Digital Equity Plan Initial Draft

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SECTION 1
Executive Summary

Puerto Rico's natural disasters and mountainous geography play a role in the digital divide that leaves too many without the ability to access broadband internet. Widespread damage to the island's existing telecommunications infrastructure as a result of recent natural disasters such as Hurricanes Irma and Maria, Hurricane Fiona, the 2020 earthquakes, as well as the COVID-19 pandemic, highlighted the importance of reliable and affordable broadband access, particularly for remote work, online learning, telehealth services, and connecting with the government. These events demonstrated the urgent need for a comprehensive and resilient broadband network in Puerto Rico and the social supports required for residents to access it.

99% of Puerto Ricans are eligible to be covered by Digital Equity Act funding

25% of Puerto Ricans do not have a computing device- the lowest rate of device adoption in the United States

30% of Puerto Ricans report no internet access at home

Many Puerto Ricans don't have the digital skills training resources required to use the internet and internet-enabled devices.

Source: U.S. Census Bureau, 2021 American Community Survey, 5-year data

The Puerto Rico Broadband Program (PRBP) was created in response to these needs, with a focus on establishing a robust, sustainable, and equitably distributed broadband infrastructure that can withstand future natural disasters and support the island's economic and human capital development. PRBP is a collaborative effort between federal and local government agencies, private sector partners, and community organizations, working together to bring high-speed internet access to all Puerto Ricans.

However, without educating Puerto Ricans on how to access the internet safely and effectively, and without providing affordable devices and connections, broadband deployment alone doesn't meet our residents' needs. Therefore, the PRBP and its partners are working together to advance the following vision for Digital Equity:

All Puerto Ricans, regardless of their background or location, have access to the resources and opportunities necessary to thrive in the digital world and fully participate in modern society.

While the current gap in digital equity is large and pervasive, the connections between people and our communities, and the organizations that serve them, are strong. These ties are key to bridging the digital divide and meeting the unique needs of our island.

PRBP's Digital Equity and Broadband Equity, Access, and Deployment 5-Year Action Plans will serve as the roadmap to achieve our four broadband pillars:

1   **Connectivity to resilient infrastructure**

2   **Quality and speed for demanding use**

3   **Accessibility at an affordable price**

4   **Knowledge of available technology and digital tools**

This Digital Equity Plan focuses on Pillars three and four to close the digital divide: Accessibility & Knowledge.

Digital divide is the Issue, Digital inclusion is the Work, Digital Equity is the Goal

To ensure that broadband is accessible at an affordable price, and that Puerto Ricans will have knowledge of available technology and digital tools, PRBP is working towards inclusion and equity through the following five goals and strategies:

Goal	Key Strategies and Support Activities
Accessible at affordable prices	· Initiate an affordability campaign in collaboration with government agencies, key stakeholders, ISPs, private entities, philanthropic groups, and non-profit organizations. This initiative will encompass the Affordable Connectivity Program (ACP) Outreach and other benefit programs.
Internet-enabled devices will be accessible and affordable for all	· Launch an affordable device initiative for eligible Puerto Ricans
Inclusive and accessible online resources	· Partner with government agencies to ensure compliance with Web Content Accessibility Guidance (WCAG)
PRBP will support digital literacy and digital skills for all residents	· Puerto Rico Broadband Program will support digital literacy and digital skills for all residents
PRBP will support digital literacy and digital skills for all residents	· Develop educational resources addressing online scams, phishing, and other threats. Utilize Multi-service and Internet Community Centers to disseminate these resources and educate community members.

The PRBP's goals and strategies were informed by residents, non-profit partners, internet service providers and government agencies. Throughout PRBP's engagements, we heard many stories and insights, including this one about digital literacy:

> "People have virtually no knowledge whatsoever of how to use a computer, how to use a tablet, how to navigate to job search. The most they could know how to do is with their cell phone and call the numbers they already have, which are already established. But in many cases, they do not know how to call [emergency services] or how to call their medical plans to coordinate a medical appointment or to coordinate a health matter."
>
> - Listening Session Participant

Many other issues emerged through our Digital Equity Planning process, including the following themes:

Broadband Availability and Affordability	Unreliability: · Non-resilient infrastructure, geography, & weather can cause long-lasting outages. · Lack of reliability reduces the effectiveness of all internet services. Persistent lack of affordability: · Fewer providers in rural areas limit choice and pricing options · Lack of net neutrality · $30/month "low-cost broadband service option" is not feasible for Internet Service Providers and is not universally affordable throughout Puerto Rico
Device Availability and Affordability	· Outdated/insufficient hardware · Lack of awareness of financial assistance for purchasing new devices · Lack of technical assistance training for constituent/client support
Online Accessibility and Inclusivity	· Disabled individuals face assistive device cost challenges. · Some government sites aren't mobile-friendly. · Limited help navigating inaccessible sites & services.
Digital Literacy	· Older and disabled more likely to have a hard time "keeping up to date" with changing technology · Lack of easily accessible digital education · Lack of existing local community digital resources
Online Privacy and Cybersecurity	· Lack of knowledge or understanding · Lack of experience with identifying phishing and scams · Safety measures are hindered in physical world

Addressing these barriers for all Puerto Ricans takes collaboration and partnership. The Puerto Rico Broadband Program is working closely with a range of organizations, government entities and internet service providers. Together, stakeholders and partners will continue to understand residents' needs and compile a complete picture of the Island's broadband needs through mapping, surveys and listening sessions, and outreach and engagement.

The development of this plan would not have been possible without the contributions of Mayors of municipalities, government leaders, internet service providers, community representatives, and the organizations that supported PRBP's public events and summits. In addition to these key partners, the work of PRBP has been greatly supported by formalized working groups, including the Broadband Executive Committee, Broadband Advisory Council and the Digital Equity Advisory Subcommittee.

We are also grateful to all the Puerto Rican residents who have shared their experiences and wisdom through surveys and listening sessions. This Digital Equity Plan is not just a plan created by the PRBP, rather it is a plan that has been co-created through thoughtful engagement across the entire Island.

SECTION 2
Introduction & Vision for Digital Equity

"Digital Equity is the condition in which individuals and communities have the information technology capacity that is needed for full participation in the society and economy of the United States"

-Digital Equity Act, Division F, Title III - Digital Equity Act of the Infrastructure Investment and Jobs Act.

High-speed internet has become integral to the American lifestyle, influencing how we work, learn, access healthcare, engage with the government, and interact with loved ones. Over recent years, having internet access has emerged as a critical component to fully engage in the digital age. Puerto Rico, in its recovery from a trifecta of challenges—financial, environmental, and public health—is setting a path to emerge stronger and more robust than ever before. High-speed Internet connectivity is a crucial part of transforming Puerto Rico into a "Smart Island", and digital equality is key in ensuring all residents benefit from this transformation.

The financial crisis that hit Puerto Rico in the mid-2010s highlighted the need for strategic investments to stimulate economic growth and uplift the Puerto Rican population. In 2017, Hurricanes Irma and Maria, with their devastating winds, wrought severe damage to Puerto Rico's infrastructure, people, and economy—a recovery process that's still underway. The convergence of these events served as a wake-up call, demonstrating that the status quo is no longer viable for Puerto Rico in a globally connected, digital economy. The advent of the COVID-19 pandemic, with its subsequent economic impacts, only emphasized these issues further, starkly revealing the divide between those with connectivity and those without.

Puerto Rico's Digital Equity (DE) and Broadband Five-Year Action Plans represent an unprecedented opportunity to bridge this digital divide and establish digital equality across the island.

> " Lack of internet access at home, high cost of internet, lack of knowledge, poor service, physical disabilities, lack of technical support, housing insecurity. etc. [are barriers to the digital equity]. "
>
> - Listening Session Participants, 1 Region Municipio Aguadilla and Mayaquez meeting

Whether it is prohibitively high costs, an unreliable connection, unaffordable device, or lack of digital skills, many Puerto Ricans face barriers to participating in the digital economy and society. This Digital Equity Plan, the Island's first, is crafted to address the disparities between communities across the island, as well as between Puerto Rico and the rest of the country. It is informed by the lived experiences of Puerto Ricans and the insights they shared in listening sessions, surveys, meetings, and other engagement opportunities. This groundbreaking Digital Equity Plan marks a significant step forward, as it endeavors to comprehensively bridge the existing disparities that persist among different communities across the Island. An abundance of insights has emerged through these engagement endeavors. These insights have helped the PRBP identify challenges, aspirations, and visions to create a plan that reflects the actual needs of the people it aims to serve.

Puerto Rico Broadband Program (PRBP) aims for universal, quality internet connections that are accessible to all residents and that everyone has the skill needed to use the internet effectively and safely. Through closing the digital divide, Puerto Rico will be resilient and globally competitive in workforce and economic development, education, healthcare services, civic and social engagement, delivery of other essential services, and 21st century digital engagement.

2.1 Vision

The vision of the Puerto Rico Broadband Program is to:
Ensure all Puerto Ricans, regardless of their background or location, have access to the resources and opportunities necessary to thrive in the digital world and fully participate in modern society.

This vision drives PRBP's work across all its initiatives—from DE and BEAD to its many other programs. The PRBP is working to advance its vision through a focus on four pillars. These pillars were designed to address both deployment and equity issues, offering a wholistic approach to connecting ALL Puerto Ricans.
Puerto Rico Broadband Program's Four Pillars:

1 **Connectivity to resilient infrastructure**

2 **Quality and speed for demanding use**

3 **Accessibility at an affordable price**

4 **Knowledge of available technology and digital tools**

As noted in the Executive Summary, these four pillars guide this Digital Equity Plan and the BEAD Five-Year Action Plan. The connectivity and quality pillars are necessary conditions for digital equity and are addressed in the Five-Year Action Plan. **PRBP's accessibility and knowledge pillars are the special focus of this Digital Equity initiative.** Through integrated, collaborative efforts, data-driven decision-making, community engagement, and trusted agency partners and stakeholder participation, Puerto Rico will realize the promise of its vision.

Puerto Rico is behind the rest of the United States in accessibility to (and adoption of) broadband internet and internet-enabled devices at an affordable price. Compounding these issues is the reality of persistent poverty, low levels of education, and 99% of Puerto Rico's residents falling under the designation

"covered population." This designation refers to individuals with disabilities, aging, those who have English as a language barrier, those who have low literacy levels, veterans, incarcerated, minorities, and residents who live in rural areas.[1] Puerto Rico benefits from the diversity of its people and the strengths they bring to the island and PRBP will harness the island's human capital, organizational partners and key stakeholders and resources to close the digital divide.

2.2 Alignment with Existing Efforts to Improve Outcomes

2.2.1 Policy Priorities

The White House Working Group on Puerto Rico was established in 2021 to provide the Government of Puerto Rico the resources and technical assistance it needs to recover from natural disasters and prosper. This partnership between the Federal Government and the Government of Puerto Rico offers a structure and vision for federal investments in resilience, recovery, infrastructure, and economic development.[2] Broadband investments will complement the Working Group's efforts to advance a comprehensive and holistic approach that sets the island on a course for future prosperity.

Puerto Rico's investment in broadband infrastructure and digital equity will have a ripple effect across the Island. By increasing affordable access and the knowledge and tools necessary to use the internet, Puerto Ricans will be better able to work, learn, receive health care, communicate with their government and participate in democracy. Alignment across government entities will ensure that all digital equity efforts also advance:

- Economic and workforce development goals, plans, and outcomes

- Educational outcomes

- Health outcomes

- Civic and social engagement; and

- Delivery of other essential services.

Puerto Rico's digital equity gaps are large: in comparison to 87% of US households, only 68% of Puerto Rican households have a broadband Internet subscription.[3] PRBP is taking an innovative approach to reducing this 19% gap by increasing digital equity through collaboration with other social service providers. Section 2.3 describes this approach.

2.2.2 Alignment with Existing Municipal or Regional Digital Equity Plans

Digital equity planning and activities are gaining momentum across Puerto Rico. With an increasing awareness of the role that digital equity and literacy play in shaping the future, various regional and island-wide organizations and municipalities are stepping up to acknowledge and prioritize this crucial issue. As local, municipal, and regional digital equity plans are crafted, they will be considered throughout the Capacity Grant phase. Furthermore, the Program will develop a comprehensive toolkit, ensuring a mechanism of accountability is guaranteed from municipalities in the diligent execution of projects.

[1] "Infrastructure Investment and Jobs Act," Pub. L. No. 117–58 (2021), https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf.
[2] Readout of the First Meeting of the White House Working Group on Puerto Rico, The White House, https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/20/readout-of-the-first-meeting-of-the-white-house-working-group-on-puerto-rico/
[3] U.S. Census Bureau, "Quick Facts," July 1, 2022, https://www.census.gov/acs/www/about/why-we-ask-each-question/computer/

2.2.3 Coordinating Digital Equity and Other Broadband Funding

Improved broadband infrastructure will be fueled by more than $1 billion made available to the island through federal funding addressing Puerto Rico's fiscal emergency, natural disasters, and pandemic relief. A substantial portion of these funds will be used to address digital equity in Puerto Rico.

Through the National Telecommunications and Infrastructure Administration's (NTIA) Digital Equity Act, the Government of Puerto Rico expects to receive an allocation of more than $15 million to invest in digital equity initiatives. As of July 2023, exact funding amounts have yet to be announced. Organizations in Puerto Rico will also have the chance to compete for additional grant funding as part of a $1.25 billion national competitive grant program from NTIA. While these programs are groundbreaking, they will not be the largest programs funding digital equity activities in Puerto Rico. Additional funding streams are depicted below:

Figure 1: Broadband Funding Streams

PRBIF ($400M)

ACP OUTREACH (<$1M)

CPF ($158M)

ESTIMATED APPROX. $1.2B

($178M)

BEAD ($335M)

MIT ESTIMATED ($70M)

DIGITAL EQUITY CAPACITY ($15M)
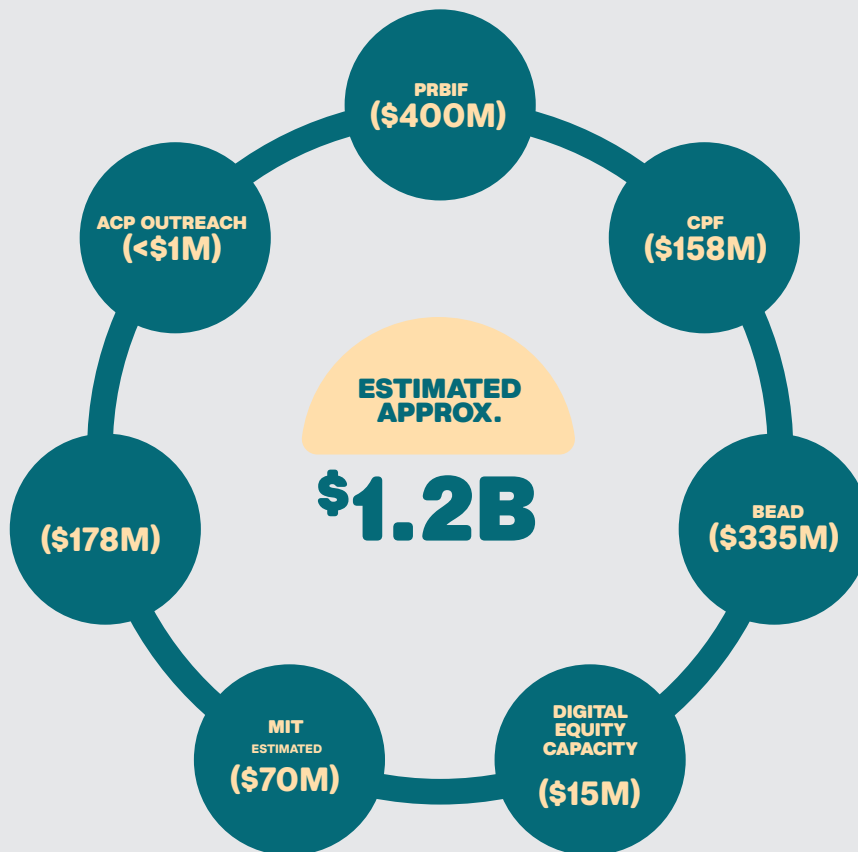
Key to Funding Programs:

PRBIF = Puerto Rico Broadband Infrastructure Fund
CPF = Capital Projects Fund, American Rescue Plan Act
BEAD = Broadband Equity Access and Deployment, Infrastructure Investment and Jobs Act of 2021
Digital Equity Capacity = State Digital Equity Capacity Grant Program, Infrastructure Investment and Jobs Act of 2021
MIT = Infrastructure Mitigation Program, U.S. Department of Housing and Urban Development, Community Development Block Grant
ACP Outreach = Affordable Connectivity Program Outreach Grant
Uniendo = Uniendo a Puerto Rico Fund

Puerto Rico's Certified Fiscal Plan & Budget of 2020 allocated $400 million **Puerto Rico Broadband Infrastructure Fund (PRBIF).**[4] These funds will be invested in broadband infrastructure, ensuring that all Puerto Ricans are able to access broadband internet service.

