Prepared For:
State of Hawai'i
Department of
Hawaiian Home Lands

DEPARTMENT OF
HAWAIIAN HOME LANDS

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DHHL Tribal Broadband Connectivity Program

ANNUAL REPORT

November 2022 – September 2025

DOCUMENT STRUCTURE AND PARTNERSHIP APPROACH

This annual report represents DHHL's strategic vision and community-centered approach to achieving digital sovereignty on Hawaiian Home Lands through the Tribal Broadband Connectivity Program. The report emphasizes Federal coordination, community consultation, cultural preservation, and sustainable economic development as foundational elements of the "Kākoʻo I Ka Lāhui" initiative.

DHHL's approach to this transformative infrastructure development recognizes that technical excellence must be paired with authentic community engagement and cultural competency. While this report focuses on strategic planning, Federal coordination, community outcomes, and ensuring the economic and cultural security of native Hawaiians, detailed technical implementation activities are documented separately by our primary technical implementation partner (Oceanit).

Technical implementation details, including engineering assessments, infrastructure surveys, crisis response operations, and specific project management activities, are provided in Appendix A. This technical report covers the period from January 2024 through Q3-2025 and focuses specifically on the partnership with Oceanit within DHHL's broader $89 million Federal investment.

Readers seeking comprehensive understanding of the initiative should review both this strategic overview, which provides the community-centered vision and Federal coordination framework, and the technical appendix, which shows the professional implementation approach that translates strategic vision into operational reality.

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1.0 EXECUTIVE SUMMARY

DHHL's Vision for Broadband Connectivity on Hawaiian Home Lands

The Department of Hawaiian Home Lands' (DHHL) broadband initiative, "Kakoʻo I Ka Lahui" (Supporting a Nation Through Connectivity), represents a transformative commitment to digital self- determination and economic sustainability for Native Hawaiians. This comprehensive program addresses not just infrastructure gaps, but the fundamental principle that broadband access is essential infrastructure—as critical as water, power, and roads—for the prosperity and cultural preservation of Hawaiian Home Lands communities.

The vision for digital sovereignty on Hawaiian Home Lands is rooted in empowering DHHL homestead communities with full agency over their digital future—ensuring that connectivity, technology, and digital resources serve as instruments of self-determination, cultural preservation, and economic advancement. Through this initiative, DHHL is committed to building robust digital infrastructure that bridges the connectivity gap.

Total Program Scope and Federal Investment

DHHL has secured unprecedented Federal investment totaling approximately $89 million through the National Telecommunications and Information Administration's (NTIA) Tribal Broadband Connectivity Program (TBCP) across two strategic grant awards:

- Notice of Funding Opportunity 1 (NOFO 1): $17.28 million focused on Use & Adoption Programs
- Notice of Funding Opportunity 2 (NOFO 2): $71.77 million dedicated to Infrastructure Development

This represents the largest single investment in Hawaiian Home Lands telecommunications infrastructure in history, with the potential to impact 53 Hawaiian homesteads across 5 islands (Hawaiʻi, Maui, Molokaʻi, Oʻahu, Kauaʻi).

Infrastructure and Program Scope

NOFO 2 Infrastructure Investment (infrastructure planning and assessment provided in Appendix A; detailed engineering specifications will be developed during design phase and included in construction documents):

- 713 homes via fiber infrastructure
- 118 remote homes via Low Earth Orbit (LEO) satellite
- 831 total households connected
- Major developments: East Kapolei (450 homes), Hanapepe (82 homes), Lealii (155 homes) with others potentially eligible
- 4 Community Digital Innovation Centers
- Broadband infrastructure for the Native Hawaiian Health Clinic ("KOKO Kipuka O Ke Ola")
- 25 existing wireless towers professionally managed

NOFO 1 Use & Adoption Programs:

- 2575 MacBook devices and 145 interactive whiteboards for 11 charter schools and 4 Native Hawaiian organizations
- 1,000 telehealth patient kits supporting maternal health and Native Hawaiian health services
- Solar charging stations at 6 library locations and 1 DHHL District Office
- Comprehensive digital mapping and assessment

Combined Beneficiary Impact

The comprehensive program serves 12,660 individuals through digital literacy training and workforce development programs while addressing 100% of currently unserved beneficiary households. The initiative eliminates service gaps for 301 unserved households, 58 businesses, and 4 community anchor institutions.

1.1 Financial Investment Dashboard

Total Federal Investment: $89,049,762.85

- NOFO 1 (Use & Adoption): $17,284,762.85
- NOFO 2 (Infrastructure): $71,765,000.00

Key Investment Allocations:

- Infrastructure Development: $66.9 million
- Educational Technology: $4.5 million
- Telehealth Programs: $6.73 million
  - Maternal Telehealth (HMTAP): $2.8 million
  - Native Hawaiian Telehealth (RPM): $3.93 million

- Technical Implementation Partnership: $3.38 million
- Community Digital Centers: $2.8 million
- Solar Charging Infrastructure: $0.5 million

Note: Key investment allocations shown above represent major program components.

Additional allocations include administration, community network development ($315,530), and other program management costs to reach the total Federal investment of $89,049,762.85.

Leveraged State Investment: $600 million in general funds (Act 279, SLH 2022) for comprehensive DHHL development, creating synergistic infrastructure coordination.

Sustainable Revenue Streams: $15,000+ monthly from existing tower management operations, with expansion planned through ISP licensing agreements and telecommunications asset optimization.

Strategic Achievements to Date (2022-2024)

Organizational Development:

- Established dedicated broadband team within DHHL
- Developed comprehensive Federal coordination protocols spanning Federal Communications Commission (FCC), Rural Utilities Service (RUS), National Telecommunications and Information Administration (NTIA), and State agencies
- Successfully navigated complex Federal grant management across two major TBCP awards

Crisis Response and Emergency Management:

- Coordinated emergency response during May 2024 Sandwich Isles Communications (SIC) service termination affecting 1,500 households statewide (detailed crisis response in Section 3.3 and Appendix A)
- Distributed emergency Wi-Fi hotspots within 5 days to remote communities
- Enabled household transitions to alternative providers through proactive outreach

Community Engagement:

- Conducted island-by-island "Talk Story" consultation March-August 2024 with 120+ participants across 26 homesteads
- Validated infrastructure priorities through direct beneficiary feedback
- Documented complex infrastructure challenges in remote communities

Technical Assessment:

- Confirmed SIC infrastructure was of limited value for future deployment (detailed assessment in Appendix A)
- Conducted systematic connectivity gap analysis across all Hawaiian Home Lands

Achieved measurable telehealth impact through Q3 2025:

- Hawai'i Maternal Telehealth Access Program (HMTAP): Nearly 2,900 total encounters including 491 tele-ultrasound encounters, 62 tele-genetic counseling patients (26% Native Hawaiian), 755 enrolled in blood pressure monitoring (140 neighbor-island participants)
- Native Hawaiian Remote Patient Monitoring (RPM): 43 enrolled patients (33% residing on DHHL lands), 340 total individuals reached through outreach, adherence rates significantly exceeding 70% goal and national averages, 95% patient satisfaction

Partnership Development:

- Established formal partnership with Oceanit Laboratories (partnership scope in Appendix A)
- Developed coordination framework with University of Hawai'i BEAD program
- Built strategic relationships with wireless carriers and Federal agencies

Current Implementation Status (2025)

Environmental and Regulatory Progress:

- Secured NEPA clearance for Hanapepe project
- Additional projects under environmental review with expected Q2 2026 completion
- Maintaining Federal compliance across telecommunications regulatory frameworks

Infrastructure Deployment Preparation:

- Developing construction timeline for Q2 2026
- Digital Innovation Center planning complete for all 4 locations
- Universal Fiber Infrastructure Licensing Agreement framework under development

Federal Program Implementation:

- Managing NOFO 1 across educational device distribution, telehealth programming, and community infrastructure
- Finalizing MOAs with 11 charter schools and 4 Native Hawaiian organizations as individual institutions complete their signing processes
- Completing solar charging station installations across 7 locations

Ongoing Operations:

- NOFO 1 program extensions through December 2026
- Quarterly performance monitoring and Federal reporting
- Cross-divisional integration with all DHHL community development activities

Long-term Vision and Sustainability Framework (Post-2028)

The initiative establishes foundation for complete digital self-sufficiency through:

Long-Term Sustainability and Infrastructure Management:

DHHL is developing long-term infrastructure management strategies that will ensure sustainable operations, continued service quality, and beneficiary affordability beyond the Federal grant period.

The Department is engaged in discussions with potential service providers and industry partners regarding infrastructure ownership models, service delivery arrangements, and revenue mechanisms that support ongoing operations and maintenance.

DHHL's approach prioritizes:

Specific arrangements will be finalized through stakeholder negotiations, regulatory review, and formal agreements executed following completion of infrastructure deployment. Additional details regarding long-term management frameworks will be provided as agreements are reached.

Economic Development and Workforce Programming:

Digital Innovation Centers are the catalyst of connected communities, DHHL is planning to leverage this and provide comprehensive workforce development for 12,660 individuals, including digital literacy training, remote work preparation, cybersecurity certification, and digital entrepreneurship support with culturally integrated programming.

Sustainable Revenue Generation:

Tower management operations ($15,000+ monthly) and ISP licensing agreements creating long-term financial sustainability for infrastructure maintenance and operations.

Cultural Preservation Integration:

Technology programming supporting Native Hawaiian language preservation, traditional ecological knowledge documentation, cultural enterprise development, and digital storytelling platforms.

Conclusion:

DHHL's "Kākoʻo I Ka Lāhui" initiative represents more than infrastructure deployment—it establishes a transformative framework where Federal investment, authentic community consultation, and cultural preservation converge to create genuine digital sovereignty for beneficiary communities. By securing $89 million in Federal funding, coordinating with $600 million in state housing development, and developing innovative ISP licensing frameworks that prioritize beneficiary affordability and universal access, DHHL has created a foundation for economic and cultural security for its beneficiaries.

The initiative's success stems from recognizing that digital connectivity is not merely technical infrastructure but foundational to self-determination, economic opportunity, educational advancement, healthcare access, and cultural preservation. Through comprehensive community consultation with 120+ beneficiaries across 26 homesteads, systematic Federal coordination across multiple agencies, and partnership with technical experts, DHHL has demonstrated that indigenous communities can lead sophisticated infrastructure initiatives while maintaining cultural integrity and community control.

Through this initiative, DHHL will provide new or improved broadband connectivity to 831 households through fiber (713 homes) and LEO satellite (118 homes) infrastructure deployment, while having successfully coordinated emergency response that enabled approximately 1,500 households previously served by SIC to transition to alternative providers following the May 2024 service termination.

The comprehensive approach established here ensures economic opportunities through workforce development, educational advancement through technology access, healthcare security through telehealth programs, and cultural preservation through digitally-enabled traditional knowledge documentation.

2.0 PROGRAM GENESIS & STRATEGY

2.1 Why DHHL Pursued TBCP Funding

COVID-19 Pandemic as Primary Catalyst for Federal Investment

The global COVID-19 pandemic beginning in 2020 starkly revealed critical telecommunications infrastructure inadequacies across Hawaiian Home Lands, transforming digital connectivity from a convenience into an essential lifeline for community survival and prosperity. The sudden shift to remote work, distance learning, and telehealth services exposed fundamental bandwidth limitations, service reliability issues, and affordability barriers that prevented Native Hawaiian families from accessing essential services during the health emergency.

Educational continuity for Native Hawaiian students became impossible without access to high-speed internet, while telehealth services essential for vulnerable community members remained inaccessible due to inadequate telecommunications infrastructure. The pandemic demonstrated that digital connectivity represented essential infrastructure—as fundamental as water, power, and roads—for modern community resilience and economic survival.

Federal Program Development and Native Hawaiian Eligibility Recognition

The Consolidated Appropriations Act of December 2020 created unprecedented Federal investment opportunities through the Tribal Broadband Connectivity Program under the National Telecommunications and Information Administration (NTIA), with specific recognition of DHHL's eligibility under Section 905(a)(8). This Federal recognition of DHHL's unique status and telecommunications needs provided the first comprehensive pathway for addressing systematic connectivity challenges through sustained Federal partnership rather than emergency-only responses. The TBCP operates through multiple Notice of Funding Opportunities (NOFO) rounds, enabling federally recognized tribes and the Department of Hawaiian Home Lands to pursue both immediate use and adoption programming and long-term infrastructure development.

Strategic Integration with State Hawaiian Homesteading Investment

DHHL's broadband infrastructure initiative operates within the context of unprecedented state commitment to DHHL homesteading, as demonstrated by Act 279 (SLH 2022), which provided $600 million in general funds to reduce the DHHL waitlist.

The strategic integration of Federal broadband investment with state housing development ensures that digital connectivity becomes foundational infrastructure supporting comprehensive community development rather than standalone telecommunications projects. Lieutenant Governor Sylvia Luke's direct advocacy to (then) NTIA Administrator Alan Davidson on behalf of DHHL's NOFO 2 application shows the highest levels of state government support for the Department's broadband initiative.

