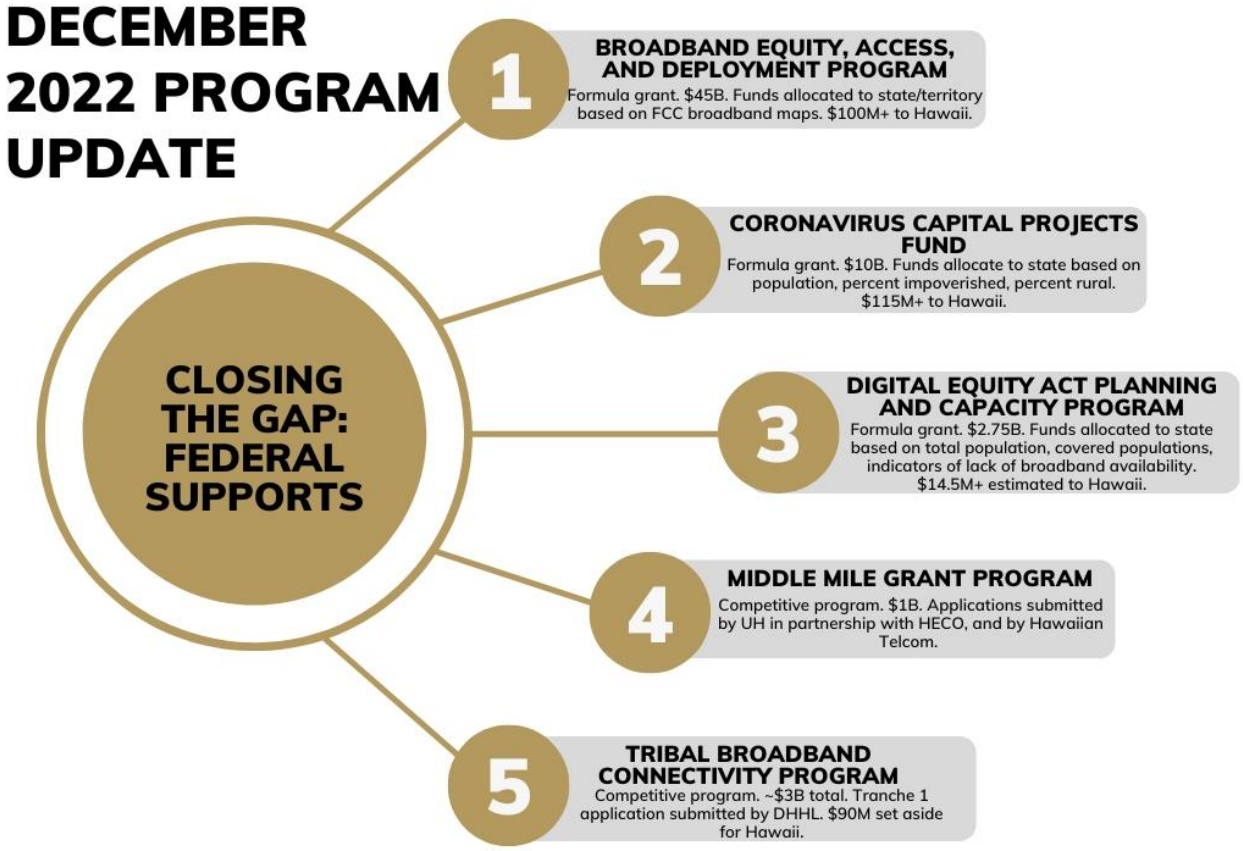
Hawai‘i Broadband Update

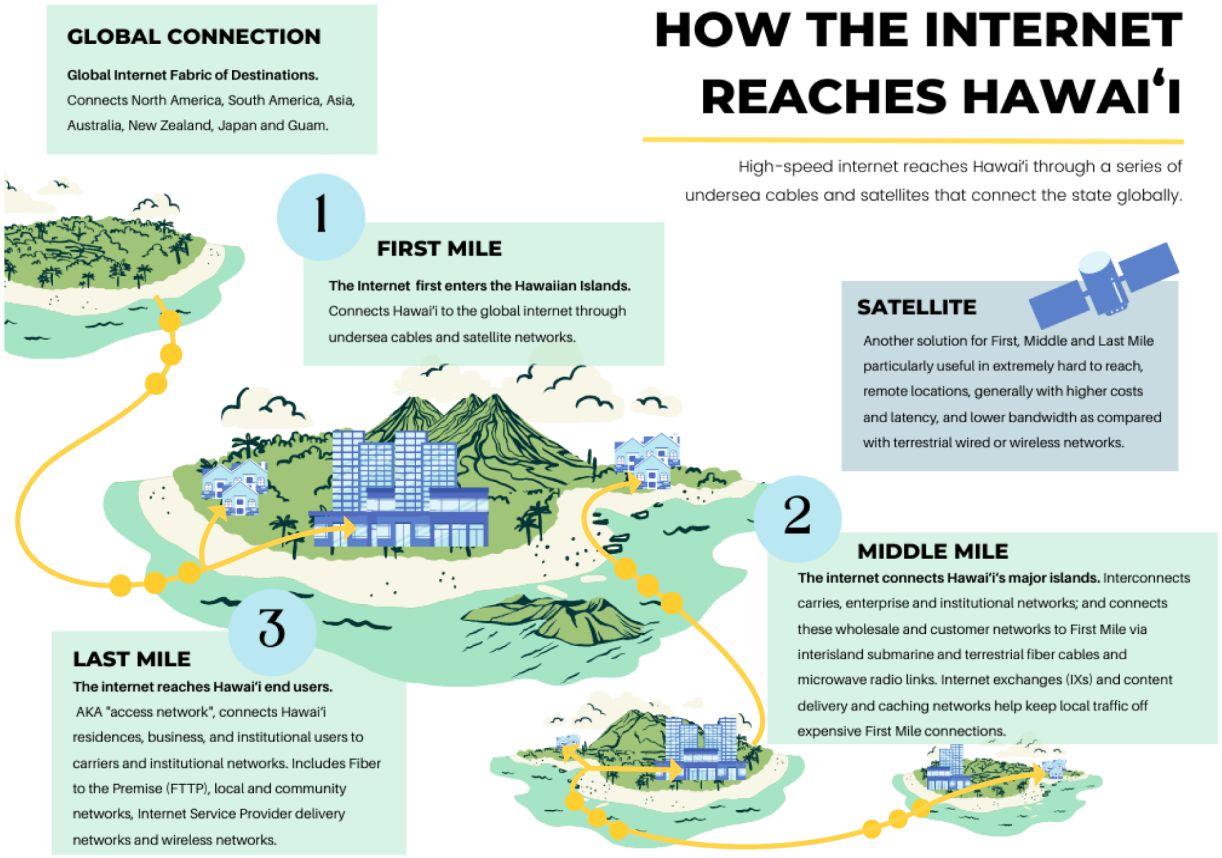
December 2022



Last month, the federal government celebrated one year of the Infrastructure Investment and Jobs Act (IIJA), which brought $64 billion of federal funding into the broadband landscape. Among the programs formally initiated under IIJA was the FCC Affordable Connectivity Program (ACP), which formally replaced the Emergency Broadband Benefit (EBB) to provide an internet subscription subsidy for low-income households. In addition, numerous major programs hosted out of the National Telecommunications and Information Administration (NTIA) were also created. Work is currently underway for a number of programs out of NTIA, with all states and territories submitting letters of intent (LOI) or applications to partake in the non-competitive funding that will be allocated to their state under the Broadband Equity, Access, and Deployment (BEAD) Program and the Digital Equity (DE) Planning Grant, and the competitive Middle Mile Grant Program, which received over 235 applications across the nation. In addition to IIJA, the American Rescue Plan Act of 2021 (ARPA) granted two large funding pools with opportunity for investment in broadband infrastructure: the Coronavirus State Fiscal Relief Funds (CSFRF) and the Coronavirus Capital Projects Funds (CPF). The deadline to request funding for Tribal governments was due in October 2022, while state and territory grant and

program plans were due in September. Over the past year, Hawai‘i has been proactive in submitting the necessary LOIs and applications to secure funding for the state and the Department of Hawaiian Home Lands.