To restore, expand, and upgrade fixed and mobile communications networks on the islands after the 2017 hurricanes, the Federal Communications Commission (FCC) created the **Uniendo a Puerto Rico Fund.** While not under the control or direction of the Puerto Rico government, Uniendo funding was awarded to Puerto Rico's major telecom firms in two stages to assist in disaster recovery and upgrade broadband speeds across the island.

Stage I: FCC provided $51.2 million to Puerto Rico to repair and restore essential voice and broadband communications networks to existing customers.

Stage II: FCC allocated $127.1 million in support to Liberty and Claro upgrade broadband speeds across Puerto Rico.[5]

These commitments will allow Internet Service Providers (ISP's) to expand deployment efforts for full island coverage.

First authorized during the pandemic, the FCC-administered Emergency Broadband Benefit expanded subsidies to lower income households afford necessary broadband services. Extended by Congress as the **Affordable Connectivity Program (ACP),** it directly addresses one of the important barriers that too many households in Puerto Rico face when attempting to get online—how to pay for the service.[6] The Government of Puerto Rico is participating in the FCC's ACP Outreach Grant Program to ensure that more households know about and use this important program.[7] The Government of Puerto Rico is demonstrating its commitment to affordability by adding local funding to further advance ACP Outreach impact.

[4] "Puerto Rico Oversight, Management and Economic Stability Act of 2016", Public Law No. 114-187, 130 Stat. 549 ("PROMESA")
[5] In the Uniendo a Puerto Rico Fund and the Connect USVI Fund, Order, WC Docket Nos. 18-143, 10-90, 14-58, 34 FCC Rcd 9109 (Sept. 30, 2019) (PR-USVI Stage 2 Order). https://docs.fcc.gov/public/attachments/FCC-19-95A1_Rcd.pdf
[6] Public Law 117-74, the Ensuring Phone and Internet Access Through Lifeline and Affordable Connectivity Program Act of 2022, 117th Congress, 2d session, February 15, 2022
[7] FCC ACP Outreach Grant Program, FCC-ACOGP-23-001, under authority Infrastructure Investment and Jobs Act of 2021, Division J, Title IV, Public Law 117-58, 135 Stat. 429 (November 15, 2021) (47 USC 1752(b)(10)(C))

Puerto Rico's plan for its $158 million **Capital Projects Fund** allocation, provided under the **American Rescue Plan Act (ARPA),** will not only promote enhanced resiliency but also prioritize the establishment of regional Multipurpose Community Technology Centers, which will act as central hubs for numerous digital equity initiatives outlined in this plan.

Finally, Puerto Rico will receive an allocation of $335 million under the **Broadband Equity, Access and Deployment (BEAD) Program,** established by the IIJA and administered by NTIA. This funding, detailed in the Puerto Rico Five-Year Action Plan, will establish a robust and resilient infrastructure throughout the island. This funding will support diverse applications, including but not limited to high-speed, hardened internet service to community anchor institutions serving covered populations.

Other federal disaster recovery and resiliency funding under the administration of the Puerto Rico government, such as the **Infrastructure Mitigation Program,** administered by the U.S. Department of Housing and Urban Development, may further deepen opportunities to bring service to disadvantaged households.[8]

2.3 Goals, Strategies and KPIs

To drive progress towards digital equity, PRBP is working to achieve the following goals:

1. Broadband will be accessible at affordable prices.
2. Internet-enabled devices will be accessible and affordable for all.
3. Online public resources will be inclusive and accessible to all Puerto Ricans, regardless of ability.
4. Puerto Rico will support digital literacy and digital skills for all residents.
5. All Puerto Ricans will be aware of the importance of online security and privacy.

As 99% of Puerto Rican residents are considered part of NTIA's Covered Populations, the goals, strategies and measurable objectives in this section apply to all residents and comprehensively address the digital divide.[9]

The measurable objectives, identified below as Key Performance Indicators (KPIs), will be tracked throughout the Digital Equity Plan implementation. While some KPIs are quantitative, others are best expressed through qualitative measures. As baseline data is collected, KPIs may be adjusted or refined further.

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[8] Puerto Rico Department of Housing. (2023, June 27). Infrastructure Mitigation Program. Retrieved from https://cdbg-dr.pr.gov/en/infra-structure-mitigation-program/
[9] U.S. Census Bureau, "Quick Facts Puerto Rico," July 1, 2022, https://www.census.gov/quickfacts/fact/table/PR/PST045222.

Goal 1

Affordable Internet Access

Strategy

Launch an affordability initiative in partnerships with government agencies, key stakeholders, ISPs and other private entities, philanthropy and non-profit organizations that includes ACP Outreach and other benefit programs.

KPIs

Increase enrollment in ACP.

- Baseline: 600,097 Puerto Rican households are enrolled in the ACP.[10]
- Near-term: Increase ACP enrollment by 10% per year for 3 years.
- Long-term: All eligible Puerto Ricans are enrolled in ACP.

All Puerto Ricans can access free internet at a location in their region.

- Baseline: Data to be collected.
- Long-term: All Puerto Ricans can access free internet at a regional location by 2026.

Low-income families participate in a PRBP subsidy program for low-cost internet and devices.

- Baseline: Data to be collected for subsidy program.
- Near-term: Increase access to affordable broadband internet plans for 50% of low-income households in Puerto Rico within the next 2 years.
- Long-term: All low-income households have access to affordable broadband internet plans.

Additional Qualitative Measures: PRBP will partner with ISPs to share adoption data and develop affordability measures. Those measures will be integrated into infrastructure planning through the BEAD program and, whenever feasible, will include mechanisms for the participation of small and medium enterprises based in Puerto Rico.

[10] Universal Service Administrative Co. ACP Tracker: https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/#enrollment-by-state

Goal 2

Affordable Devices

Strategy

Launch an affordable device initiative for eligible Puerto Ricans.

KPIs

Increase the number of Puerto Ricans who use the ACP's device discount benefit.

- Baseline: To be determined.
- Near-term: Increase the baseline by 10%.
- Long-term: All eligible Puerto Ricans are enrolled in the ACP's device discount program.

Increase the number of Puerto Ricans who own internet-enabled devices.

- Baseline: According to the U.S. Census, 55% of Puerto Rican households do not have a desktop computer or a laptop and 24% do not own a computing device of any type.[11] The percentage of covered populations with adaptive computing needs to be established upon further study.
- Near-term: Increase device ownership by 8% per year for 3 years.
- Long-term: By 2026, Puerto Rico will have closed by half the gap in households without a desktop or laptop computer.
- Long-term: By 2026, affordable adaptive accessories will be available for covered populations and residents with special needs.

All Puerto Ricans can access technical support appropriate to the user and device maintenance and repair.

- Baseline: To be determined.
- Long-term: All Puerto Ricans technical support appropriate to the user and access to device maintenance and repair through a location in their region, their ISP, or other device distribution and support channel.

Goal 3

Inclusive and Accessible Public Resources

Strategy

Partner with government agencies to ensure compliance with Web Content Accessibility Guidance (WCAG).

KPIs

All government websites will be inclusive and accessible.

- Baseline: To be determined.
- Near-term: Make 80% of government services available online within the next 2 years.
- Long-term: All government websites will be inclusive and accessible before 2025.

Support and resources will be available to navigate government websites

- Baseline: To be determined: Assess the number of digital navigator personnel and materials that are needed.
- Near-term: Train digital navigator personnel to assist in providing training and support for residents using government services online.
- Long-term: All Puerto Ricans have access to trained digital navigators in their area.

Goal 4

Digital Skills & Literacy

Strategy

Launch a digital skills and literacy initiative that builds on existing best practices, is culturally relevant in its programming and materials, and includes applications of digital use to outcomes in education, healthcare, and economic development.

KPIs

Digital skills and literacy resources will be available to all Puerto Ricans.

- Baseline: PRBP does not yet offer island-wide digital literacy resources
- Near-term: In collaboration with community organizations, libraries, schools, and other relevant groups, develop online tutorials and training materials and provide digital literacy training to 75% of residents in Puerto Rico within the next 5 years
- Long-term: All residents have access to digital skills and literacy resources and training

All Puerto Ricans can access to digital skills for workforce development.

- Baseline: To be determined
- Near-term: In collaboration with interested organizations, including Puerto Rican Small and Medium Enterprises, develop and provide digital skills training to 50% of residents in Puerto Rico who are seeking employment within the next 3 years
- Long-term: All Puerto Ricans can access digital skills and literacy resources at a regional location by 2026

Increase the number of digital navigators.

- Baseline: To be determined: Assess the number of digital navigator personnel and the culturally relevant materials that are needed
- Near-term: Train and certify enough digital navigators to appropriately serve each region of the island
- Long term: All Puerto Ricans have the opportunity to work with trained digital navigators

Goal 5

Online Security & Privacy

Strategy

Create educational resources about online scams, phishing and other threats and ensure that each region of the Island can distribute resources and educate community members.

KPIs

PRBP has public resources about online security and privacy in Spanish and English.

- Baseline: Resources not yet developed
- Near-term: PRBP gathers best practice resources from existing online security and privacy programs
- Long-term: PRBP has a repository of high-quality online security and privacy resources that are distributed to all Puerto Ricans

All Puerto Ricans are aware of the importance of online security and privacy.

- Baseline: To be determined
- In collaboration with community organizations, libraries, schools, and other relevant groups, provide online security and privacy training to 75% of residents in Puerto Rico within the next 5 years.
- Long-term: All Puerto Ricans are aware of the importance of key online security and privacy practices

By incorporating the outlined objectives and key performance indicators, along with the specified Implementation Plan in Section 5, Puerto Rico can accomplish digital equity for all its residents. This achievement will result in enhanced education, improved healthcare, workforce advancement, economic growth, increased civic and social involvement, and efficient delivery of essential services. Consequently, the people of Puerto Rico will be equipped with the resources to successfully break away from the limitations of their past, bridge the digital gap, and wholeheartedly embrace a future where they can actively participate in the modern digital era.

SECTION 3
Current State of Digital Equity – Barriers & Assets

Puerto Rico is filled with vibrant culture, resilient communities, and rich traditions. Much of what makes it so special is difficult to quantify. The following section offers a look at the available quantitative data as it relates to digital equity in Puerto Rico. While the gap in digital equity is large and pervasive, the connections between people, their communities, and the organizations that serve them are strong. These strong ties are key to bridging the digital divide and meeting the unique needs of Puerto Rico.

Data collection processes are ongoing to address the existing information gaps. The Puerto Rico Broadband Program (PRBP) is working closely with partners to continuously improve and widen its methods to capture more conclusive information. A more complete picture will allow for a better understanding of Puerto Rico's digital equity barriers and assets and will better inform PRBP's investments to build digital equity capacity on top of the plan for broadband deployment. As data collection methods become more refined, PRBP will be better able to describe data by covered population and refine the plan for advancing digital equity strategies.

Throughout the Digital Equity and BEAD planning processes, PRBP and its partners have worked together to elevate the voices of Puerto Ricans. In addition to providing broadband adoption and affordability data, this section highlights those voices by offering qualitative data and quotes from members of the covered populations and the organizations that support them collected during listening sessions and multiple community outreach methods.

3.1 Asset Inventory

To inventory the island's digital equity assets, resources, programs, PRBP collected information in the following ways:

- Community listening sessions
- Survey of Puerto Rican organizations including nonprofits, government agencies, higher education institutions, municipalities and community organizations
- Connectivity survey of residents' internet and device uses
- One-on-one interviews with local agencies, nonprofits, CAIs, and other organizations
- Small group discussions with key stakeholders
- Telephone surveys (landlines and cell phones) of residents
- Participation in partner events and conferences
- Responses to press releases and social media
- Analysis of federal programs that support digital equity

3.1.1 Federal Assets

The island of Puerto Rico benefits from the federal programs beyond BEAD and DE that advance digital equity. The table below identifies the Federal Communications Commission (FCC) programs that support the broadband ecosystem and serve as key assets to advancing PRBP's vision. A full inventory of federally administered infrastructure programs can be found in Section 3.1.2 of Puerto Rico's BEAD Five-Year Action Plan.

Table 1: Federal Digital Equity Assets

Resource Type	Name of Asset & Provider	Description of Asset	Covered Population
Program – funding	Emergency Connectivity Funds	The FCC's Emergency Connectivity Fund (ECF) provided Puerto Rican schools and libraries with $103M for laptops, hotspots, and broadband connectivity purchases for off-campus use by students, school staff, and library patrons across Puerto Rico.	Rural and low-income households
Program – funding	Universal Service Fund	The FCC's Universal Service Fund (USF) allows rural health care providers to pay rates for telecommunications services similar to those of their urban counterparts. Schools and Libraries Support Mechanism, popularly known as the "E-Rate," provides Internet access, and internal connections (the equipment to deliver these services) to eligible schools and libraries.[12]	All
Program – funding	Affordable Connectivity Program (ACP) and ACP Outreach Funds	The ACP is an FCC program that provides a discount of up to $30 per month toward Internet service for eligible households and up to $75 per month for households on qualifying Tribal lands; and a one-time discount of up to $100 to purchase a laptop, desktop computer, or tablet if they contribute more than $10 and less than $50 toward the purchase price. Puerto Rico received an ACP Outreach Grant to increase enrollment in ACP.	Low-income households, which often overlaps with Aging populations, Veterans, previously incarcerated people, and rural inhabitants.

[12] "Universal Service Fund," Federal Communications Commission, accessed June 29, 2023, https://www.fcc.gov/general/universal-service-fund.

3.1.2 Digital Equity Assets by Covered Population

Puerto Rico's signature digital equity asset is its 158 community centers across the Island. The impact of the hurricanes made clear the importance of having resilient community centers to withstand chronic stressors, as well as to create gathering places for the local community.[13] In June 2021, Puerto Rico published its plans for the Whole Community Resilience Planning (WCRP) Program.[14] The program is ongoing and will result in comprehensive community recovery plans that include resilient community centers.

The Puerto Rico Broadband Program (PRBP) will work collaboratively within this effort to develop Multipurpose Community Technology Centers that will provide a suite of digital equity services— access to high-speed internet and devices, digital skills training, technical support, and a base for local digital navigators who will address individual needs. The centers will also serve as a touchpoint for ACP awareness, training, and enrollment services. Services will be offered in a culturally relevant, bi-lingual, and adaptive environment at no cost to residents and will also provide the skills, support, and real-world uses of digital literacy for favorable outcomes in education, workforce development, healthcare, civic/social engagement, and economic development.

In addition to identifying existing and future resilient community centers as a key asset for the digital equity program, PRBP also engaged a diverse range of partners to ensure that its Digital Equity Plan meets the needs of covered populations and advances the goals of government entities, educational institutions and Internet Service Providers.

The Puerto Rico Broadband Program (PRBP) surveyed and interviewed leaders of organizations serving covered populations, including some that provide digital equity-related services. Those program details are forthcoming and as more programs and services are launched, PRBP will add them to the asset inventory. The chart below offers high-level, preliminary findings.

Survey & Interview Summary Findings
Organizations reported high need for:
  · Offering services to help customers with their Internet needs, including workshops and digital skills training
    - Offering devices to help individuals complete online forms
  · Referring individuals to other organizations that could support individuals with computing needs.
  · Participating in alliances, partnerships, or coalitions with other organizations to promote high-speed Internet access or use
  · Engaging with the Smart Island Summit or working with partners that work with the Smart Island Summit

PRBP's asset inventory reveals the critical need for additional digital equity and inclusion resources. Puerto Rico faces many challenges to achieving digital equity, but additional federal funds that Puerto Rico has received are creating change. PRBP expects to quickly add to the assets inventoried here as federal programs make additional resources available.