Evidence-Based Infrastructure Need Assessment

DHHL's commitment to evidence-based broadband development includes comprehensive analysis of connectivity gaps across Hawaiian Home Lands using Federal mapping data and proactive advocacy to ensure accurate representation of community needs. Analysis of 10,048 total households across Hawaiian Home Lands revealed 301 unserved households lacking access to qualifying broadband service (originally defined as 25 Mbps download/3 Mbps upload with sufficient latency for real-time interactive applications). Additionally, 58 businesses and 4 community anchor institutions lack adequate connectivity, creating economic development barriers and limiting access to essential services.

Digital Sovereignty Vision and Self-Determination Goals

Through comprehensive assessment of telecommunications challenges, Federal program opportunities, and community development needs, DHHL recognized that digital sovereignty—the ability of Native Hawaiian communities to control their digital infrastructure and determine their technological future—required comprehensive Federal investment in both physical infrastructure and community capacity building. The TBCP represented an unprecedented opportunity to transform the telecommunications landscape on Hawaiian Home Lands in further of a self-sufficient DHHL homestead communities.

SIC Crisis as Validation of Strategic Federal Investment Approach

The telecommunications crisis that unfolded in May 2024—occurring after DHHL had secured NOFO 1 funding (September 2022) and during NOFO 2 application development— validated the Department's strategic assessment of infrastructure vulnerabilities and Federal investment necessity. The exclusive provider relationship with Sandwich Isles Communications since 1995 had created limited competitive alternatives and constrained infrastructure investment, leaving communities dependent on aging telecommunications systems with minimal redundancy. When SIC announced service termination with minimal notice, affecting 1,500 households statewide, the crisis demonstrated both the strategic foresight demonstrated by DHHL's Federal investment strategy and the Department's effective

emergency response capabilities (detailed emergency response coordination documented in Section 3.3 and Appendix A).

2.2 How " Kākoʻo I Ka Lāhui " Was Developed

Project Vision and Community-Centered Commitment

The "Kākoʻo I Ka Lāhui" (Supporting a Nation Through Connectivity) project embodies DHHL's commitment to the welfare and prosperity of the homestead beneficiary community through comprehensive community consultation that prioritizes authentic beneficiary voice in infrastructure development planning. The project vision statement articulates this commitment: "By harnessing the transformative power of enhanced broadband infrastructure, we anticipate substantial economic development, educational enrichment, improved telehealth services, and strengthened community bonds."

This vision emerged through systematic community engagement that gathered input from 66 beneficiaries across 26 different Hawaiian homesteads, providing comprehensive baseline assessment of telecommunications needs and service gaps across the entire Hawaiian Home Lands footprint.

Comprehensive Community Needs Assessment Process

DHHL implemented structured 3-4 hour community meetings format across all major Hawaiian islands, with 15-minute presentations followed by extended conversation periods that emphasized listening to build genuine relationships with lessees across homesteads. This consultation approach operated through systematic island-by-island engagement spanning March through August 2024, with sustained multi-day consultation periods that ensured comprehensive geographic representation.

Community Consultation Timeline and Geographic Coverage:

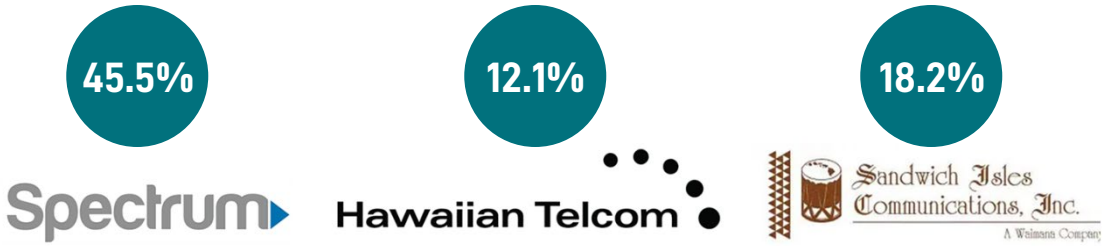
- **Kauai:** Multiple sessions March through August 2024
- **Molokai:** Multiple sessions March through August 2024
- **Hawaii Island:** Extensive consultation April through August 2024
- **Maui:** Multiple sessions May through August 2024

Community-Identified Telecommunications Challenges and Service Gaps

The beneficiary satisfaction survey revealed critical service inadequacies that validated DHHL's strategic approach to comprehensive infrastructure investment. Community feedback identified speed issues as the primary concern, with 15 mentions of inadequate bandwidth, while cost concerns generated 9 mentions reflecting affordability barriers that limit household connectivity access.

Provider Market Analysis from Community Feedback:

- Spectrum: 45.5% market share among surveyed beneficiaries; while technically adequate in coverage areas, cost concerns limit accessibility for low-income households
- Hawaiian Telcom: 12.1% secondary provider with mixed community satisfaction
- SIC/Sandwich: 18.2% combined representing failed provider infrastructure
- Service fragmentation: 14 different providers mentioned across homesteads, indicating lack of comprehensive coverage and service standardization



Direct Community Voice Validation of Infrastructure Needs

While DHHL's comprehensive community consultation process engaged 120+ participants across 26 homesteads through "talk story" sessions from March-August 2024, we acknowledge this represents a small fraction of the 10,048 total households across Hawaiian Home Lands. The beneficiary satisfaction survey captured detailed feedback from 66 respondents, providing valuable qualitative insights into service challenges and infrastructure priorities. Beneficiary responses provided compelling evidence of service inadequacy through direct quotes that demonstrate the urgency of comprehensive infrastructure investment. Community members described current service as "slow, spotty, and drops often," "very sketchy, not working well," and noted complete service gaps with "no Internet in the area" for some homesteads.

The geographic distribution of survey responses reflected the comprehensive consultation approach, with Ho'olehua (Molokai) providing 30.3% of responses and Keaukaha (Hawaii Island) contributing 16.7%, ensuring that both remote and more populated homesteads contributed to infrastructure planning priorities. DHHL recognizes the need for continued community engagement as infrastructure deployment proceeds and is committed to expanding outreach efforts to ensure broader beneficiary participation in program development and service delivery decisions.