Factoring in all the major funding programs that have been rolled out since 2021, the State of Hawai‘i is estimated to collectively have over $400 million available to address state issues with broadband adoption and access and digital equity. As of November 2022, Hawai‘i has remained on track to take on the tasks outlined in the strategic plan conceived last year, with a large push to confront first and middle mile infrastructure development to ensure that Hawai‘i is never left vulnerable to disconnection from the rest of the world.



Defining First, Middle, and Last Mile

Broadband connectivity is provisioned as a set of interconnected segments – **first mile, middle mile and last mile**. The **first mile** segment connects Hawai‘i to the global internet via submarine optical fiber cables that terminate in **cable landing stations** at various points throughout the islands. The **middle mile** segment provides connectivity between islands with both submarine and terrestrial optical fiber and connects these networks to major internet exchanges and service providers on all islands. It includes all broadband infrastructure (e.g. backhaul, cable landing stations, undersea cables, etc.) that do not connect directly to an end

user. The **last mile** segment provides connectivity to homes, libraries, schools and businesses and is the final stretch for broadband from an Internet Service Provider (ISP) to an end user.

For Hawai‘i, this first mile and middle mile segment does not resemble any other model in the continental United States. Connectivity deficiencies are not unique to any one of the major islands, and are at an increased risk with the existing, aged interisland fiber systems nearing the end of their service life (around 25 years) within the next decade. As a result, Hawai‘i’s strategy largely focuses on the importance of developing the state’s existing middle mile infrastructure and future middle mile infrastructure with today’s available funding in order to create a robust, future-proof broadband landscape that can support ongoing and future last-mile buildouts. This includes the addition of new carrier-neutral cable landing stations–the first in Hawai‘i–to enhance the competitive landscape and attract new transpacific submarine fiber build outs to the State, along with a new interisland fiber ring sufficient enough to support Hawai‘i through 2050.

Where We Stand Now

The *‘Apakau ka lā* initiative largely can be broken down into eight major layers of funding applications, each comprised of many smaller components to actualize infrastructure and digital equity advancement in the state. summarizes these eight layers, highlighting which of the pillars (see website) is being acted on with an added pillar of digital equity, the main objectives of each funding layer, and which funding pools are pivotal to the goals set forth for each layer, or benchmark.

Rung 1: Trans-pacific Landings and Inter-island Fiber Ring Design

In March 2022, the Research Corporation of the University of Hawai‘i issued a Request for Proposals on the behalf of UH, to initiate a desktop study to identify potential cable routes between all the major Hawai‘i an Islands. In May, the $1.5 million contract for the site survey and desktop design of a new inter-island fiber optic system ring was awarded to Ocean Networks, with the ultimate goal of building capacity, resilience AND reducing the capital expenditure cost hurdle that uniquely “taxes” Hawai‘i broadband infrastructure.

Additional public or private funds will be used as leverage to attract new trans-Pacific landings – building on the foundational effort of the new inter-island system construction. Inter-island builds will eliminate the single largest uncertainty (i.e. risk) to ANY new trans-Pacific system intending to land in Hawai‘i .

Rung 2: New Northern Subsea Fiber Path

As part of the state’s CPF submission in September 2022, Hawai‘i submitted a program plan proposing the construction of a new northern inter-island fiber path. The proposal also encompassed the required ancillary investments to build state facilities to support the network meet-me locations, and required connectivity for carrier middle mile networks (e.g. landing stations).