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[13] "Communities Together Guide," ResilientSEE, 2019, https://www.resilientsee-pr.com/communities-together.
[14] "Whole Community Resilience Planning Program" (Government of Puerto Rico Department of Housing, June 9, 2021), https://cdbg-dr.pr.gov/en/download/whole-community-resilience-planning-program/?wpdmdl=6315&refresh=649ddd40ed5b91688067392&ind=1623339513449&file-name=1623339512wpdm_PLN_WCRP_Guideline_Program%20Guideline_EN_v2.pdf.

3.1.3 Existing Digital Equity Plans

Digital equity efforts are gaining momentum across Puerto Rico. While regional and island-wide entities recognize the importance of digital equity and digital literacy, none have developed focused and comprehensive digital equity plans. As local, municipal, and regional plans are crafted, they will be considered throughout the Capacity Grant phase.

Puerto Rico has many nonprofit organizations and government entities that are committed to supporting individuals and families who are considered part of the covered populations. PRBP and its partners will incorporate any to-be-developed digital equity plans into its Capacity Grant efforts.

3.1.4 Broadband Adoption

The National Digital Inclusion Alliance (NDIA) defines broadband adoption as daily access to the Internet:
- at quality and capacity necessary to accomplish common tasks,
- on a personal device and secure convenient network,
- with the digital skills necessary to fully participate online.

The NDIA considers the term "daily access" to include broadband available both at the home and elsewhere, so long as the broadband outside the home is highly convenient. The following subsections outline the current state of these three tenets of broadband adoption in Puerto Rico: 1) Broadband internet availability and adoption; 2) Device usage and adoption; and 3) Digital skills.

Broadband Internet Availability and Adoption

Puerto Rico lags the rest of the country in reported broadband adoption (see Figure 2). Nearly 30% of Puerto Ricans report no home access to the internet, significantly higher than the U.S. average rate of no internet access (approximately 10%), and ten percentage points higher than the next-highest state.

Figure 2: Percentage of U.S. Population with No Internet Access, by State

Calculated % No Internet Access By State
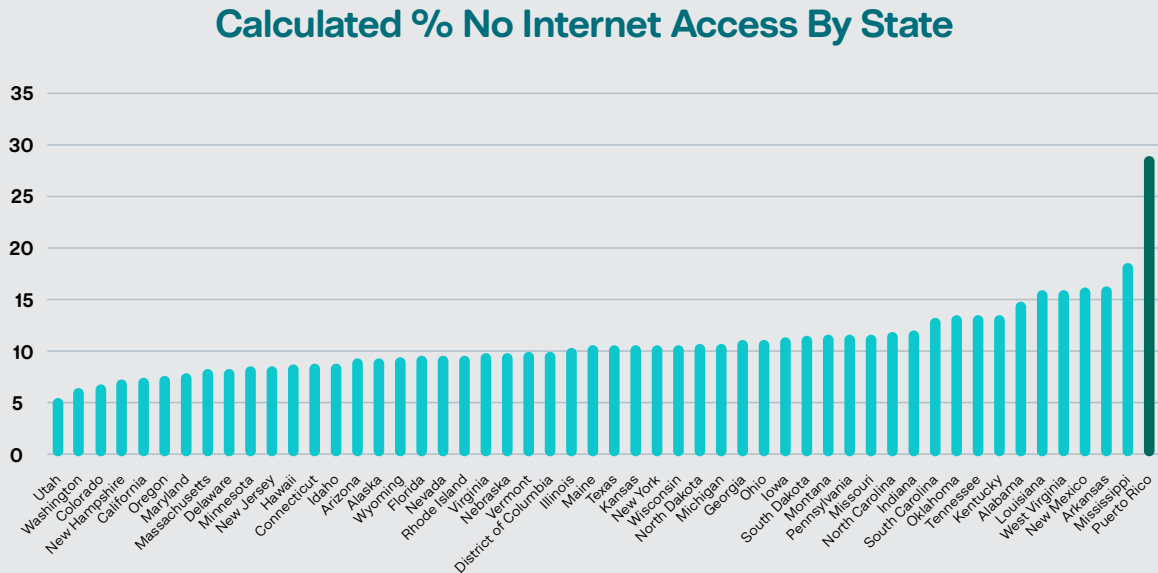
American Community Survey. ACS 5-Year Estimates Detailed Tables.

Broadband adoption rates across Puerto Rico are not homogenously distributed, but rather they roughly follow the distribution of income across the island (see Figure 3 below for more detail). Much of San Juan and the surrounding metro area have significantly higher rates of broadband adoption than the rest of the island. In contrast, municipalities in the central region of Puerto Rico have as low as a 18% home internet adoption rate, which is one of the lowest rates of counties and county-equivalents in the entire United States. However, while the disparity between these two regions is especially stark, it's worth noting that the entire island falls significantly below the country's home broadband subscription rate of 64%.

Figure 3: Home Internet Subscriptions in Puerto Rico

Home Internet Subscriptions in Puerto Rico Household Internet Adoption by Municipality

Puerto Rico Home Internet Adoption by Household (%)
- 16%-16% (55 points below US rate)
- 17%-26% (45-55 points below US rate)
- 27%-41% (30-45 points below US rate)
- 42%-56% (15-30 points below US rate)
- 57%-57% (14 points below US rate)

Source: U.S. Census Bureau's ACS 2017-2021 5-Year Estimates.
71% of US households have broadband (e.g., Cable, Fiber Optic, DSL) and may also have cellular data, satellite, dial-up, or other wireless subscriptions.

Device Usage and Adoption

Across the board, device adoption in Puerto Rico falls significantly behind the national average. According to the most recent American Community Survey:[15]

- **25% of Puerto Ricans do not have a computing device,** compared to the U.S. average of just under seven percent. This is the highest rate of no computing device in the United States by at least 5 percentage points.
- **Many more residents in Puerto Rico only have a smartphone.** Nearly one quarter of Puerto Ricans use a smartphone with no other type of computing device, compared to the U.S. average of only 8%
- **Just under half of Puerto Ricans use a desktop or laptop,** compared to the U.S. average of three-quarters. This may be a result of income and poverty rates on the island

For a more detailed comparison and source data, please see Appendix A: Puerto Rico Internet-enabled Devices as compared with United States.

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[15] U.S. Census Bureau, "American Community Survey Data," January 26, 2023, https://www.census.gov/programs-surveys/acs/data.html.

While Puerto Ricans overall have fewer smartphones than the national average, three times more Puerto Ricans only use smartphones as a device to access the internet. Listening session participants narrowed in on the struggles of this key demographic, as seen below.

> "The vast majority is through cell phones. It's limiting for [the population]. In terms of dealing with business or doing business... It is very difficult for them. Sometimes in the countryside there is speed reduction and establishing contact with government agencies where they have to fill out applications and all those kinds of forms, at the cellular level is extremely difficult."
>
> -   Listening Session Participant

Digging deeper into American Community Survey data, the disparity of Puerto Ricans with computing devices is stark between the San Juan metro area and the Mayagüez and Ponce regions.[16] Figure 4 below clearly reveals a persistent trend observed across many U.S. states: computer devices are concentrated in areas of higher population-density and urbanization.

Taken together, these data points indicate that a device adoption strategy will need to meet residents where they are—both geographically and by digital device usage skillset. Puerto Rico's relative lack of existing digital equity programs offers an opportunity to harness its talents and resources toward delivering on its vision of Access and Knowledge for both those with device usage experience—perhaps only with a smartphone—and those without any device usage experience whatsoever.

[16] U.S. Census Bureau, "American Community Survey Data," January 26, 2023, https://www.census.gov/programs-surveys/acs/data.html.

Figure 4: Computing Devices in Puerto Rico

Computer Devices in Puerto Rico Household Computer Devices by Municipality

N

San Juan

Puerto Rico Computing Device (%)
- 43%-48% (45-55 points below US rate)
- 49%-63% (30-45 points below US rate)
- 64%-78% (15-30 points below US rate)
- 79%-90% (3-15 points below US rate)

Source: U.S. Census Bureau's ACS 2017-2021 5-Year Estimates.
93% of Puerto Rican households possess a computing device.

0   20   40
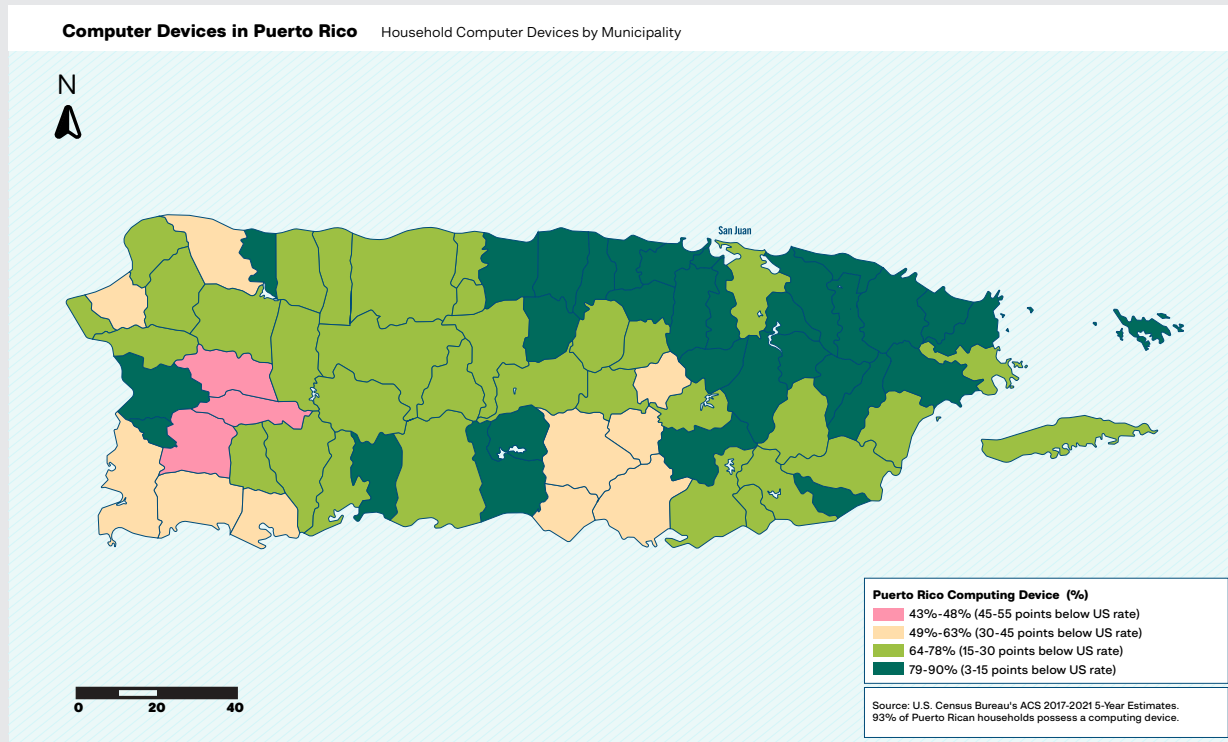
For more discussion about device usage data, please see Section 3.3.2 of Puerto Rico's BEAD Five-Year Action Plan.

Digital Skills

Digital skills of residents are hard to quantify and there is no definitive data on who has digital skills and who doesn't. However, low educational attainment, poverty, and other socio-economic factors are indicative of a lack of digital skills. Many Puerto Ricans shared with the PRBP their observations about the challenges of digital skills. As noted in the Executive Summary, the quote below reflects a recurring sentiment:

> "People have virtually no knowledge whatsoever of how to use a computer, how to use a tablet, how to navigate to job search. The most they could know how to do is with their cell phone call the numbers they already have, which are already established. But in many cases, they do not know how to call [emergency services], or how to call their medical plans to coordinate a medical appointment or to coordinate a health matter."
>
> - Listening Session Participant

PRBP will continue collecting experiences from Puerto Ricans with and without digital skills throughout the digital equity planning and implementation process.

3.1.5 Broadband Affordability

Broadband affordability is a primary focus for achieving digital equity in Puerto Rico. Almost 99% of the population is considered low wealth; the Puerto Rican median household income ($21,967) is less than one-third of the median United States household income ($69,021).[17] In addition, compared to the rest of the United States, Puerto Ricans have lower educational attainment.[18]

PRBP is working to address affordability issues in several ways, including:
· Participation in the FCC's Affordable Connectivity Program (ACP) Outreach Grant Program ($740K)[19]
· Investment of local funds to expand ACP outreach efforts ($405K)
· Plans for BEAD funds to reduce subscription costs
· Investment in device distribution efforts.

The ACP Outreach Program increases awareness of and enrollment in the ACP program, which provides an up to $30 discount for home internet service and a one-time $100 subsidy for purchasing an internet-enabled device. See the chart in Section 3.1.2 above for more details on the ACP.

While the federal government does not provide estimates of the total number of households in Puerto Rico that qualify for the Affordable Connectivity Program, the Puerto Rico Broadband Program (PRBP) analyzed all available data and estimates that almost three quarters of the households in Puerto Rico qualify for ACP, compared to 36% of households nationwide. Currently, 600,000 Puerto Rican households are enrolled in ACP, which is 65% of eligible households.[20] Although ACP enrollment in Puerto Rico surpasses that of the rest of the United States, not all residents who are eligible have enrolled in the subsidy. Continuing to increase awareness of the program is a priority, in addition to developing other affordability measures.

A recent phone survey interviewing 30 local organizations including internet service providers, government agencies, and non-profits¬ revealed that despite this 65% enrollment rate, ACP awareness among community leaders is low.

Survey & Interview Summary Findings
Organizations reported:

· Less than half of the organizations knew about the Affordable Connectivity Program (ACP)
· Only four organizations claimed to directly promote the program
· Upon learning about the program, respondents overwhelmingly reported that the people they serve would benefit from the program
· Some expressed concern that the program would not be that impactful without the digital skills needed to navigate the internet safely

To increase ACP enrollment, PRBP developed ACP enrollment training for community leaders, including AARP chapter leads, personnel in municipal governments and others on eligibility requirements and how residents can enroll.

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[17] U.S. Census Bureau, "Quick Facts Puerto Rico," July 1, 2022, https://www.census.gov/quickfacts/fact/table/PR/PST045222.
[18] U.S. Census Bureau, "Quick Facts Puerto Rico."
[19] FCC, Affordable Connectivity Outreach Grant Program, WC Docket Nos. 21-450, DA 22-194 (March 10, 2023). https://docs.fcc.gov/public/attachments/DA-23-194A1.pdf
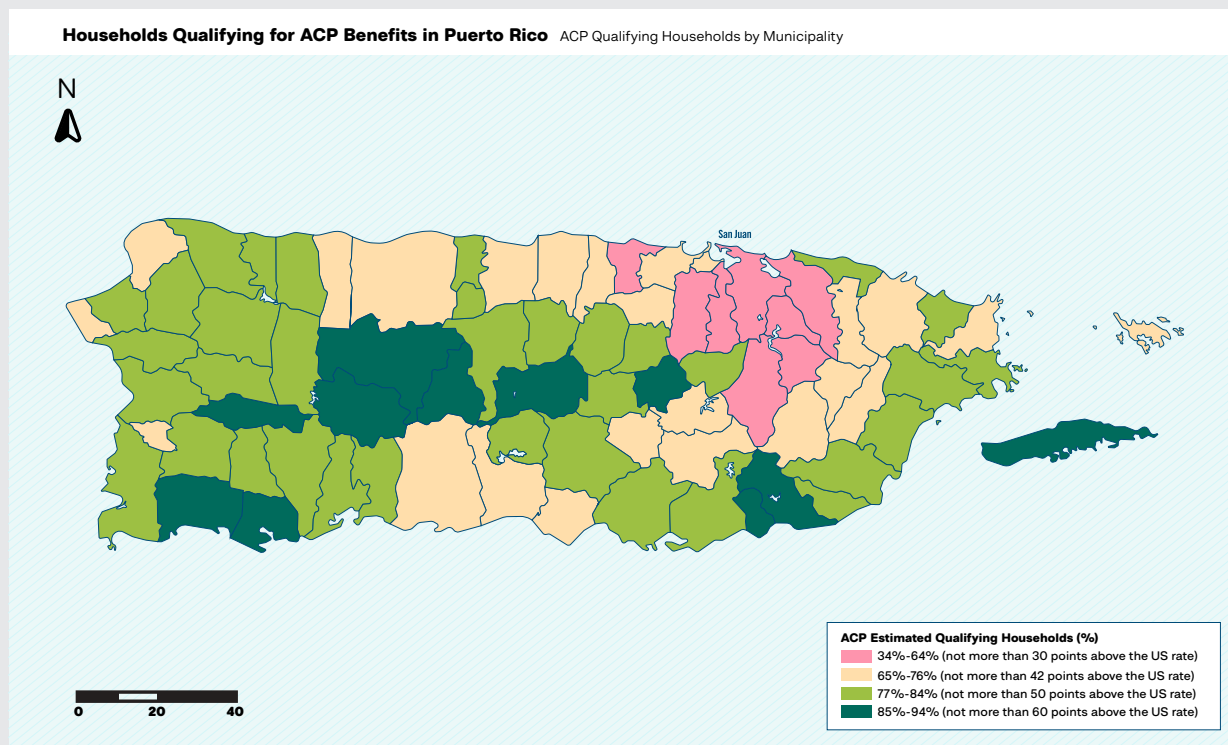[20] ACP Dashboard, accessed July 2023 at: https://acpdashboard.com/

The Puerto Rico Broadband Program (PRBP) will hold 30 ACP awareness events across the island in partnership with trusted Puerto Rican government agencies and those who have received ACP enrollment training. In addition to community leaders, PRBP will partner with the following government entities:

· The Office of the Governor
· The Office for Socioeconomic and Community Development (ODSEC)
· The Department of the Family (ADSEF)
· The Department of Housing
· The Department of Education
· The Department of Corrections and Rehabilitation
· Veteran's Office

The Puerto Rico Broadband Program is developing bilingual materials about ACP to distribute during these events and beyond. Currently on the smartisland.pr.gov website, community leaders can access a toolkit with ACP materials for social media that can be downloaded for anyone to use.