3.0 NOFO 1 JOURNEY

3.1 Application Process and Strategic Focus

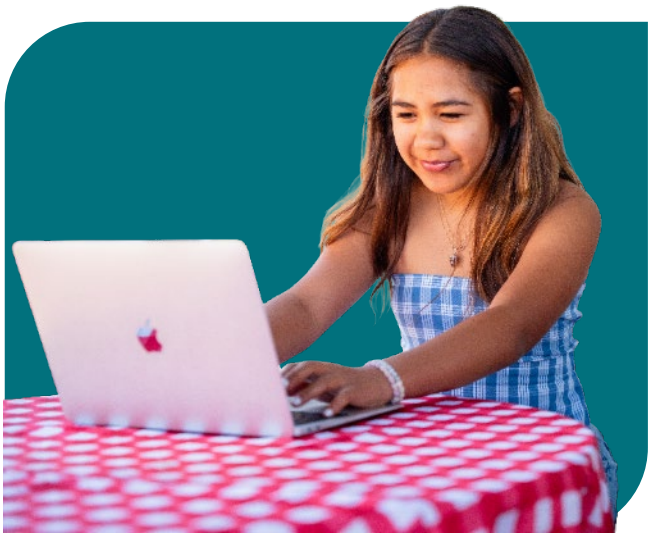
The Consolidated Appropriations Act of December 2020 created unprecedented Federal investment opportunities through the Tribal Broadband Connectivity Program under the National Telecommunications and Information Administration (NTIA), with specific recognition of DHHL's eligibility under Section 905(a)(8). In late 2022, DHHL was awarded TBCP NOFO 1 and secured $17,284,762.85 in Federal funding. NOFO 1 was structured around four interconnected community-centered projects that established the Department's capacity for comprehensive broadband program management. NOFO 1 was also allowed for a feasibility and assessments study. This meant that DHHL would need to navigate the complex Federal requirements and maintain alignment with Hawaiian Homes Commission Act statutory authority.

3.2 Award Implementation and Community-Centered Projects

Charter Schools Digital Equity Initiative ($4,527,650)

DHHL's largest NOFO 1 investment targeted 11 charter schools and 4 Native Hawaiian nonprofit organizations serving high concentrations of DHHL lessee beneficiaries, addressing critical device availability gaps that limited educational opportunities for Native Hawaiian students. The project provided 2575 MacBook devices to ensure 1:1 device availability, recognizing that modern educational success requires technology access coupled with infrastructure necessities.

The initiative included 145 interactive whiteboards to enhance classroom technology capabilities while supporting two full-time contractor positions focused on grant coordination, data analysis on digital inclusion metrics, and inventory management for device distribution. DHHL established coordination partnerships with the University of Hawaii Broadband office through Memoranda of Agreement (MOAs) that facilitated efficient project implementation while building state-level relationships essential for broader digital inclusion coordination.



Statistical Evaluation Framework

DHHL is developing program evaluation approaches to track the impact of technology investments on educational outcomes in partnership with participating charter schools and Native Hawaiian

organizations. The Department will work with schools to measure improvements in academic performance metrics, attendance rates, and technology adoption as data becomes available through the implementation period. This evaluation framework will enable DHHL to demonstrate concrete return on Federal investment through measurable improvements for Native Hawaiian students.

Solar Charging Station Community Infrastructure Initiative ($580,000)

DHHL's solar charging station initiative addresses critical community infrastructure needs by establishing comprehensive charging and connectivity access points across seven strategic library locations throughout Hawai‘i. These solar-powered stations provide multiple device charging ports and emergency communication capabilities, creating community technology hubs that operate 24/7 for device charging regardless of grid power availability.

Strategic placement at Molokai Public Library, the Molokai DHHL District Office, Kapolei Public Library, Nānākuli Public Library, Waimanalo Public Library, Hanapepe Public Library, and Na'alehu Public Library ensures geographic accessibility across islands while creating sustainable technology access points for device charging that operate independently of traditional electrical infrastructure. WiFi access is available during library operating hours. The stations particularly benefit homestead communities in remote areas where power outages are common and commercial charging options are limited.

Broadband data mapping firm subscription – ($312,000)

This flat rate cost is for the speed test data, creation of coverage maps, and the tracking of data usage across the State of Hawaii. This subscription helps the Department of Hawaiian Home Lands and our State partners better understand and identify coverage gaps.

DHHL Broadband Mapping Project

The DHHL Broadband Mapping Project is a statewide partnership with Ookla, a global leader in internet performance measurement and the creator of the widely used Speedtest® platform. Ookla's analytics are used across the nation—including by the FCC—to monitor broadband connectivity, network performance, and coverage trends.

Through this partnership, DHHL, along with State and County partners, now has access to high-resolution, crowd-sourced speed test data across Hawai‘i. While the data is collected voluntarily from residents using the Speedtest® application, it provides a powerful, real-time snapshot of actual user experiences and network conditions.

This dataset includes performance metrics across wireless carriers, low-earth-orbit (LEO) satellite providers, and terrestrial wireline networks such as Hawaiian Telcom and Spectrum. By analyzing these trends, DHHL is able to distinguish whether service gaps stem from infrastructure limitations or digital

adoption challenges—a critical distinction for directing investment, designing programs, and addressing beneficiary needs.

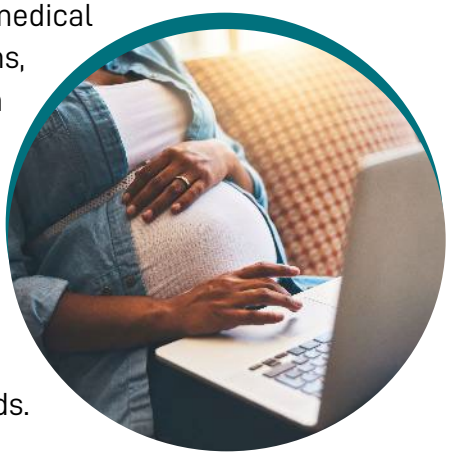
The insights generated through the Ookla partnership strengthen DHHL's ability to validate provider claims, support federal reporting requirements, prioritize broadband projects, and ensure that homestead communities statewide receive the connectivity needed for education, health, economic opportunity, and community well-being.

Comprehensive Telehealth Access and Adoption Programs

DHHL's telehealth initiatives address healthcare access barriers through two comprehensive NOFO 1 contracts totaling $6.73 million: the Hawai‘i Maternal Telehealth Access Program ($2,803,065.45) and the Native Hawaiian Remote Patient Monitoring program ($3,931,124.28).

The NTIA/DHHL **Hawai'i Maternal Telehealth Access Program (HMTAP)** officially launched in late 2023, building upon an $800,000 Federal Communications Commission (FCC) COVID- 19 Round 2 award that established the technological foundation by equipping six sites across five islands with ultrasound machines, fetal monitors, and telehealth equipment.

The maternal telehealth program, developed in partnership with John A. Burns School of Medicine (JABSOM), University Health Partners (UHP), and Kapi'olani Medical Center for Women & Children (KMCWC), established comprehensive clinical capacity including medical directors, clinical managers, patient navigators, ultrasound technicians, perinatal nurse practitioners, and a Telehealth Navigator hired in September 2025 to strengthen patient engagement and workflow coordination.