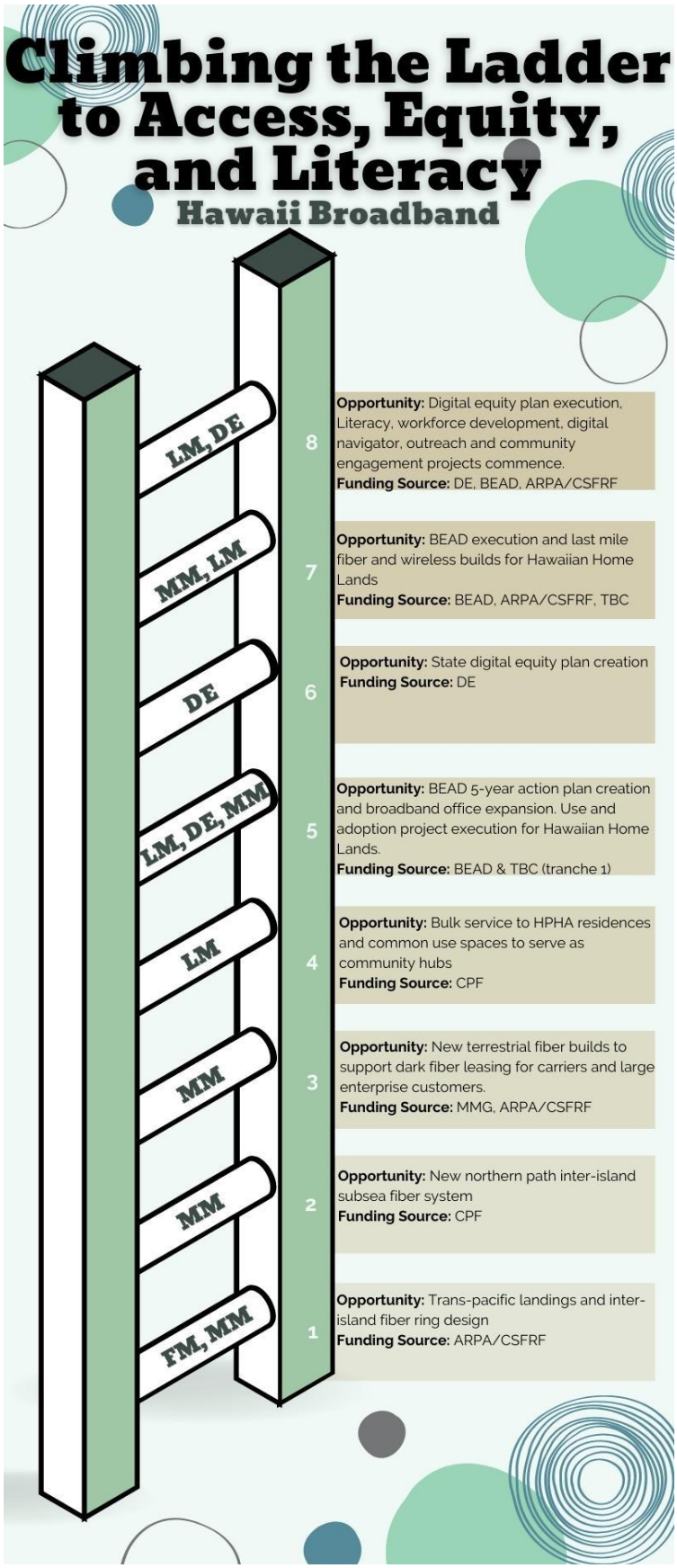
Rung 3: Terrestrial Fiber Builds

In September 2022, the University of Hawai‘i , in partnership with Hawaiian Electric, submitted a $44 million proposal to the NTIA Middle Mile grant program. This application proposed support for new, high capacity terrestrial fiber routes to support dark fiber IRUs for carriers and large enterprise customers. An additional competitive grant was submitted by Hawaiian Telcom to support non-duplicative festoon and terrestrial routes to key areas.