Below, Figure 5 provides a municipality-level estimate of Puerto Rican households who qualify for the Affordable Connectivity Program by meeting the household income criteria alone. These estimates set a lower bound on the number of households qualifying across the island, as data limitations prevent exact projections.

Figure 5: Households qualifying for ACP benefits

Households Qualifying for ACP Benefits in Puerto Rico   ACP Qualifying Households by Municipality

ACP Estimated Qualifying Households (%)
- 34%-64% (not more than 30 points above the US rate)
- 65%-76% (not more than 42 points above the US rate)
- 77%-84% (not more than 50 points above the US rate)
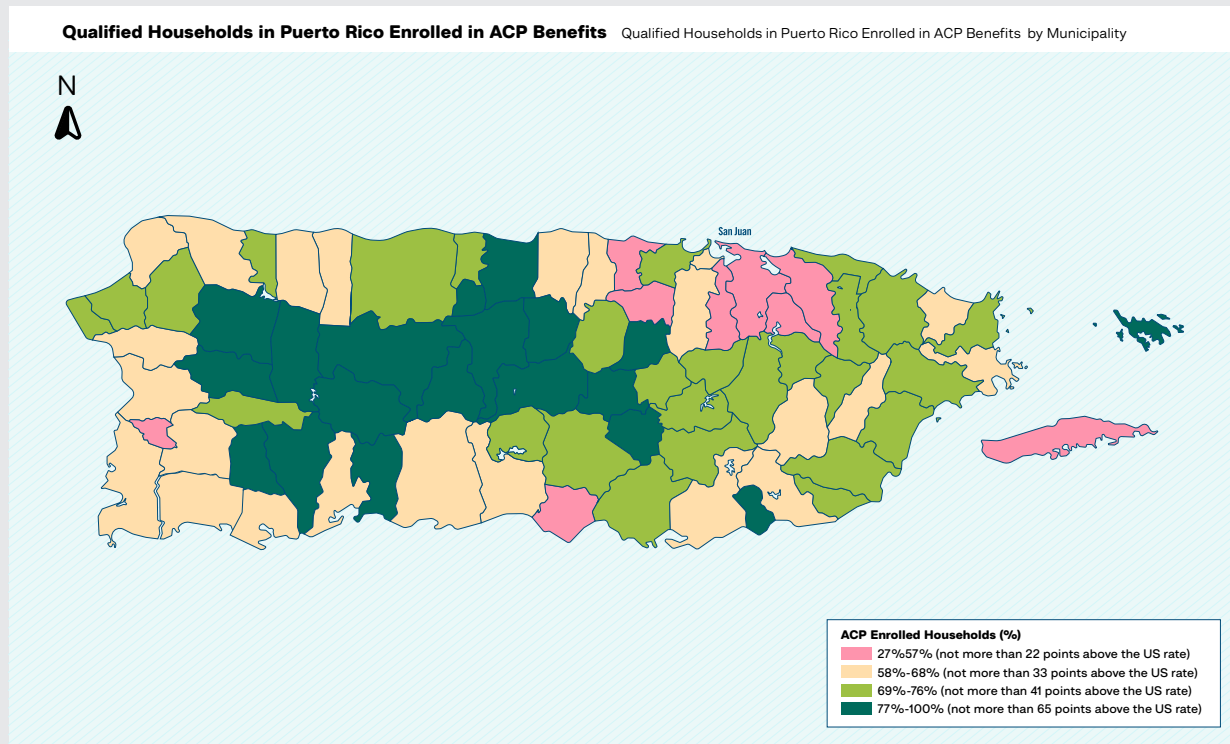- 85%-94% (not more than 60 points above the US rate)

Outside of the major metropolitan areas, over three quarters of Puerto Rican households in each municipality qualify for the ACP benefit on household income alone. As mentioned previously, this program offers an opportunity to help provide affordable high-speed Internet and a one-time device subsidy to the Puerto Rican households who need it most.

Below, Figure 6 clearly displays the success of PRBP's major enrollment efforts. Not only do all municipalities report significantly higher enrollment rates as a percentage of qualified households than the United States average—up to 65 percentage points higher in some cases—but areas with high levels of qualified households, as seen in Figure 5, have the highest rates of enrollment on the island. While more work needs to be done in enrolling households around the San Juan metro area and additional attention paid to enrollment in the Mayagüez and Ponce regions, Puerto Rico has achieved great success in ACP enrollment.

Figure 6: Qualified households enrolled in ACP benefits

Qualified Households in Puerto Rico Enrolled in ACP Benefits Qualified Households in Puerto Rico Enrolled in ACP Benefits by Municipality

N

San Juan

ACP Enrolled Households (%)
- 27%-57% (not more than 22 points above the US rate)
- 58%-68% (not more than 33 points above the US rate)
- 69%-76% (not more than 41 points above the US rate)
- 77%-100% (not more than 65 points above the US rate)

While a successful ACP enrollment program helps address the initial cost of purchasing a device with a one-time subsidy, the ACP program does not attempt to address the total cost of ownership of the device. Total cost of ownership includes maintenance costs, software upgrade costs, technical support costs, and "built in" life cycle replacement costs. PRBP recognizes the challenge of keeping devices useful and current and is in the process of developing services to address the challenge of providing sustainable devices at an affordable cost of ownership to all qualified low-income households.

3.2 Needs Assessment

Puerto Rico has experienced persistent poverty for four decades.[21] Generational poverty is the barrier that supersedes other infrastructure or programmatic barriers to Digital Equity for all Puerto Ricans, especially covered populations. According to the Census Bureau, "People living in higher poverty areas experience more acute systemic problems than people in lower poverty areas (e.g., limited access to medical services, healthy and affordable food, quality education, and civic engagement opportunities)."[22]

According to the Census Bureau, the average poverty rate for the fifty states in the United States is 14.6%. Puerto Rico exceeds all states with a poverty rate of 44% for the whole population and 57% for children.[23]

The figure that follows shows the percentage of counties/municipalities in Puerto Rico and across the country that experience persistent poverty. All of Puerto Rico's 78 municipalities experience persistent poverty, accounting for 20.6% of the total number of persistent poverty counties, 377 counties, in the United States and far exceeding the next-highest state by percentage of counties in persistent poverty (Mississippi).[24]

Figure 7: Percentage of Counties in Persistent Poverty, by State

Percentage of Counties in Persistent Poverty, by State
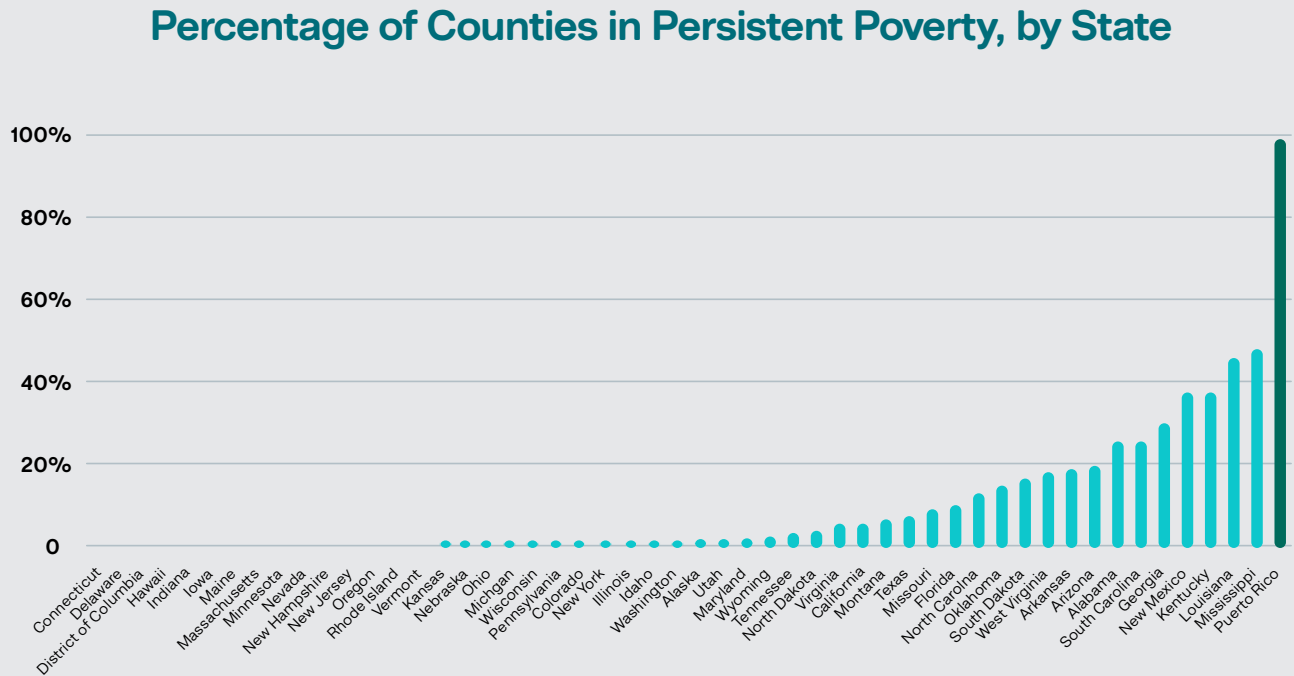
American Community Survey. ACS 5-Year Estimates Detailed Tables.

[21] "FOMB - Fiscal Plan for Commonwealth of Puerto Rico," January 27, 2022, https://drive.google.com/file/d/1STrf0ksj1Sqc54UkABGcjyrblZ-vc_JEm/, p19.
[22] US Census Bureau, "Persistent Poverty in Counties and Census Tracts," Census.gov, accessed June 29, 2023, https://www.census.gov/library/publications/2023/acs/acs-51.html.
[23] US Census Bureau, "341 U.S. Counties Experiencing Persistent Poverty," Census.gov, accessed June 29, 2023, https://www.census.gov/library/stories/2023/05/persistent-poverty-areas-with-long-term-high-poverty.html.
[24] Shawn Poynter, "The Persistence of Poverty in Rural America," Rural Research Brief (Housing Assistance Council, April 7, 2022), https://rural-home.org/wp-content/uploads/2022/04/rural-research-brief-persistent-poverty-2021.pdf.

While the U.S. exhibits bands of persistent poverty primarily in rural areas, Puerto Rico exhibits persistent poverty in both rural and urban areas. The following map drills down into the census tracts per municipality – demonstrating that while all municipalities qualify as having persistent poverty – there are few tracts that are exceptions (Figure 8). The persistent poverty barrier is the most pressing barrier and informs all other barriers to digital equity for the entire Puerto Rican population, including covered populations.

Figure 8: Percentage of people exceeding the poverty threshold by census tract in Puerto Rico
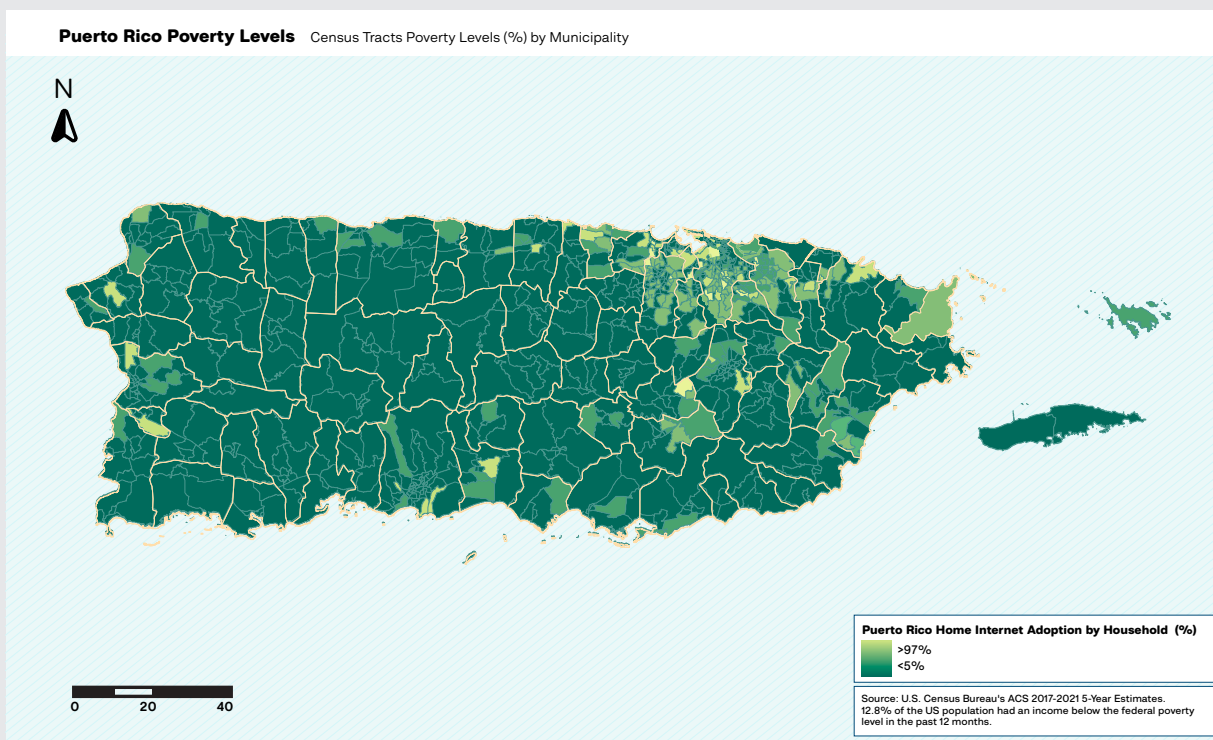
The impacts of poverty on digital equity are covered in greater detail in Section 3.3

Affordability

Both Puerto Rico's household income and education attainment lag the United States average. The Puerto Rican household income is less than one-third of the average United States household income ($21,967 in Puerto Rico to the United States' median household income of $69,021). The low median household income coupled with high costs of deploying broadband infrastructure and high subscription costs create a wide gap between current internet subscription costs and the monthly prices that would be affordable for Puerto Rican households, 99.8% of which are identified as Covered Populations (see Table 2).

Table 2. Comparison of Puerto Rico and United States Demographics, including Covered Populations

Education Attainment	Puerto Rico	United States	Percentage Point Difference
Less than High School (25+ years) 2017-2021	59.1%	24.1%	35.0
High School degree or higher (25+ years), 2017-2021	78.4%	89.9%	-11.5
Bachelor's Degree or higher (25+ years), 2017-2021	27.4%	33.7%	-6.3

Covered Populations	Puerto Rico	United States	Percentage Point Difference
People with Disabilities (Under 65) 2017-2021 [25]	14.7%	8.7%	6.0
Aging Population (65+ years) [26]	22.7%	16.8%	5.9
"Language Barrier"	94.9%	21.7%	73.2
Veterans	2.2%	5.23%	-3.0
Incarcerated Persons	0.2%	0.6%	-0.4
Racial and Ethnic Minorities	98.7%	24.2%	74.5
Rural	8.1%	20.0%	-11.9

Source: Census Bureau, July 2022

Digital Skills

According to the National Digital Inclusion Alliance, digital skills involve the ability to find, understand, evaluate, create, and communicate digital information in a wide variety of formats and technologies.[27] While no comprehensive data exists on digital skills amongst Puerto Ricans, anecdotal evidence from listening session participants have confirmed that many covered Puerto Ricans lack digital skills and the support and resources to obtain digital skills comprehensively.