The maternal health program provided 1,000 patient health kits including medical devices such as scales, tablets, blood pressure monitors, and pulse oximeters, enabling remote monitoring and consultation for expectant mothers across Hawaiian Home Lands. Through Q3 2025, the program has achieved significant impact:

Patient Services and Encounters:

- Nearly 2,900 total encounters supported across tele-ultrasound, tele-genetic counseling, and NICU home weight monitoring
- Tele-ultrasound: 491 encounters in Q4 2025. In July 2025, Maui's HL-7 integration went live—this industry-standard data protocol allows ultrasound images captured at neighbor island clinics to transmit automatically to maternal-fetal medicine specialists on O'ahu, eliminating manual uploads and reducing diagnostic delays.

- A contract to extend Electronic Health Record (EHR) integration to Lāna'i was executed in September 2025, enabling patient data to flow directly into providers' existing medical record systems.
- Blood pressure monitoring: 755 patients enrolled with 140 neighbor-island participants, achieving adherence rates above national averages
- NICU home weight monitoring: 5 families onboarded with 3 actively reporting and high satisfaction rates
- Tele-NICU and Neonatal Resuscitation Training (NRT): Deployed simulation equipment to 4 rural hospitals on Kaua'i and Hawai'i Island

Workforce Development and Training:

- 73 clinicians and staff trained statewide in neonatal resuscitation, palliative care, and sonography standards set by the American Institute of Ultrasound in Medicine (AIUM)—the national benchmark for ultrasound image quality and diagnostic accuracy. Training ensures neighbor island providers meet the same clinical standards as tertiary care centers on O'ahu.
- Training evaluations achieving 99% rating of 5/5, with strong demand for refresher courses
- Recruited 5 healthcare professionals to permanent positions: 3 Native Hawaiian IT staff at University Health Partners (UHP), 1 Native Hawaiian faculty at Kapi'olani Medical Center for Women and Children (KMCWC), and 1 Micronesian Telehealth Genetic Counselor—building a workforce that reflects the communities it serves.

Research and Statewide Impact:

- UH data team produced maternal health heat maps using PRAMS and Laulima datasets to inform rural care priorities
- Two poster presentations accepted for the Society for Maternal-Fetal Medicine (SMFM) 2026 national conference
- Data analysis manuscript under journal review, positioning Hawai'i as a national model for rural maternal telehealth

The Native Hawaiian telehealth component employs 20 community health workers, three advanced practice registered nurses, and comprehensive software contracts supporting ongoing remote healthcare delivery.

Native Hawaiian Remote Patient Monitoring Program

Remote Patient Monitoring Program (RPM) - CY Q2 2025:

The RPM program, delivered through partnership with The Queen's Health Systems (QHS) under a $3,931,124.28 NOFO 1 contract, represents a parallel broadband-enabled health innovation focusing on chronic disease management for Native Hawaiians.

The RPM program empowers patients through monitoring devices that measure vital signs such as blood pressure, weight, and oxygen saturation, securely transmitting data directly to healthcare teams through seamless Epic Electronic Medical Records (EMR) integration. This technology enables self-management of chronic conditions including diabetes, hypertension, congestive heart failure, chronic obstructive pulmonary disease (COPD), and obesity, with focus on addressing the significant life expectancy gap among Native Hawaiians.

Program Status (April-June 2025):

- NOFO 1 Contract funding: $3,931,124.28 total award; $571,122.81 expended; $3,360,001.47 remaining
- Patient enrollment: 43 currently enrolled (33% residing on DHHL lands), 23 pre- activated, 340 total outreach
- Geographic reach: Currently serving O'ahu and Hawai'i Island, with 10 communities engaged including Nānākuli, Kapolei, Honouliuli, Waipahu, Mililani, Waimea, Waikōloa, Hāwī, Honoka'a, and Pa'auilo
- Core team: 1 RPM Operations Manager, 4 Patient Care Navigators (2 on O'ahu, 2 on Hawai'i Island), 1 Fiscal Specialist

Performance Outcomes:

- Program adherence (vital sign reporting) exceeding 70% goal
- Patient satisfaction at 95% (small sample size, June 2025)
- Adherence rates significantly higher than HRS national averages for both blood pressure ($p<0.05$) and weight ($p<0.05$)
- Systolic and diastolic blood pressure decreased as length of enrollment increased
- Early detection and intervention preventing costly hospital admissions and emergency care

Key Learnings:

- Field/home visits in high demand and extremely well-received, reinforcing the value of personal, face-to-face connection with the Native Hawaiian population
- Patient/copay cost uncertainty identified as persistent barrier, with financial concerns documented as reason for declining participation
- Multi-disciplinary workflows refined, including connections to clinical pharmacists, social workers, and cross-referrals with Virtual Urgent Care (VUC) and Queen's Clinically Integrated Physician Network (QCIPN)

The RPM program shows the critical role of broadband-enabled chronic disease management in improving health outcomes for Native Hawaiian communities. Real-time remote monitoring has enabled early detection of health emergencies including falls, dangerously low or high blood pressure, heart attacks, and other conditions that might have gone undetected without the technology. Patient mo'olelo (stories) highlight the value of coordinated care through RPM, PCP, and integrated physician

networks, as well as the impact of culturally-grounded, community-based care in fostering trust and motivation for health management.

3.3 Early Outcomes and Strategic Learning

The SIC Crisis as Unexpected Catalyst.

This telecommunications emergency that began in May 2024 transformed from a crisis management challenge into a powerful demonstration of DHHL's capacity for rapid, coordinated response across complex stakeholder networks. While the SIC service termination created immediate hardships for 1,500 Hawaiian Home Lands households, it simultaneously validated DHHL's strategic approach to broadband infrastructure development and emergency preparedness.

Multi-Stakeholder Emergency Coordination

DHHL's crisis response demonstrated effective coordination capabilities across Federal, state, and local stakeholder groups that will prove essential for comprehensive broadband infrastructure deployment. The Department successfully coordinated with:

- Federal Agencies: Federal Communications Commission (FCC), Rural Utilities Service (RUS), National Telecommunications and Information Administration (NTIA)
- State Entities: Hawai‘i Public Utilities Commission, Governor's office, Lieutenant Governor's office
- Legislative Bodies: State and Federal legislators providing advocacy and constituent support
- Local Organizations: Homestead associations across multiple islands
- Private Providers: Hawaiian Telcom, Spectrum, and other telecommunications carriers
- Media Partners: Local and statewide media outlets providing public communication
- The Department maintained daily communication updates throughout the emergency response period, demonstrating the organizational maturity and stakeholder coordination capabilities that will prove essential for successful Federal program management.

