dollar of incremental verification cost, these changes equal approximately $1.84 less GDP, $0.85 less wage income, $1.20 less household consumption, and $0.36 less standard tax revenue. Aggregate labor demand remains essentially unchanged, so the cost appears mainly through lower factor returns and a less productive allocation of labor rather than through a large national employment loss. Combined **telecommunications output falls by approximately $31.2 million**, or 0.005%. The combined **telecom employment index falls by approximately 0.004%.** The direct quantity and welfare burden is concentrated among households earning less than $50,000. The household-specific real expenditure increases by $1.4 million; price index rises by approximately 0.001% and the consumption-quantity index falls by approximately 0.001%. The small increase in CPI-deflated

expenditure for these groups does not indicate a welfare gain; it reflects higher costs for the consumption bundle.

b. Compliance Burden in Triple that of Current Requirement

At the tripled-burden assumption ($89.5 million of incremental cost), the losses grow to approximately **$133.6 million in GDP, $94.3 million in consumption, $73.3 million in wage income, and $44.9 million in tax revenue**. The tripled-burden effects are larger than, but not exactly double, the doubled-burden effects, because prices, factor returns, household spending, and sectoral production adjust jointly in general equilibrium. Per dollar of incremental verification cost, these changes equal approximately $1.49 less GDP, $0.82 less wage income, $1.05 less household consumption, and $0.50 less standard tax revenue. Aggregate employment is again essentially unchanged; the cost surfaces through lower factor returns and a less productive allocation of labor rather than through job losses.

As with the earlier scenario, the incidence of the verification burden is concentrated on households earning under $50,000, whose telecom prices rise and whose real consumption quantity falls. The higher verification burden produces larger direct losses for the two household groups earning less than $50,000. The household-specific price index rises by approximately 0.003% for households earning under $25,000 and by 0.002% for households earning $25,000 to under $50,000, while their consumption quantities fall by approximately 0.003% and 0.002%, respectively.

These scenarios quantify only the cost side of enhanced verification; they do not credit the policy with any reduction in improper payments it might achieve, nor do they capture the further losses that would follow if heavier paperwork causes eligible households to forgo enrollment altogether. That omission is conservative but consequential. As noted above, only about 22 percent of eligible households currently participate, and low-income consumers are especially sensitive to administrative friction; to the extent tighter requirements suppress adoption, the true economic cost would exceed the compliance cost modeled here.

D. Evaluating the Effects of Type I versus Type II Error

In the table below, we summarize our findings. The top panel shows that the Lifeline program generates roughly $1.48 billion in GDP, and eliminating the program will lead to an annual loss that is 1.5X greater than the spending ($943 million). Tolerating limited inefficiency- a Type I error is beneficial compared to the alternative of tightening the requirements. When 1% or 5% of support is reallocated to ineligible households, the national GDP effect is essentially neutral

because the funds remain in domestic telecom demand; only when the same amount is lost to fraud or waste and leaves the economy entirely does it subtract meaningfully. The FCC's proposal sits on the other side of the ledger. Tightening verification is a Type II error- it imposes a real cost even though every subsidy dollar continues to flow – leads to a loss of −$82.4 million in GDP at a doubled compliance burden and −$133.6 million at a tripled burden.

The lower panel of the table nets these outcomes against one another, and the comparison cuts against aggressive tightening. Measured against 1% funds going to ineligible households, the FCC proposal is strictly worse: doubling the verification burden costs about $82.4 million more in GDP than simply tolerating the inefficiency, and tripling it costs about $133.6 million more. Measured against outright fraud or waste, the doubled-burden proposal leads to a net loss of about $73.1 million, and this loss increases to $124.3 million once the burden is tripled. So, for any inefficiency that is 5% or less it is more beneficial to tolerate the inefficiency than tighten eligibility requirement. Thus based on the evidence here, tolerating limited inefficiency is the less costly error.

Scenario	Real GDP	Real Wage Income	Real Consumption	Standard Tax Revenue
Benefits from the Lifeline Program	-$1,482.6M	-$755.7M	-$1,060.9M	-$445.1M
Baseline Scenario: Toleration Limited Inefficiency (Type I Error)				
Reallocated of 1% Funds to Ineligible Households	$0.0M	$0.0M	$0.0M	$0.0M
1% of Funds Lost to Fraud or Waste	-$9.3M	-$12.4M	-$15.3M	-$4.5M
Cost of the FCC Proposal: Increased Compliance Requirements (Type II Error)				
Verification Burden Doubled	-$82.4M	-$38.0M	-$53.6M	-$16.3M
Verification Burden Tripled	-$133.6M	-$73.3M	-$94.3M	-$44.9M
Estimated Cost-Benefit of FCC's Proposal of Tightening Enrollment and Eligibility Requirements				

Net Impact	Real GDP	Real Wage Income	Real Consumption	Real Tax Revenue
Comparison of Baseline (1% Inefficiency) with Double Compliance Burden				
Baseline Reallocation To Ineligible Households	-$82.4M	-$38.0M	-$53.6M	-$16.3M
Baseline Funds Lost to Fraud or Waste	-$73.1M	-$25.6M	-$38.3M	-$11.8M
Comparison of Baseline (1% Inefficiency) with Triple Compliance Burden				
Baseline Reallocation To Ineligible Households	-$133.6M	-$73.3M	-$94.3M	-$44.9M
Baseline Funds Lost to Fraud or Waste	-$124.3M	-$60.9M	-$79M	-$40.4M

Appendix A: Lifeline Program Timeline

Year	Event	Significance
1985	FCC establishes Lifeline	Telephone affordability program created.
1996	Telecommunications Act	Universal service codified in Section 254; support for low-income consumers mandated.
2012	Lifeline Reform Order	Major anti-fraud reforms and accountability measures adopted.
2016	Lifeline Modernization Order	Broadband added as a supported service; National Verifier established.
2021	Emergency Broadband Benefit	Temporary pandemic broadband affordability program created.
2021	Affordable Connectivity Program	Permanent successor to EBB authorized through IIJA.
2024	ACP funding expires	Lifeline again becomes the federal government's only permanent broadband affordability program.
2026	FCC NPRM	Comprehensive review of Lifeline focused on program integrity and modernization.