[25] Census Bureau reports 65+ (however NTIA defines "Covered Population" aging as 60+).
[26] "Ages above 65 year old excluded as Aging Population already covers all persons above age 65.
[27] "Definitions," National Digital Inclusion Alliance, accessed June 29, 2023, https://www.digitalinclusion.org/definitions/.

> The older adults 65+ have a deficit of knowing how to use technology.

> They don't understand cell phones and they don't have money for computers

— Listening Session Participant

Further data on digital skills in Puerto Rico will be available upon the completion of a PRBP study that is currently underway.

Technical Support & Digital Navigators

Access to affordable internet connectivity and devices are not sufficient to promote adoption—residents also must be able to use and maintain these devices. A successful maintenance and upkeep program has two distinct requirements: residents must both be able to problem-solve to resolve basic technical problems (e.g., a frozen screen), as well as have a trusted person or organization to turn to in the case of more difficult or specialized issues. Trained digital navigators provide solutions to both—they can provide trusted ongoing assistance with affordable internet access, device acquisition, basic technical skills, and application support to enable a Do-It-Yourself attitude, while also serving as an easily accessible, more-advanced resource to solve or triage more complex technical issues when residents need.

> I have a lack of technical support.

> I'm dependent on my kids helping me, and they won't.

> "People wantto be able to use their phone to do more and connect with others and services, but they didn't know where or how to access support or whether programs or people to help them even exist.

— Listening Session Participants

If Puerto Ricans currently have access to trusted and reliable technical support, it is often limited and on a volunteer basis from family members. Comments about technical support from listening session participants highlight this well:

Further data on technical support needs and availability of digital navigators in Puerto Rico will be available upon the completion of a PRBP study that is currently underway.

Natural Disasters

Puerto Rico is impacted by the North Atlantic Hurricane season, which lasts from June through November. The frequency and intensity of hurricanes and flooding have increased since the 1980s and pose a significant threat to the infrastructure and economy. The Puerto Rico Broadband Program is working to develop resilient infrastructure so that as digital equity efforts advance, internet outages are less frequent and less disruptive, and residents can feel safe in the knowledge they will maintain connectivity with emergency resources even during island-wide natural disasters.[28]

3.3 Covered Population Needs Assessment

Understanding covered populations in Puerto Rico requires an appreciation of both the text of the Digital Equity Act and its intent. It is only within the context of the entire United States that Puerto Ricans—on an island where nearly 99% of residents identify as Hispanic—can be considered a minority group.[29] While 95% of Puerto Ricans speak Spanish at home, only 25% speak English "very well." Here, in Puerto Rico itself, Spanish speakers are the majority, not the minority.

The island's unique demographics mean that nearly all Puerto Ricans (99.8%) are considered part of the Digital Equity Act's "covered populations." But despite the seemingly contradictory justifications to qualify, all-but-full coverage by the Act is no mistake. The historic, decades-long neglect of Puerto Rico by the mainland United States has left the entire island on the wrong side of the digital divide—a divide the Act clearly intends to help close. Opportunities for affordable internet, devices, and digital skills training are sorely needed. The Digital Equity Act is an investment in the people of Puerto Rico and is a once-in-a-generation opportunity to achieve digital equity across the island.

The remainder of this section outlines the needs and barriers that all Puerto Ricans face to getting and staying online, and only distinguishes between covered population group where appropriate. As the stories and lived experiences Puerto Ricans shared with the PRBP throughout the planning process made clear, these divisions mostly exist on paper. Puerto Ricans hold many identities, and shared needs and barriers are reflected across many the different groups which make up the 99.8% of Puerto Ricans covered under the Digital Equity Act.

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[28] Chris Currie, "2017 Hurricanes: Update on FEMA's Disaster Recovery Efforts in Puerto Rico and the U.S. Virgin Islands" (Subcommittee on Economic Development, Public Buildings, and Emergency Management, Committee on Transportation and Infrastructure, House of Representatives, September 15, 2022), https://www.gao.gov/assets/gao-22-106211.pdf.

[29] U.S. Census Bureau, "Quick Facts Puerto Rico," July 1, 2022, https://www.census.gov/quickfacts/fact/table/PR/PST045222.

Table 3: Covered Populations – Assessment of Needs and Barriers

Digital Equity Considerations	*Needs*	*Covered Population*
Broadband Availability & Affordability • Non-resilient infrastructure, geography, and inclement weather can cause long-lasting service outages. • Lack of reliability reduces effectiveness of e-commerce, education, social interaction, accessing constituent services, and health services. Persistent lack of affordability: • Fewer providers in rural areas limit choice and pricing options. • Lack of net neutrality. • $30/month "low-cost broadband service option" is not feasible for Internet Service Providers and is not universally affordable throughout Puerto Rico.	• Reliable, fast broadband access at Community Anchor Institutions • Increased support & coordination with partners for ACP outreach to communities where uptake is low or zero. • Evaluate current and projected heavy data use activities across demographic groups. • Examine metrics such as median household income, property value, and the number of households with students enrolled in school lunch programs to determine where additional efforts will be needed to address affordability beyond the ACP benefit or fixed "low-cost broadband service option." • Funding support beyond ACP for areas where an internet subscription is prohibitively expensive, even after ACP.	All covered populations
Device Availability & Affordability • Outdated/insufficient hardware. • Lack of awareness of financial assistance for purchasing new devices. • Lack of knowledge in setting up new devices. • Lack of training for constituent/client support for providing technical assistance.	• Affordable devices and access to repair and maintenance services. • Easily teachable, loanable devices for personal use. • Increased awareness of existing programs to assist with device purchasing costs. • Personnel and programming to help people identify devices that fit their needs.	All covered populations
Online Accessibility & Inclusivity • Disabled individuals reported assistive device accessories affordability challenges. • Government services websites not all mobile-friendly. • Lack of people/capacity to assist with navigating inaccessible websites/services.	• State and local government adoption of best practices for online inclusion and accessibility. • Increased capacity in communities to provide assistance with and access to non-mobile devices with internet service.	Primarily serves: • Individuals with disabilities • Aging individuals
Digital Literacy • Older and disabled individuals more likely to report it was hard to keep up with changing technology. • Lack of easily accessible digital education. • Lack of understanding of internet • Lack of existing local community digital resources.	• Basic digital literacy trainings. • Intermediate digital literacy trainings. • Device literacy trainings.	All covered populations
Online Privacy, Safety and Cybersecurity • Lack of knowledge or understanding. • Lack of experience with identifying information sources leading to increased risk for phishing and scams. • Safety measures are hindered beyond the online experience, including lack of bandwidth for security systems at homes, and search and rescue emergency services challenge.	• State and local government adoption of best practices for online inclusion and accessibility. • Increased capacity in communities to provide assistance with and access to non-mobile devices with internet service.	Primarily serves: • Individuals with disabilities • Aging individuals

Throughout the next grant round of the Digital Equity Act, the Government of Puerto Rico will be better able to distinguish barriers unique to certain smaller subpopulations through continued engagement strategies and surveys of the public. For the purposes of this Digital Equity Plan, the following subsection captures the barriers and needs that impact everyone in Puerto Rico.

As required by the Digital Equity Act, the following subsections provide a brief commentary on additional barriers and considerations faced by specific covered populations, as many barriers persist across the entire population and the majority of the population are Spanish speakers, thus labelling them as a covered population by the DEA definition since English is a second language.

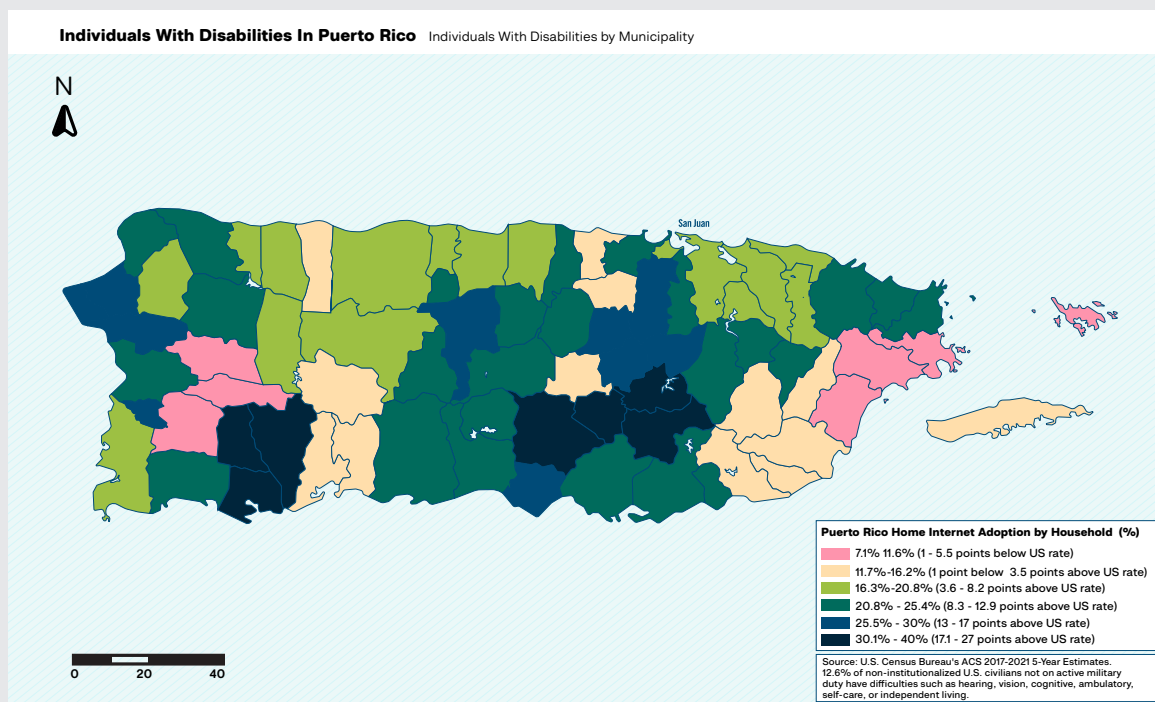## 3.3.1 Individuals with Disabilities

The baseline of Puerto Rican individuals with disabilities is almost twice that of the United States, with highest rates of individuals with disabilities are around Guánica and Caguas (Figure 9). Individuals with disabilities share many of the same barriers that the rest of the Puerto Ricans experience. In addition, individuals with disabilities have special considerations for accessing the internet, such as mobility, seeing, hearing, and human interface (e.g., use of keyboard, mouse, joystick, or voice activated) that require adaptive accessories.

Considerations for Adaptive Accessories

Adaptive accessories may be:

- Costly
- Need to be imported onto the island
- Require special skills to install and maintain
- Require specially trained support staff and Digital Navigators to accommodate special needs.

Figure 9: Individuals With Disabilities in Puerto Rico

Individuals With Disabilities In Puerto Rico Individuals With Disabilities by Municipality

Puerto Rico Home Internet Adoption by Household (%)

- 7.1% 11.6% (1 - 5.5 points below US rate)
- 11.7%-16.2% (1 point below 3.5 points above US rate)
- 16.3%-20.8% (3.6 - 8.2 points above US rate)
- 20.8% - 25.4% (8.3 - 12.9 points above US rate)
- 25.5% - 30% (13 - 17 points above US rate)
- 30.1% - 40% (17.1 - 27 points above US rate)

Source: U.S. Census Bureau's ACS 2017-2021 5-Year Estimates. 12.6% of non-institutionalized U.S. civilians not on active military duty have difficulties such as hearing, vision, cognitive, ambulatory, self-care, or independent living.
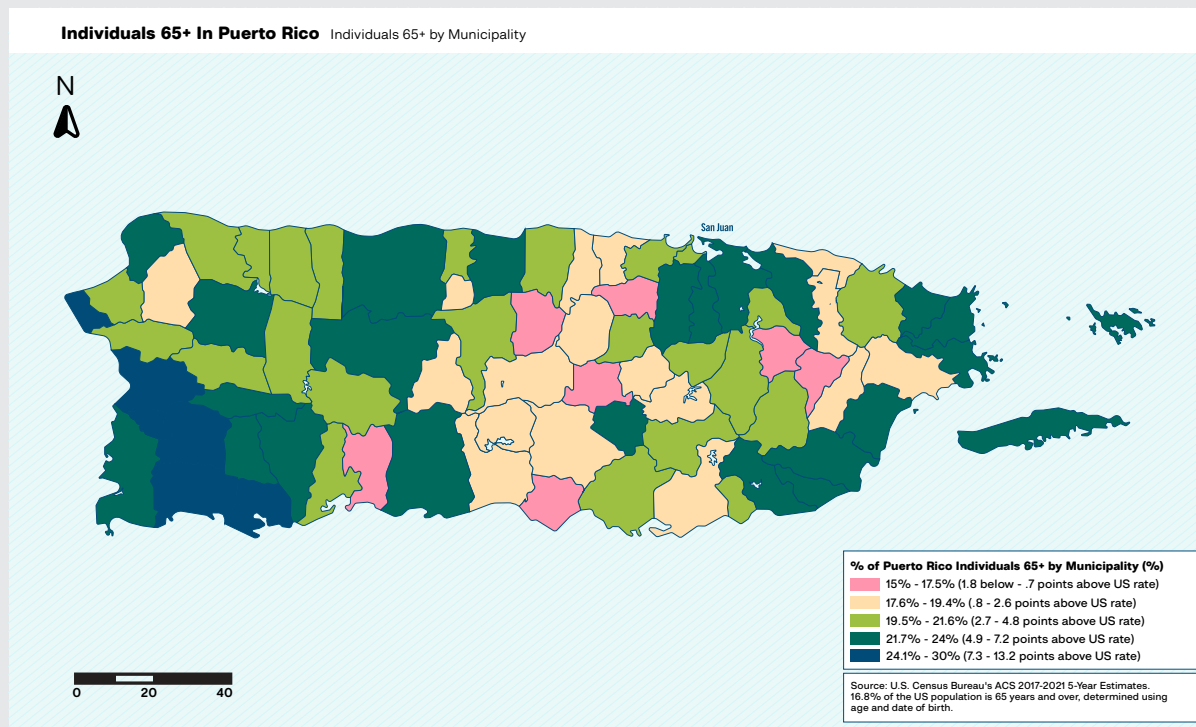
Additionally, internet centers and digital equity programs will require venues that accommodate individuals with disabilities' needs through compliance with the Americans with Disabilities Act and other considerations.

3.3.2 Aging Persons (60+)

Puerto Rico's percentage of aging population exceeds that of the United States by 135%. While Mayaguez has the highest concentration of aging individuals, the Puerto Rico map depicts aged 65+ by municipality shows about 90% of the municipalities have an aged population that exceeds that of the United States (Figure 10). The barriers to participate in the digital world that are unique to the aging population include their fears of internet privacy and cybersecurity, lack of education, fixed income on Social Security, and potentially their isolation precluding their family members from helping them.

Figure 10: Individuals 65+ In Puerto Rico

Individuals 65+ In Puerto Rico Individuals 65+ by Municipality

N

San Juan

% of Puerto Rico Individuals 65+ by Municipality (%)
- 15% - 17.5% (1.8 below - .7 points above US rate)
- 17.6% - 19.4% (.8 - 2.6 points above US rate)
- 19.5% - 21.6% (2.7 - 4.8 points above US rate)
- 21.7% - 24% (4.9 - 7.2 points above US rate)
- 24.1% - 30% (7.3 - 13.2 points above US rate)

Source: U.S. Census Bureau's ACS 2017-2021 5-Year Estimates. 16.8% of the US population is 65 years and over, determined using age and date of birth.

0   20   40

3.3.3 English as a Second Language

Puerto Rico is distinct in that Spanish is the dominant language compared to other states in the mainland. Ninety-five percent of island residents speak Spanish. According to the U.S. Census Bureau, these same residents also face English language barriers. However, for Spanish-speaking residents who don't speak English well, many everyday functions are not limited because business and personal life on the island predominantly operates in Spanish. Therefore, for the purposes of this section, NTIA's "language barrier" framing will be instead adapted into Puerto Ricans speaking "English as a second language."

Nevertheless, English is a major language of the Internet, especially in the United States, and lack of English proficiency can lead to a barrier in front of its English-language resources and information.