Demonstrated Emergency Response Capabilities

The Department's ability to mobilize emergency Wi-Fi hotspot distribution within five days of initial service disruptions showcased logistical capabilities that directly inform NOFO 2 infrastructure deployment planning. DHHL prioritized remote communities like Pu'ukapu on Hawai‘i Island where residents had limited access to alternative telecommunications providers, showing commitment to serving the most vulnerable beneficiaries first.

Proactive Community Outreach Strategy

DHHL began community outreach weeks before the May 30, 2024 service cessation date, enabling households to transition to alternative providers with minimal disruption.

This proactive approach included:

- Direct communication to affected households through multiple channels
- Coordination with alternative providers to ensure service availability
- Distribution of transition guides and technical support resources
- Establishment of help desk services for beneficiary assistance

iQ 360 Crisis Communications Coordination

DHHL's partnership with iQ 360 proved instrumental in executing rapid, coordinated communications during the SIC crisis. iQ 360 managed multi-channel outreach to 1,500 affected households statewide, creating targeted social media campaigns, coordinating media relations, and developing stakeholder communications that enabled households to transition to alternative providers. The partnership's crisis response capabilities included daily communication updates, coordination with government officials and legislators, and comprehensive messaging that balanced urgency with practical guidance.

iQ 360's ability to quickly mobilize crisis communications infrastructure while maintaining cultural competency and community trust validated DHHL's strategic approach to partnership-based program management.

Partnership Development Through Crisis Management

The telecommunications emergency accelerated relationship development with key telecommunications providers who recognized DHHL as a reliable and responsive partner capable of coordinating complex multi-stakeholder initiatives. DHHL's coordination with the University of Hawai‘i to secure additional emergency hotspots established the foundation for the strategic partnership that would later enable middle-mile infrastructure coordination and cost optimization strategies.

Strategic Validation of Federal Investment

The crisis validated DHHL's strategic approach to Federal program sequencing. Having already secured NOFO 1 funding enabled the Department to respond effectively with existing Federal resources and established program management capabilities. The crisis experience directly informed NOFO 2 application development, demonstrating to Federal reviewers that DHHL possessed the organizational capacity, stakeholder relationships, and emergency response capabilities necessary for managing large-scale infrastructure deployment.

4.0 NOFO 2 DEVELOPMENT

4.1 Building on NOFO 1 Experience

Strategic Framework Development Through Federal Coordination

DHHL developed the NOFO 2 application building directly on lessons learned from NOFO 1 implementation and crisis response experiences, working closely with Federal partners throughout the coordination and technical planning process. The Department established comprehensive strategic framework through direct coordination with NTIA Federal Program Officer Nicholas Courtney, including formal presentations to NTIA leadership on December 21, 2023, that outlined DHHL's island-by-island infrastructure deployment approach.

Infrastructure Study Results Informing NOFO 2 Strategy

DHHL's comprehensive infrastructure assessment created the foundation for evidence- based NOFO 2 strategic planning through systematic connectivity gap analysis across all Hawaiian Home Lands. The Department completed comprehensive mapping of all islands including existing fiber infrastructure, proposed fiber deployment routes, unserved DHHL households requiring fiber connectivity, very remote unserved households requiring satellite service, and proposed areas for future development on DHHL lands (detailed infrastructure assessment methodology and findings provided in Appendix A).

Two-Tier Strategic Priority Framework

DHHL developed systematic approach to infrastructure deployment across all islands, with each project following consistent priority framework designed to maximize infrastructure investment efficiency while ensuring comprehensive coverage:

- **Priority 1:** Broadband Serviceable Location Expansion focuses on expanding existing connections to locations identified under the FCC broadband fabric
- **Priority 2:** New Infrastructure for Preplanned Developments addresses comprehensive telecommunications infrastructure deployment for future Hawaiian Home Lands development projects, including fiber optic capabilities

4.2 Expanded Scope and Objectives- Infrastructure-Focused Investment Strategy

DHHL's NOFO 2 application allocated $66.9 million of the $71.77 million total award specifically to infrastructure deployment, showing strategic commitment to comprehensive physical connectivity that addresses decades of telecommunications under-investment across Hawaiian Home Lands.

Five Strategic Infrastructure Priorities:

1. Fiber Connections - 713 homes and 1 rural health clinic

Comprehensive fiber optic infrastructure deployment providing connectivity to major Hawaiian Home Lands developments including East Kapolei (450 homes), Hanapepe (82 homes), and Lealiʻi (155 homes) and broadband infrastructure for the relocation of Waimea Nui Health Clinic. Community Anchor Institutions will also receive service; residential service speeds will vary by provider and location. This fiber infrastructure represents 103,800 feet of new fiber optic conduit designed to support both immediate connectivity needs and future community development expansion.

2. LEO Satellite Connections - 118 homes

Low Earth Orbit satellite connectivity solutions for remote homesteads where fiber deployment remains economically unfeasible due to geographic constraints or infrastructure limitations such as electricity access. Professional installation and equipment provision supporting remote communities with speeds up to 100 Mbps downstream / 20 Mbps upstream when conditions permit (detailed satellite deployment planning in Appendix A). Priority communities: Kahikinui, Nei Nei, and Kalaupapa

3. Middle Mile Fiber for Future Developments

Strategic middle mile infrastructure deployment coordinated with University of Hawaiʻi BEAD program to prevent duplication while ensuring comprehensive coverage across Hawaiian Home Lands.

4. Community Digital Innovation Centers - 4 locations

Four new dedicated facilities will be constructed at strategic locations: Maku'u (Hawaii Island), Pana'ewa (Hawai'i Island), Anahola (Kauai), and Waiohuli (Maui) providing workforce development, digital literacy training, and community coordination services. Additionally, DHHL will leverage existing community spaces and facilities for expanded digital literacy programming across homesteads.

5. Tower Management - 25 existing towers

Professional management and optimization of existing wireless infrastructure including revenue generation ($15,000 monthly from current leasing, based on current operational understanding), security enhancement, and Federal compliance for airport-proximate installations (detailed tower management operations documented in Appendix A).

4.3 Community Feedback Integration

Beneficiary Survey Results Informing Infrastructure Planning

DHHL's NOFO 2 application development incorporated comprehensive community feedback gathered through the systematic beneficiary consultation process detailed in Section 2.2, ensuring that Federal infrastructure investment priorities reflected actual community needs rather than external assumptions about connectivity requirements.