Additionally, ARPA/CSFRF funds are planned for use in providing tail connections to integrate with key network interfaces and or handoffs, or to connect with other middle mile connections. In a limited number of cases, ARPA/CSFRF funds will build middle mile gaps as required.

Rung 4: Support for Public Housing Residents and Communities

A second program plan was submitted under CPF in September, proposing an investment to upgrade and deliver 100Mb symmetrical service to all residents in public housing (initial commitment may be 100Mb/20Mb pending carrier upstream system upgrades), and to provision Gb service for available common use shared rooms (initially in 41 facilities). The upgrades will be coordinated with mass subscription to ACP eligible programs resulting in “free” (subscriptionless ACP subsidy) internet service for all residents, plus Gb network



connections in any of the shared common use spaces. The common use spaces will closely align with the availability of community **digital navigators** (residents skilled in digital literacy who work in their communities to assist other residents with internet digital literacy skills adoption) funded by the statewide BEAD investments.

Rung 5: BEAD 5-Year Action Plan Creation

As of November, the state of Hawai‘i has officially begun work on the 5-Year Action Plan with the initial release of $5 million in planning funds from NTIA to aid in the development of this plan. Planning funds are planned for use over a five year period to support state broadband office capacity (4.5 FTE), plus community outreach and engagement efforts in support of the required five-year plan creation, and establishment of expenditure plans for the full BEAD funding allocation (upwards of $250 million). The 5-Year Action Plan, due Summer 2023, will feature plans to support a broad range of efforts, including last mile infrastructure, additional middle mile infrastructure, statewide digital equity and literacy, statewide workforce development (IT/Cyber), and a full spectrum of wrap-around services (together with the State Digital Equity Plan and Capacity Grants), with particular attention to unserved and underserved communities respectfully.

Running concurrently through the next few months is the execution of the TBC application submitted by DHHL in 2021. Around $16 million was awarded under tranche 1 funds for use-and-adoption projects, plus pre-construction infrastructure assessment and planning/design work (focused on fiber to the premise, plus overlay wireless infrastructure). Further updates are expected in the coming months.

Rung 6: State Digital Equity Plan Creation

In July 2022, Hawai‘i submitted its application to the State Digital Equity Planning Program for the $570,000 to assist in the planning process. DHHL also submitted an application in the program, and will receive additional funds.

After this planning process, more federal funding will be made available to assist in putting the plans into work.

Rung 7: BEAD Plan Execution and Tribal Connectivity

At present, Hawai‘i expects to begin execution of the plans outlined in the BEAD 5-Year Action Plan no sooner than Fall 2023 after the submission of the state’s Initial Proposal in late 2023. NTIA estimates that BEAD execution will be in full swing 2024, and Hawai‘i will have the opportunity to expend an estimated $250 to 300 million, plus associated matching funds (~$100m required), on high-speed internet access for all residents and digital equity and workforce programs.

In concurrence with BEAD, the second tranche of funding for the TBC program is expected to become available under the upcoming NOFO expected in 2023. An estimated $74 million will be allocated to DHHL in the second tranche (remainder of the $90m total allocation). DHHL is expected to put in an application for implementation projects to primarily fund last mile

fiber builds, plus some overlay wireless and middle mile infrastructure. Awards for tranche 2 will likely be rolled out late 2023 into 2024 concurrently with BEAD.

Rung 8: Digital Equity Plan Execution

Digital Equity Plan Execution is expected to begin in 2024 following the State Digital Equity Capacity Program application award date, with a five-year window for implementation. At present, Hawai‘i is expected to receive around $14 million under the Capacity program to fulfill programs included in its plan.

SHORTHAND KEY

ACP = Affordability Connectivity Program
ARPA/CSFRF = American Rescue Plan Act / Coronavirus State Fiscal Relief Funds
BEAD = Broadband Equity, Access, and Deployment Program
CPF = Capital Projects Fund
DE = Digital Equity Planning and Capacity Programs
MMG = Enabling Middle Mile Infrastructure Grant Program
TBC = Tribal Broadband Connectivity Program