To ensure equal opportunity to digital equity resources, all digital equity related communication materials—best practices from partners off-island and federal resources— should be Spanish-first and culturally relevant. Such resources may include awareness campaigns for ACP outreach and enrollment materials, internet-enabled device manuals, digital skills training program materials and technical support assistance. The map in Figure 11 makes this point—if materials are in exclusively English, many residents for whom English is a second language will miss out on valuable information, particularly if those residents are outside of the San Juan metro area.

Figure 11: Individuals Speaking Spanish and Speaking English Less Than "Very Well" in Puerto Rico
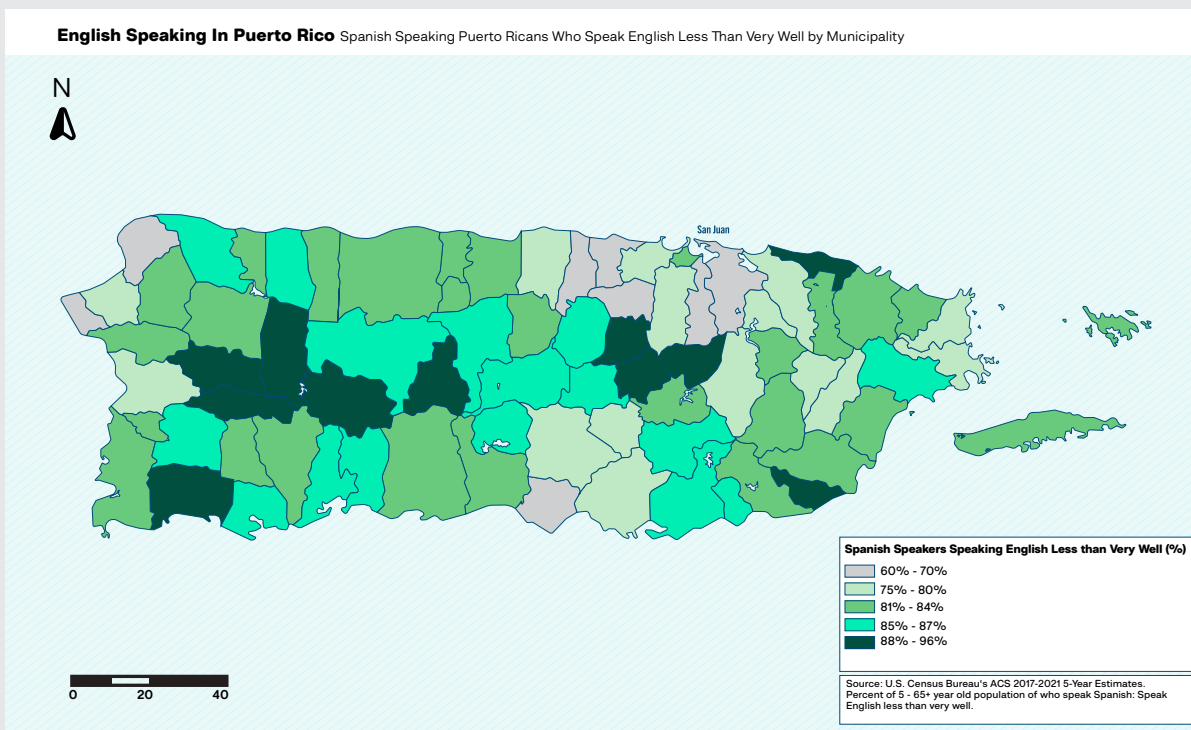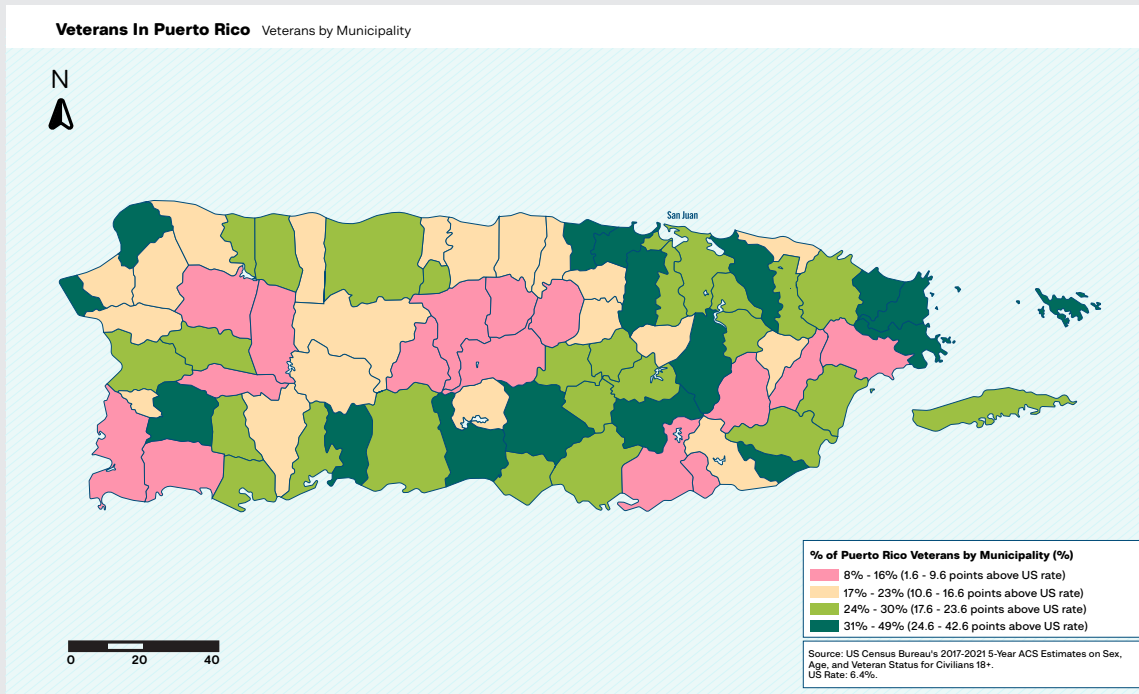

3.3.4 Veterans

Veterans living in Puerto Rico make up 2.2% of the population. According to the Census Bureau Veteran Statistics, the Puerto Rican veteran population is better educated (enrolled in college, bachelor's degree or higher) and has a higher income $33,000 than the Puerto Rican average of $22,000.[30] Veterans use VA healthcare at a much higher rate than in the United States. However, their service-connected disability rating exceeds the United States by about 150%. Approximately 55% of Puerto Rican veterans are 65+ (as compared to average of approximately 43% aged 65+). Veterans experience many of the same barriers as other non-veterans in the disability or aging covered populations.
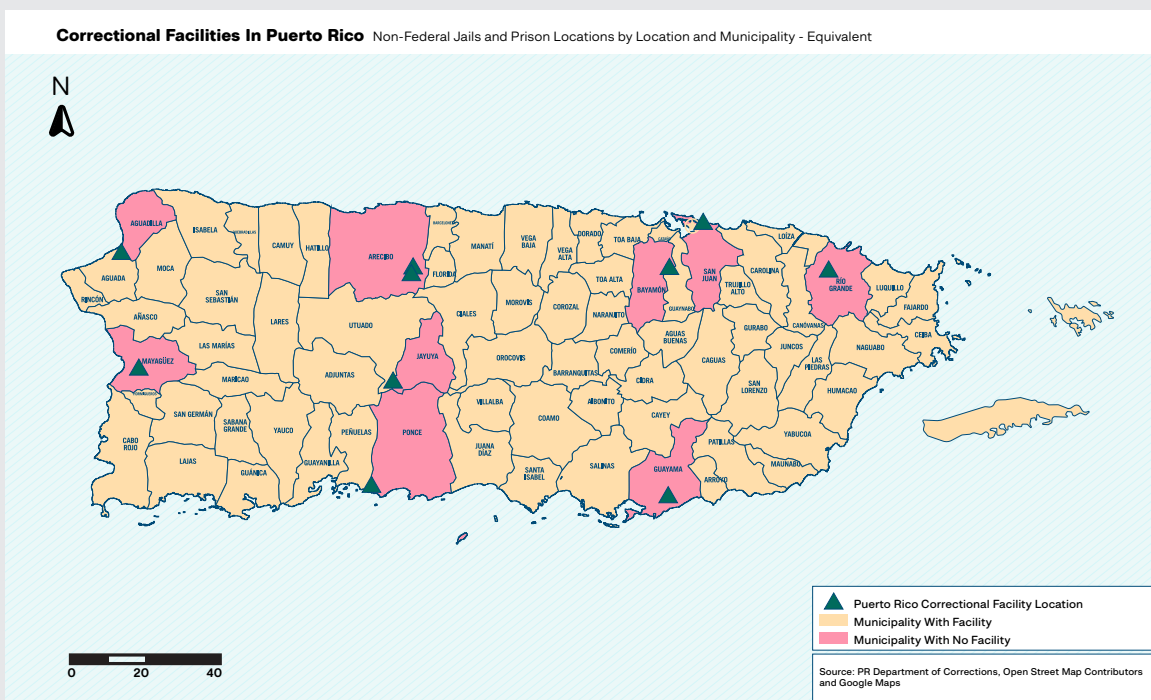
[30] "Veterans Statistics: Puerto Rico" (United States Census Bureau, 2015), https://www2.census.gov/library/visualizations/2015/comm/vets/pr-vets.pdf.

Figure 12: Percentage of Individuals That Are Veterans, By Municipality

Veterans In Puerto Rico Veterans by Municipality

San Juan

% of Puerto Rico Veterans by Municipality (%)
- 8% - 16% (1.6 - 9.6 points above US rate)
- 17% - 23% (10.6 - 16.6 points above US rate)
- 24% - 30% (17.6 - 23.6 points above US rate)
- 31% - 49% (24.6 - 42.6 points above US rate)

Source: US Census Bureau's 2017-2021 5-Year ACS Estimates on Sex, Age, and Veteran Status for Civilians 18+.
US Rate: 6.4%.

0   20   40

3.3.5 Incarcerated Individuals

Figure 13: Locations of Correctional Facilities in Puerto Rico

Correctional Facilities In Puerto Rico Non-Federal Jails and Prison Locations by Location and Municipality - Equivalent

▲ Puerto Rico Correctional Facility Location
  Municipality With Facility
  Municipality With No Facility

Source: PR Department of Corrections, Open Street Map Contributors and Google Maps

0   20   40

According to the Institute for Crime & Justice Policy Research, as of late 2021, there were 7,176 imprisoned people in Puerto Rico (including pre-trial detainees / remand prisoners).[31] Incarcerated individuals have little to no access to the internet, and currently there are a limited number of programs designed specifically for residents leaving the prison system in Puerto Rico. Reintegration plans into the free community begin when an individual has less than six months left of their sentence. In the case of elementary or high school studies, the Department of Education is responsible for offering such services. In the case of post-secondary studies, coordination is carried out with post-secondary educational institutions where they offer guidance to the correctional population. Providing incarcerated individuals with digital skills, workforce skills, and retraining is a goal of the PRBP and will support their successful re-entry into society.

The following map shows the types and locations by municipality of correctional facilities; these are mostly located in proximity to population centers, making the logistics of providing a broadband connection and/or training opportunities easier (Figure 13).

3.3.6 Racial and Ethnic Minorities

Distinctly, almost all (98.7%) of Puerto Ricans identify as Hispanic; in no other part of the United States does a majority of the population identify as Hispanic. Thus, labelling Hispanic residents as minorities may make sense in the mainland United States, but not in Puerto Rico. It is this incongruity, in conjunction with speaking Spanish (as described above in Section 3.3.3) that creates such high rates of covered populations on the island.

As nearly all Puerto Ricans are included in this diverse category, no specific digital equity challenges can be provided in this subsection. Please refer to the beginning of the Needs Assessment for additional information on what digital equity challenges Puerto Ricans face.

3.3.7 Rural

There are three non-rural areas in Puerto Rico: the San Juan metro, as well as the Ponce and Mayagüez regions. The remainder of the island qualifies as rural, as can be seen in the map below (Figure 14).

Rural areas in Puerto Rico are also lower income. These rural residents have limited internet availability and when it is available, it is often at a higher cost. When internet isn't available at home, rural residents experience transportation challenges. Those without access to a car or a bus are met with even greater barriers to accessing digital skills training and technical support or connecting with a digital navigator. This lack of convenience and proximity further prevents equitable access.
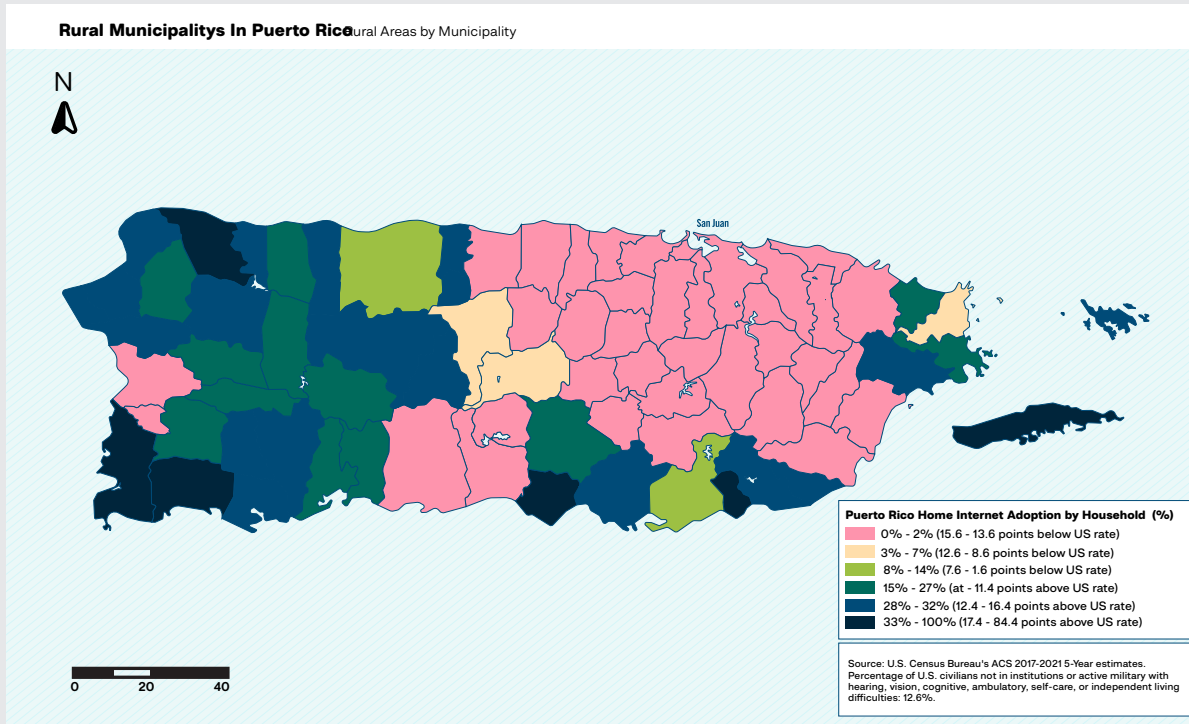
Ensuring rural areas have affordable and reliable internet connections at home or within walking distance will help increase device and broadband adoption rates across the island.

The Government of Puerto Rico has a historic and unique opportunity to close the digital divide for all Puerto Ricans as concurrent efforts to expand broadband infrastructure proceed. While limited nongovernmental digital equity assets and persistent poverty in all 78 municipalities makes addressing Puerto Rico's digital equity needs difficult, the $1.2 billion infusion into the island's digital ecosystem means the moment is ripe to make meaningful change. This is the time for Puerto Rico to build resilient, community-driven initiatives; integrate its agencies, partners, and stakeholders; and deliver tailored digital equity services to all Puerto Rican residents. With increasing data collection capacity and federal

funds to track progress, PRBP will be better able to track assets, needs and outcomes for covered populations.

Figure 14: Percentage of Rural Area in Puerto Rico, By Municipality

Rural Municipalitys In Puerto Rico Rural Areas by Municipality

N

San Juan

Puerto Rico Home Internet Adoption by Household (%)

- 0% - 2% (15.6 - 13.6 points below US rate)
- 3% - 7% (12.6 - 8.6 points below US rate)
- 8% - 14% (7.6 - 1.6 points below US rate)
- 15% - 27% (at - 11.4 points above US rate)
- 28% - 32% (12.4 - 16.4 points above US rate)
- 33% - 100% (17.4 - 84.4 points above US rate)

Source: U.S. Census Bureau's ACS 2017-2021 5-Year estimates. Percentage of U.S. civilians not in institutions or active military with hearing, vision, cognitive, ambulatory, self-care, or independent living difficulties: 12.6%.