Community-Specific Technology Solutions and Infrastructure Constraints

Detailed community consultation revealed location-specific infrastructure preferences and fundamental barriers that informed DHHL's comprehensive technology deployment strategy. Technical assessment confirmed that infrastructure solutions vary by community based on geographic and infrastructure realities (technical wireless deployment analysis provided in Appendix A).

Remote Community Infrastructure Barriers and Satellite Solutions

Consultation with Kahikinui, homesteaders revealed fundamental infrastructure challenges beyond telecommunications covered by Federal investment strategy. The biggest concern for many homesteaders is electricity access - where permanent power pathways exist, fiber deployment becomes more feasible. Until permanent power sources can be established in the most remote areas, traditional broadband cannot be delivered by Internet Service Providers, making LEO satellite the only viable connectivity option for these remote communities.

5.0 PARTNERSHIP STRATEGY

Strategic Partnership Approach and Rationale

DHHL possesses a significant advantage over many tribal broadband initiatives on the continent as the land administrator for Hawaiian Home Lands, enabling streamlined infrastructure deployment without complex right-of-way negotiations across multiple private landowners.

DHHL's comprehensive broadband initiative required advanced technical expertise, Federal coordination capabilities, and multi-stakeholder management that exceeded any single organization's internal capacity. Recognizing that successful telecommunications infrastructure deployment across 53 homesteads on five islands demanded collaborative expertise spanning engineering assessment, environmental compliance, community engagement, and Federal program coordination, DHHL developed a strategic partnership framework that leveraged external technical capabilities while maintaining community- centered decision-making authority.

The Department's partnership strategy prioritized organizations with demonstrated experience in telecommunications infrastructure, established relationships with Federal agencies, and commitment to Native Hawaiian community empowerment. DHHL sought collaborative partnerships that integrated external expertise with internal knowledge of Hawaiian Home Lands communities, governance structures, and cultural considerations essential for sustainable infrastructure development.

This approach enabled DHHL to rapidly scale technical capabilities while building long-term institutional knowledge within the Department. The partnership framework also created redundancy and risk mitigation essential for managing $89 million in Federal investment across complex regulatory environments, ensuring that infrastructure deployment could proceed despite potential organizational changes or coordination challenges with any single partner entity.

5.1 Key Partnership Development and Management

5.1.1 Oceanit Laboratories Partnership

DHHL's partnership with Oceanit Laboratories provides professional technical coordination and collaborative problem-solving essential for comprehensive infrastructure deployment. The partnership encompasses both technical expertise provision and integrated field assessment capabilities that ensure infrastructure planning reflects actual ground conditions rather than theoretical deployment scenarios (comprehensive partnership scope and technical contributions documented in Appendix A). Oceanit's technical expertise complemented DHHL's community engagement through comprehensive infrastructure assessment that validated community-identified service needs through professional technical evaluation. Joint field surveys across multiple homesteads including Kalama'ulu, Kapa'akea,

Ho'olehua,, Na'alehu, Keaukaha, and Maku'u provided systematic infrastructure condition assessment and coverage gap identification.

Technical Assessment Findings and Strategic Recommendations:

- SIC Infrastructure Evaluation: Professional assessment confirmed existing infrastructure was of limited value for future deployment, validating comprehensive replacement strategy
- Tower Infrastructure Analysis: Systematic evaluation of tower assets including structural integrity assessment, security evaluation, and revenue optimization analysis ($15,000 monthly current revenue generation)
- Coverage Planning Coordination: Professional radio frequency planning and carrier coordination to optimize coverage across homestead communities

5.1.2 University of Hawaii BEAD Program Coordination

DHHL established strategic coordination with the University of Hawai‘i's BEAD program through formal partnership agreements that optimize Federal broadband investments while preventing duplication of infrastructure across state and tribal jurisdictions. This collaboration represents effective intergovernmental coordination that maximizes taxpayer investment efficiency while ensuring comprehensive coverage across Hawaiian communities.

The partnership operates through a no-cost Memorandum of Understanding established in the Fall of 2022 that enables resource sharing, technical expertise exchange, and coordinated implementation timelines benefiting both Federal programs. University of Hawai‘i leadership shows institutional commitment to DHHL's broadband success through direct Federal advocacy, with UH Vice President for Information Technology Garret T. Yoshimi providing formal support letters to (then) NTIA Administrator Alan Davidson endorsing DHHL's technical capabilities and program merit.

5.1.3 iQ 360 Community Outreach and Crisis Communications Partnership

DHHL's partnership with iQ 360 provides essential community outreach, public education, and crisis communications capabilities that connect Federal broadband investments directly to Native Hawaiian beneficiaries. Under a comprehensive service agreement, iQ 360 delivers three interconnected program areas supporting TBCP digital equity objectives:

- Crisis Communications: iQ 360 provides essential crisis response capabilities for telecommunications disruptions affecting Hawaiian Home Lands broadband access. The partnership proved instrumental during the May 2024 SIC telecommunications crisis, when iQ 360 coordinated rapid communication to 1,500 affected households statewide through multiple channels including social media, direct outreach, and media coordination. iQ 360 developed comprehensive stakeholder communications, coordinated with government officials and alternative providers, and maintained daily updates throughout the emergency response period. The partnership maintains on-call support for immediate crisis response and

continues developing comprehensive crisis communication plans to protect TBCP-funded services and ensure connectivity continuity.

- Community Meeting Support: iQ 360 coordinates planning, logistics, and execution for DHHL community meetings that inform lessees about TBCP-funded broadband initiatives. This includes creating targeted social media campaigns, coordinating with government officials to promote meetings, and developing presentations and materials that educate Native Hawaiian lessees about federally-funded broadband services and technology access programs.

- Public Education Campaigns: iQ 360 manages comprehensive public education initiatives reaching Native Hawaiian households eligible for TBCP-funded broadband services. The partnership establishes and maintains social media accounts for DHHL's broadband program, creates photographs and short videos documenting program progress, and coordinates with Connect Kākou and other stakeholders to ensure consistent messaging. iQ 360 handles media outreach including press releases, media training for DHHL leadership, and responses to media inquiries about federally-funded broadband programs. The partnership develops direct mail pieces, web content, and email newsletters reaching lessees about digital equity and broadband access opportunities.

5.2 Stakeholder Coordination Approach

Multi-Agency Federal Coordination Framework

DHHL developed comprehensive Federal coordination protocols spanning the National Telecommunications and Information Administration (NTIA), Federal Communications Commission (FCC), and the US Department of Agriculture - Rural Utilities Service (USDA-RUS), and other Federal agencies to ensure coordinated broadband development that maximizes Federal investment efficiency while maintaining compliance across multiple regulatory frameworks. The Department's systematic approach to Federal stakeholder coordination—demonstrated through the SIC crisis response and successful NOFO application processes—establishes foundation for ongoing Federal partnership management throughout infrastructure deployment.