0   20   40

SECTION 4
Collaboration and Stakeholder Engagement

To ensure coordination across programs and robust stakeholder engagement, PRBP's outreach activities addressed both Digital Equity and BEAD program requirements relating to and deployment. Mayors of municipalities, government leaders, service providers, and community representatives provided PRBP information about their connectivity goals and infrastructure insights alongside strategies for addressing adoption and affordability concerns. The following sections detail how PRBP approached stakeholder engagement during plan development and plans for ongoing engagement.

4.1 Coordination and Outreach Strategy for Plan Development

This section demonstrates the breadth and depth of PRBP's collaboration with partners and key stakeholders and highlights the formalized groups that are supporting the development of the Digital Equity Plan and the implementation process.

4.1.1 Key Collaborators

As 99.8% of Puerto Ricans are covered by the Digital Equity Act, stakeholder events covered all regions of the island. The Puerto Rico Broadband Program (PRBP) provided residents the opportunity to inform digital equity programming through a variety of methods: in-person government service events, phone surveys, and online contact information. In addition to island-wide efforts, PRBP hosted and joined meetings with government agencies, community leaders, and leaders of covered populations that make up smaller percentages of the population, including veterans and incarcerated individuals.

Broadband Executive Committee

The Broadband Executive Committee was established by Governor Hon. Pedro R. Pierluisi to advise and support the PRBP's efforts. Members have the obligation to establish the necessary controls to ensure that the use of these funds is carried out in accordance with the applicable regulations. The Executive Committee is made up of the Government's Chief Innovation and Information Executive, an official with decision-making power from the Telecommunications Bureau, the Office of Management and Budget, the Department of Treasury, and the Secretary of the Government for Innovation, Information, Data and Technology.

Broadband Advisory Council

The Broadband Advisory Council was also established by Governor Hon. Pedro R. Pierluisi to advise and support the PRBP's efforts.[32] These eight council members, representing entities described in Table 4, contribute specialized knowledge on broadband infrastructure and digital equity. Throughout this planning process, the Broadband Advisory Council reviewed digital equity plans and approved strategies that support continued broadband adoption in Puerto Rico.

Digital Equity Advisory Subcommittee

A subset of community leaders was selected to serve on the Digital Equity Advisory Subcommittee which includes representatives of groups working with each of the covered populations outlined by NTIA, described in Table 4 below. The Digital Equity Advisory Subcommittee provided early feedback on portions of plan content and reviewed a full draft of this digital equity plan. Following the public comment period, the Digital Equity Advisory Subcommittee will support the Puerto Rico Broadband Program in responding to comments and incorporating feedback into an updated Digital Equity Plan.

Partners

In addition to formalized groups, PRBP partnered with a broad range of organizations and government entities. These partners completed surveys, attended planning events, and provided data. Partners have also contributed department resources, shared local knowledge, and supported PRBP's work with special populations.

For example, **The Puerto Rico Office for Socioeconomic and Community Development (ODSEC), the Department of Economic Development and Commerce, and the Administration for the Socioeconomic Development of the Family (ADSEF)** provided connections for assessments and outreach, including contact information for community groups and longstanding services for marginalized communities that require additional support for use of high-speed internet and internet-enabled devices. In partnership with Estudios Técnicos, the PRBP was able to add connectivity and adoption data collection in existing government surveys.

Nearly 80% of municipalities have participated in broadband meetings and provided specific information for connectivity projects in their areas. All 30 chapters of the **American Association of Retired Persons (AARP)** in Puerto Rico have collaborated with the PRBP to ensure all measures to offer high-speed internet and internet-enabled devices are made accessible for residents aged over 50.

The Puerto Rico Broadband Program has made significant strides in the last year by integrating connectivity and adoption measures with current efforts and utilizing stakeholder resources for maximum impact. Table 4 below lists the key collaborators for plan development.

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[32] Puerto Rico Department of State, https://www.estado.pr.gov/ordenes-ejecutivas

Table 4: Key Collaborators in Plan Development

Broadband Executive Committee	*Broadband Advisory Council*	*Digital Equity Advisory Subcommittee*	*Additional Partners*
· Telecommunications Bureau · Office of Management and Budget · Department of Treasury · Secretary of the Government for Innovation, Information, Data and Technology · Government's Chief Innovation and Information Executive	· Aqueduct and Sewers Authority · Association of Mayors · Telecom Alliance · Highway and Transportation Authority · Federation of Mayors · Department of Public Safety · Department of Housing · Fiscal Authority	· Patient Advocate Office (OPP) · Elder Advocate Office (OPPEA) · Veteran Advocate Office (OPV) · Defender of the People with Disabilities (DPI) · Universities Representatives · Community Leader Representatives · Union Representatives · Health Associations · Non-Profits representatives · Internet Society Puerto Rico (ISOC) · Department of Corrections and Rehabilitation · TecnoAbuelos · American Association of Retired Persons (AARP)	· Municipal Governments · Office for Socioeconomic and Community Development (ODSEC) · Department of Economic Development and Commerce · Administration for the Socioeconomic Development of the Family (ADSEF) · Estudios Técnicos

4.1.2 Outreach Activities

Outreach has been a primary activity of the Puerto Rico Broadband Program throughout its first year. The collaboration and stakeholder engagement conducted for this plan has helped the PRBP establish relationships with relevant stakeholders, critical for ensuring broadband deployment and support programs are designed to serve the needs of residents. PRBP launched multiple avenues for engagement in Spanish and English to facilitate efficient information gathering from stakeholder groups and prepare planning with useful, current data. The following summaries describe all outreach activities conducted by the PRBP during the digital equity planning process.

Smart Island Summit

In April 2023, PRBP hosted the first Smart Island Summit to promote a collaborative effort among municipalities, telecommunications leaders, academics, non-profits, advocates, and government agencies. Nearly 300 stakeholders gathered in Puerto Rico Convention Center to discuss strategies for reducing the digital divide in Puerto Rico. Topics included connection during emergencies, global connectivity trends, workforce strategies, health, inclusivity for aging individuals, the role of service providers, and cybersecurity.

Regional Listening Sessions & Municipal Engagement

PRBP hosted regional listening sessions throughout the island and conducted municipality follow-

up meetings. During listening sessions, residents discussed their connectivity issues and provided suggestions for areas in their community that could potentially serve as hubs for digital connection. In sessions with municipal leaders, the PRBP received feedback on areas to be prioritized for public Wi-Fi projects and how each municipality will consider digital opportunities.

Stakeholder Meetings

From August 2022 to June 2023, the Puerto Rico Broadband Program PRBP arranged meetings with stakeholders to inform workforce planning, digital equity, and infrastructure strategies. In over 15 meetings with service providers and universities, PRBP sought information about challenges hiring for infrastructure projects, new curriculum needs, and digital literacy development opportunities. PRBP encouraged the participation of organizations serving covered populations to inform planning for service affordability and adoption, digital literacy, and device programs.

Interviews of Representatives of Covered Populations

To better assess the current state of digital equity activities and barriers in Puerto Rico, PRBP launched an interview series of individuals from organizations representing covered populations, including those representing individuals with disabilities, incarcerated populations, aging individuals, veterans, and a range of underrepresented communities. This effort complemented existing efforts by the PRBP and ensured all stakeholder groups were consulted during digital equity planning. Preliminary findings from these interviews are described in Section 3.

Survey of Key Organizations

The Puerto Rico Broadband Program surveyed entities across the island on their existing initiatives that drive digital inclusion work in Puerto Rico. This multi-use survey covered requirements for both Digital Equity and the Broadband Equity, Access, and Deployment (BEAD) Grants and was distributed to leaders of government agencies, school districts, higher education representatives, nonprofits, philanthropic organizations, internet service providers, and some private entities hosting relevant services.

Through distribution by email and at events, PRBP's outreach team sent over 700 requests to entities across the island. Of those requests, PRBP received 36 complete responses, with a higher response rate from private entities, service providers, and universities. The low response rate from nonprofit leaders suggests that this survey was a burden for staff to complete, or that accessing the online survey via email and web browser was not possible. This low response rate suggests that online activities are not currently a priority or made easily available to many of those providing some of the most essential services directly to communities in need. PRBP will continue to work with nonprofit leaders to plan programs that support increased use of online resources in ways that support the vital activities of these community groups.

Digital Equity Survey

An island-wide telephone survey was conducted to understand the extent to which the internet is currently available, affordable, and used by residents that are unreachable otherwise. This study provided a timely update to previous broadband data collection in Puerto Rico.[33] Questions included discussions on devices and internet use, as well as an assessment of current privacy and cybersecurity practices of residents.

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[33] 2010, 2012, 2014, 2016, and 2018 Connect Puerto Rico Residential Technology Assessments.

Connectivity Survey

From March 2023 through May 2023, the PRBP, through events, social media posts, press releases and email newsletters, provided residents the opportunity to complete an online internet service survey. Residents were asked about their choice of providers, available speeds, service costs, and technology use. Residents completing the survey from their homes were prompted to run an optional speed test.

While primarily focused on information relevant to the BEAD Program, the 443 respondents also provided information about their awareness of and enrollment, as applicable, in broadband subsidy programs such as the Affordable Connectivity Program (ACP). The survey also led respondents through a self-assessment of digital skills. PRBP will consider continued distribution of this survey throughout program implementation.

Phone Survey

In May 2023, PRBP conducted a series of telephone interviews with households throughout Puerto Rico, asking residents about their computer ownership, internet adoption, and familiarity with initiatives tailored to assist low-income households in gaining online access. Approximately 1,000 residents responded to and provided information about the above topics.

Community Leaders Training

In August 2023, the PRBP conducted a virtual meeting with several community leaders across the island and provided information of the Affordable Connectivity Program (ACP), its enrollment steps and eligibility to ensure they can broadcast the information to their communities and increase ACP adoption.

4.2 Ongoing Engagement Strategy

As the Puerto Rico Broadband Program moves toward the DEA Capacity Grant phase, it will continue to engage with representatives of covered populations and a range of stakeholders throughout the island. This consistent engagement is critical for meeting residents where they are and providing appropriate programs and affordability measures. The following subsections present the PRBP's plans for an ongoing engagement that supports digital equity goals in Puerto Rico.

Public Comment

PRBP will post the Digital Equity Plan online with an open Request for Comments where individuals will be able to comment on a specific page, section, and subsection. Comments will also be accepted by email to info@smartisland.pr.gov and will be received through October 15, 2023. The PRBP will respond to comments received and incorporate relevant changes before submission of an updated document to the NTIA.

PRBP Committees

In support of ongoing review, the Puerto Rico Broadband Program will continue to seek feedback from community leaders with specialized knowledge beyond plan submission. PRBP will continue consultations with the Broadband Advisory Council for both infrastructure and digital equity planning to promote integrated strategies for achieving all connectivity and adoption goals. The Digital Equity Advisory Subcommittee will convene following the public comment period and on a biweekly basis thereafter to evaluate digital equity efforts and support PRBP's participation in future digital equity grants.

Workforce Entities

The PRBP is interested in expanding the workforce in Puerto Rico by facilitating increased remote education and work opportunities for residents across the island, especially those living in rural areas and in "covered households" according to the NTIA. The PRBP will evaluate potential partnerships with a range of stakeholders, including the University of Puerto Rico system and workforce and labor organizations.

PRBP will consider expanding existing workforce initiatives hosted by other government offices. For example, the Department of Economic Development and Commerce (DDEC) has led a multi-year effort to bolster on-island opportunities in the information technology industry. Future discussions will evaluate efforts to integrate current support of information technology jobs and training with other career paths by exploring options for digital support applicable to all members of the workforce.

PRBP's will develop a Labor and Workforce Advisory Committee to support broad workforce strategies. The Labor and Workforce Advisory Committee will be established to ensure all planned infrastructure is made possible through an expanded broadband workforce. While committee members will focus closely on the broadband workforce for the purposes of the BEAD program, the representatives from universities, training programs, and service providers can offer workforce policy feedback applicable to other industries. The Labor and Workforce Committee will convene on a quarterly basis and will contribute to the program's capacity to connect digital equity strategies to the current needs of residents and existing efforts.

Implementation Partners

In addition to workforce policy implementation, Puerto Rico will utilize local expertise to build equity into all infrastructure and digital inclusion programming. A key component will be engaging stakeholders and community members in the early stages of implementation. Successful implementation of the strategies and priorities for digital equity laid out in this plan will significantly improve financial, health, and education outcomes for residents. Recognizing this connection, the PRBP will leverage existing relationships throughout the Government of Puerto Rico to combine support for digital services with efforts across the economic development, health, and education sectors. PRBP will consider partnerships with a variety of entities supporting rural and marginalized communities, including the Association of Hospitals of Puerto Rico.

Following the success of outreach events during the last year, PRBP will continue to encourage additional feedback from residents, especially those in covered populations experiencing additional barriers to digital connection. PRBP is planning future consultations with representatives of covered population groups throughout the island. As available, PRBP is encouraging requests and comments from stakeholders beyond submission of the Digital Equity and Five-Year Action Plans. The PRBP can be reached through info@smartisland.pr.gov and will continue regular attendance at public service events. The Puerto Rico Broadband Program is committed to developing comprehensive, data-driven inclusion strategies informed by the needs and priorities of the people of Puerto Rico. To keep planning aligned with the needs of residents, the PRBP will conduct ongoing stakeholder engagement that can respond to changes in circumstance and additional data collection in the months and years to come. PRBP looks forward to strengthening the coalition of public servants and leaders throughout Puerto Rico that have already contributed their time and resources for supporting residents.

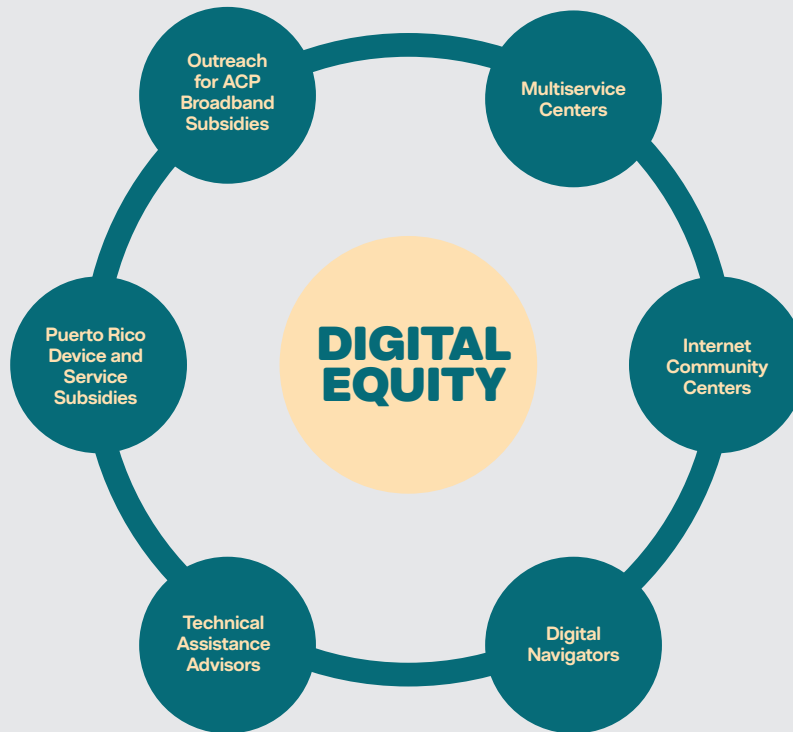# SECTION 5
Implementation Plan

Digital equity efforts are key for ensuring all residents have access to the resources and opportunities necessary to thrive in the digital world and fully participate in modern society. The PRBP is not limiting digital equity efforts to solely one program and instead is working to ensure all broadband programs prioritize digital equity regardless of their funding source.

This section outlines Puerto Rico's comprehensive strategy for closing the digital divide. The strategy includes major programs, corresponding activities, evaluation and sustainability measures, and an estimated timeline. As noted in Section 2 of this plan and in the Five-Year Action Plan, broadband deployment and adoption in Puerto Rico will be advanced through four key pillars: connectivity, quality, accessibility, and knowledge. The following strategies address goals for accessibility and knowledge, as well as the barriers to digital equity identified in Section 3.

5.1 Implementation Strategies and Key Activities

The PRBP's implementation strategies respond to the current state of broadband and the barriers to adoption. These strategies focus on affordability, access to devices, digital skills, technical support, and digital navigation. Figure 15 below showcases Puerto Rico's digital equity implementation strategies.

Figure 15: Digital Equity Implementation Strategies

Building upon this plan's data collection and analysis, the PRBP will work to implement digital equity interventions for residents in the places where it is needed most: in homes and community centers currently without high-speed internet and devices.

5.1.1 Multi-service and Internet Community Centers

Multipurpose Community Technology Centers will be developed in strategic locations throughout the island to ensure all residents, especially in unserved and underserved service areas, have access to new resources. There will be eight to ten Multipurpose Community Technology Centers. The Multipurpose Community Technology Centers will be larger than the Internet Community Centers and house numerous social services like healthcare access and include broadband internet and device access and support. The Internet Community Centers will serve as smaller satellite centers focused on the same digital equity services housed at the Multipurpose Community Technology Centers but established in more rural areas. The smaller centers will augment the influence and impact of the primary centers, allowing PRBP and its partners to broaden the reach of the resources provided and ensure that more communities benefit from these facilities.

The Centers will be staffed by trained digital navigators who will help individuals with device maintenance and repair support alongside job search, government services, and educational training materials. The Centers will support the special needs of some aging individuals and individuals with disabilities with resources such as adaptive devices.

5.1.2 Digital Navigators and Technical Assistance Advisors

Digital navigators will play a key role supporting residents. The PRBP will develop a Digital Navigator Grant Program that will staff internet centers and participating community organizations with trained individuals to serve as guides for residents who need help getting online. In collaboration with community organizations, libraries, schools, and other relevant groups, PRBP will additionally develop online digital literacy tutorials and training materials for digital navigators to utilize in the teaching process.

Digital navigators will be available to support residents using their own devices or accessing loaner equipment, connecting to the internet, navigating government services online, and finding new online resources for daily use. Technical assistance advisors will support navigators through best practices training and culturally relevant materials, ensuring all those who work with members of the community can help close the digital skills gap.

### 5.1.3 Device and Service Subsidies

More than half of Puerto Rican households don't have a desktop or laptop, and at least 72% of households qualify for the Affordable Connectivity Program (ACP), compared to 36% nationwide.[34]

To address the affordability needs of residents, the PRBP will drive enrollment in the federal Affordable Connectivity Program through the Affordable Connectivity Program Outreach Grant and promote the program whenever possible.

The Puerto Rico Broadband Program will develop a major device and service subsidy program available through the Government of Puerto Rico to supplement the ACP and further increase accessibility for residents who experience cost barriers to internet and devices. Figure 16 below illustrates how residents will access service and device subsidies. Eligible residents enrolled in the Affordable Connectivity Program will be able to access an additional subsidy available by the Government of Puerto Rico for a device and service support. Conversely, residents who access subsidies through the Government of Puerto Rico will be encouraged to enroll in the Affordable Connectivity Program in collaboration with Puerto Rican ISPs. PRBP will develop a subsidy program model that maximizes the benefit to Puerto Ricans.

Figure 16: Digital Equity Implementation Strategies
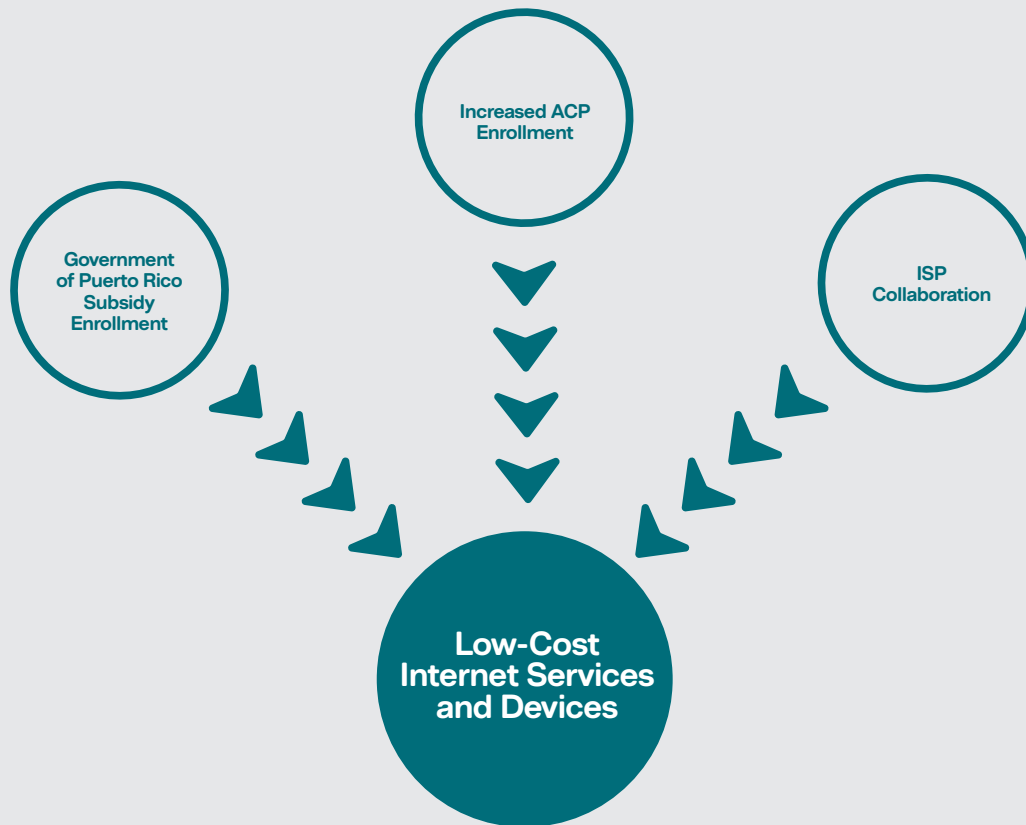
In addition to household subsidies, free Wi-Fi service will be available in designated hotspot locations throughout the island. Through the Public Wi-Fi Infrastructure Program launched this year, the PRBP is awarding grants for the deployment of free Wi-Fi and supporting infrastructure to key areas of municipalities. The award requires grantees to provide free public access to these zones for at least 10 years. Future programs will also include affordability commitments and support continued collaboration between the PRBP and service providers.

5.1.4 Additional Support Activities

The Puerto Rico Broadband Program will work with government agencies to support improved government websites and portals to ensure they are accessible and inclusive for all Puerto Ricans, especially those with disabilities. The PRBP will adhere to Web Content Accessibility Guidelines (WCAG), the internationally accepted technical standards that ensure accessibility of website features.[35]

Through partnerships with community organizations, the PRBP will also support the development of educational resources on online scams, phishing, and other cyber threats. The growing reliance on digital technologies will leave more residents vulnerable to digital threats. By promoting cybersecurity awareness, individuals can gain the knowledge and skills necessary to identify and mitigate these

[35] WCAG 2 Overview, Web Accessibility Initiative, https://www.w3.org/WAI/standards-guidelines/wcag/

risks, thereby protecting themselves and their digital assets. Cybersecurity awareness is essential for safeguarding critical infrastructure, government systems, and personal data from cyberattacks, contributing to the overall resilience of Puerto Rico's digital ecosystem.

This comprehensive implementation strategy supports digital equity for all residents, especially those often left on the wrong side of the digital divide, including aging individuals, individuals with disabilities, low-income households, and residents in rural areas. Table 5 below connects Puerto Rico's digital equity goals outlined in Section 2 with corresponding key activities to be conducted by the PRBP during implementation. Measurable goals and objectives in Section 2 offer more information on Puerto Rico's path for digital equity.

Table 5: Digital Equity Goals and Key Activities

Digital Equity Goal	*Key Strategies and Support Activities*
Accessible, affordable broadband subscriptions	· Launch broadband device and service subsidy program · Launch Affordable Connectivity Program Outreach initiative · Continue implementation of the Public Wi-Fi Infrastructure Program · Develop Multipurpose Community Technology Centers and Internet Community Centers throughout the island for affordable access · Integrate service affordability measures into infrastructure planning · Share adoption data across ISPs
Accessible, affordable Internet-enabled devices	· Launch broadband device and service subsidy program · Provide devices at Multipurpose and Internet Community Centers
Inclusive and accessible online public resources	· Partner with government agencies to ensure compliance with Web Content Accessibility Guidance (WCAG) and promote user experience · Partner with community organizations to provide training and support for residents in using online government services · Connect Technical Assistance Advisors with government agencies to promote online public resource best practices
Digital literacy and digital skills for all residents	· Develop Digital Navigator Grant Program · Utilize Technical Assistance Advisors to advise on digital skills training · Develop training materials in collaboration with community organizations, libraries, schools, and other relevant groups · Develop workforce training program in collaboration with Puerto Rican employers
Online security and privacy awareness	· Create educational resources about online scams, phishing, and other threats with help of the Puerto Rico Innovation & Technology Service (PRITS)

5.2 Evaluation and Sustainability Measures

Throughout plan development, the Puerto Rico Broadband Program established and expanded relationships with community stakeholders. The PRBP will continue to work with nonprofits, educational institutions, and industry partners to support existing resources and ensure inclusive access for all residents. These collaborations build momentum for digital equity, and the PRBP will continue to nurture these relationships to further promote grassroots efforts to support Puerto Ricans.

The PRBP will continue data collection and evaluation measures during the implementation of digital equity programming. Further survey distribution and additional outreach to community leaders will help refine the details for multiservice and internet centers, digital navigator programs, and device and service subsidies so they appropriately meet the needs of residents. Future grant programs administered by the PRBP will accommodate the objectives and KPIs described in Section 2 and include evaluation requirements for any grantees.

As described in Section 4, the PRBP's Digital Equity Advisory Subcommittee of community leaders will play a pivotal role in ongoing review and updates to this Plan. The Digital Equity Advisory Subcommittee will meet on a biweekly basis following plan submission to evaluate progress of these implementation strategies, advise on future funding applications, and make changes and updates as needed.

5.3 *Estimated Timeline for Implementation*

Timeline	*Activities*
2023-2024	· Continue to promote and enroll households in the Affordable Connectivity Program · Continue inventory of existing digital literacy programs & explore options for new programs · Begin planning and developing Multipurpose and Internet Community Centers in coordination with existing locations · Determine partners for cybersecurity, online safety and privacy campaign · Explore options and identify partners for technical support · Develop program model for broadband device and service subsidy · Identify assistive technology opportunities and funding sources · Apply for the Digital Equity Capacity Grant · Conduct further assessments to determine baseline for KPIs · Continue stakeholder outreach throughout implementation to ensure planning responds to community needs
2025 – 2026 Years 1 & 2 of Digital Equity Implementation	· Continue to coordinate digital equity efforts with infrastructure planning throughout every stage of the implementation process · Identify Technical Assistance Advisors to collect and advise on best practices for digital skills training and online public resources · Plan Digital Navigator Program by coordinating with existing programs · Plan cybersecurity and online safety campaign · Finalize broadband and device subsidy program planning · Begin development of Multipurpose and Internet Community Center programming in partnership with government agencies and community organizations · Establish initial Multipurpose Multi-service and Internet Community Center locations · Support Puerto Rican organizations with their applications to Digital Equity Competitive Grants · Identify additional funding opportunities and develop policy initiatives to sustain affordable access · Advocate for policy initiatives to advance broadband affordability and sustain ongoing digital equity programs · Identify sources for adaptive device accessories to meet the needs of covered populations · Launch cybersecurity and online safety campaign · Coordinate with government agencies to execute inclusive and accessible online public resources · Develop and refine programming of Multipurpose and Internet Community Centers · Launch additional Multipurpose and Internet Community Centers · Assess success of Year 1 and progress toward KPIs
2027 – Year 3	· Expand Multipurpose and Internet Community Center programming · Improve and refine new programs · Assess success of Year 2 and progress toward KPIs
2028 – Year 4	· Continue execution of Multipurpose and Internet Community Centers and supported programming · Improve and refine new programs · Assess success of Year 3 and progress toward KPIs
2029 – Year 5	· Monitor and support continued execution of Multipurpose and Internet Community Centers and their programming · Incorporate actions from policy initiatives to advance broadband affordability and determine path forward for digital equity in Puerto Rico · Assess success of Year 4 and progress toward KPIs
2023	· Assess success of Year 5 and progress toward KPIs · Host survey and community conversations on outcomes and impact of digital equity implementation

SECTION 6
Conclusion

Puerto Ricans have long grappled with a formidable digital divide. Yet, despite it all, the strong ties between residents and the resiliency of Puerto Rico's communities in the face of adversity stand as true assets, holding the promise of positive change. Full participation in the twenty-first century economy will require Puerto Ricans to adapt and support each other as they take strides to realize the internet's full potential.

Access to the internet plays a critical and growing role in the ways in which Puerto Ricans work, learn, receive health care, and participate in civic life. As the Digital Equity Notice of Funding Opportunity states:

> The COVID-19 pandemic crystalized what many have known for a very long time: High-speed internet access is not a luxury, but a necessity, for all Americans, regardless of their age, race, or income, irrespective of where they live, what languages they speak, what resources they have at their disposal, and what specific challenges they may face in their daily lives.[36]

On its own, Internet connectivity is a necessary—but not sufficient—condition for closing the digital divide. Puerto Ricans not only need broadband service, but they need it at affordable prices, and they need the knowledge of available technology and digital tools to access the internet safely and effectively.

While limited nongovernmental digital equity programs and persistent poverty make addressing Puerto Rico's digital equity needs difficult, the $1.2 billion infusion into the Island's broadband ecosystem means the moment is ripe to make meaningful change. Puerto Rico's planning processes and strong leadership are laying the groundwork for smart investments in broadband infrastructure and digital equity. These well-

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[36] Digital Equity Act Notice of Funding Opportunity, NTIA, accessed at: https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/DE%20PLANNING%20GRANT%20NOFO.pdf

planned investments will have ripple effects throughout the Island. As the digital divide closes, existing efforts to grow the economy and help Puerto Ricans realize their fullest potential with be bolstered.

The Puerto Rico Broadband Program is striving to close the digital divide by achieving the following five goals:

1. Broadband will be accessible at affordable prices.
2. Internet-enabled devices will be accessible and affordable for all.
3. Online public resources will be inclusive and accessible to all Puerto Ricans, regardless of ability.
4. Puerto Rico will support digital literacy and digital skills for all residents.
5. All Puerto Ricans will be aware of the importance of online security and privacy.

Throughout the Digital Equity Plan and Broadband Five-Year Action Plan development, PRBP and its partners have worked together to deepen an understanding of broadband needs and elevate the voices of Puerto Ricans on the wrong side of the digital divide. These inputs helped to shape the PRBP's goals and strategies.

PRBP's listening sessions and outreach efforts were designed to meet both Digital Equity and Broadband Equity, Access and Deployment (BEAD) programs' shared objectives. As part of that coordination, the Puerto Rico Broadband Program created an overlap in personnel between State Digital Equity planning teams and BEAD Program planning teams. These efforts reduced the burden and confusion on community stakeholders while fulfilling the local coordination, outreach, and stakeholder engagement requirements of both programs.

By weaving together federal funding streams, Puerto Rico is building resilient, community-driven initiatives; integrating government agencies, partners, and stakeholders; and will soon begin delivering tailored digital equity services to all Puerto Rican residents.

This once-in-a-lifetime opportunity will allow all Puerto Ricans the opportunity for civic and cultural participation, employment, lifelong learning, and access to essential services.

APPENDICES

Appendix A: Puerto Rico Internet-enabled Devices as compared with United States

Label	Puerto Rico		United States		
	Estimate	%	Estimate	%	Difference in %
Total	**1,196,790**		**124,010,992**		
Has one or more types of computing devices	908,230	75.89	115,397,459	93.05	-17.17
Desktop or laptop	540,383	45.15	97,830,488	78.89	-33.74
Desktop or laptop with no other type of computing device	38,693	3.23	4,705,149	3.79	-0.56
Smartphone	843,736	70.50	107,227,652	86.47	-15.97
Smartphone with no other type of computing device	285,750	23.88	10,793,298	8.70	15.17
Tablet or other portable wireless computer	383,235	32.02	78,367,808	63.19	31.17
Tablet or other portable wireless computer with no other type of computing device	12,760	1.07	1,085,378	0.88	-0.19
Other computer	23,572	1.97	3,237,976	2.61	0.64
Other computer with no other type of computing device	104	0.01	30,800	0.02	0.02
No Computer	288,560	24.11	8,613,533	6.95	17.17

B28001. American Community Survey. ACS 5-Year Estimates Detailed Tables