State and Local Partnership Integration

The Department established systematic coordination with state and county governments across all islands, creating frameworks for comprehensive digital opportunity coordination that leverage both DHHL's Federal broadband investments and local digital inclusion initiatives. These relationships enable resource optimization while preventing duplication of infrastructure investments across jurisdictional boundaries and ensuring coordinated service delivery.

Connect Kākou Statewide Initiative Coordination

DHHL serves as a key partner in Lieutenant Governor Sylvia Luke's Connect Kākou initiative, Hawaii's comprehensive statewide broadband program launched in collaboration with Governor Josh Green's office. Connect Kākou encompasses over $390 million in Federal broadband funding across the state, coordinated through partnerships with the Hawaii Broadband and Digital Equity Office (HBDEO), University of Hawai'i, Department of Hawaiian Home Lands, and multiple state and county agencies. The initiative aims to ensure that communities across Hawaii have reliable and affordable access to high-speed internet through transformative statewide infrastructure and digital literacy programs.

Connect Kākou 's comprehensive approach includes innovative community engagement initiatives such as "Digital Detectives," which enables residents to contribute to statewide internet speed mapping by taking 30-second speed tests. This community-driven data collection helps identify areas most in need of infrastructure investment, ensuring Federal funding allocation targets underserved communities effectively. The initiative also coordinates with major private sector investments, including Google's $1 billion Pacific Connect project to create new fiber-optic subsea cables connecting Hawaii with Japan, the continental U.S., the Commonwealth of the Northern Mariana Islands, and Guam, as well as Hawaiian Telcom's undersea network and the Hawaii Interisland Fiber Link (HIFL).

DHHL's participation in Connect Kākou ensures that Hawaiian Home Lands broadband development aligns with broader state digital equity goals while maintaining community-centered approach and cultural competency essential for Native Hawaiian community empowerment.

Community and Homestead Association Engagement

DHHL's stakeholder coordination encompasses systematic engagement with homestead associations across 26 communities, addressing the complex governance structures and multiple association approaches that affect comprehensive infrastructure development.

The Department's cultural competency in managing these relationships through talk story sessions and extended consultation periods ensures authentic community ownership of telecommunications infrastructure while respecting diverse community leadership structures. The Department maintains comprehensive community outreach capabilities through partnerships with DHHL Communications staff and iQ 360 to maintain community outreach and public engagement. This includes coordinated media releases, social media campaigns, and public events that keep communities informed about broadband deployment progress and opportunities for participation in digital literacy programming (detailed community outreach campaigns documented in Appendix A).

6.0 INFRASTRUCTURE IMPLEMENTATION AND PROGRESS

6.1 Year 1 Achievements

Organizational Capacity Building

DHHL established a dedicated broadband team within the Department, addressing critical knowledge gaps that had previously limited the organization's ability to navigate complex Federal telecommunications programs and coordinate with industry stakeholders. This team development included specialized training in Federal grant management, telecommunications infrastructure planning, and emergency response coordination.

Cross-Divisional Integration Approach

The Department implemented a comprehensive cross-divisional coordination model ensuring broadband initiatives integrate seamlessly with all DHHL operations rather than functioning as standalone telecommunications projects. DHHL's Homestead Services Division's District Operations Branch assists with identifying connectivity needs and coordinating beneficiary outreach, while DHHL's Land Development Division coordinates broadband infrastructure projects with current and future developments.

Comprehensive Infrastructure Assessment and SIC Asset Evaluation

DHHL conducted systematic infrastructure surveys across multiple homestead communities to assess existing telecommunications assets and validate Federal investment priorities through on-ground technical evaluation. The comprehensive assessment encompassed detailed surveys in Kalama'ulu, Kapa'akea, Ho'olehua, Na'alehu, Keaukaha, and Maku'u, providing complete inventory of telecommunications infrastructure conditions across diverse homestead environments (detailed infrastructure survey methodology and findings provided in Appendix A).

Tower Asset Management and Security Assessment

Professional infrastructure assessment identified critical tower management requirements including physical security improvements, maintenance protocol development, and Federal compliance for airport-proximate installations. Tower revenue analysis demonstrated existing revenue generation of $15,000 monthly from current leasing arrangements, based on current operational understanding, supporting continued tower operations under improved maintenance and security protocols (comprehensive tower management analysis in Appendix A).

6.2 Year 2 Implementation Progress and Critical Success Factors

NOFO 1 Program Maturation and Expansion

Year 2 implementation shows DHHL's program management capabilities through successful execution of multiple concurrent initiatives while preparing for comprehensive infrastructure deployment. DHHL advanced from initial assessments to comprehensive deployment planning, with Memoranda of Agreement being finalized with 11 charter schools and 4 Native Hawaiian non-profit organizations on an ongoing basis as individual institutions complete their review and signing processes.

Performance metrics validation shows significant statewide impact:

Through Q3 2025, the Hawai‘i Maternal Telehealth Program (HMTAP) has supported nearly 2,900 total encounters across multiple service lines including tele-ultrasound (491 encounters in Q3 2025), tele-genetic counseling (62 patients in Q3 2025, 26% Native Hawaiian), blood pressure monitoring (755 enrolled with 140 neighbor-island participants), and NICU home weight monitoring (5 families onboarded).

The Native Hawaiian Remote Patient Monitoring (RPM) program through Queen's Health Systems serves 43 enrolled patients (33% residing on DHHL lands), with 340 total individuals reached through outreach efforts as of Q2 2025, showing concrete community impact supporting digital equity goals. The RPM program has achieved adherence rates significantly exceeding 70% goal and national averages, with 95% patient satisfaction. The program has trained 73 clinicians statewide with 99% rating training as 5/5, and has recruited Native Hawaiian staff including 3 IT professionals to University Health Partners (UHP) and 1 faculty member to Kapi‘olani Medical Center for Women and Children (KMCWC).

Recent Infrastructure Acceleration

DHHL has accelerated fiber and cable deployment to multiple locations including:

- Pu'ukapu and Anahola schools
- Fiber infrastructure in Waiohuli/Kēōkea
- LEO deployment in Pu'ukapu community

NEPA Clearance and Federal Coordination Progress

DHHL has secured NEPA clearance for the Hanapēpē project, with additional projects currently navigating environmental review processes. All remaining projects are expected to complete NEPA clearance by Q4 2026, enabling comprehensive construction timeline coordination. The Department coordinates with responsive NTIA NEPA support, maintaining infrastructure deployment timeline integrity while ensuring Federal compliance across all development sites.

6.3 Infrastructure Deployment Specifications

6.3.1 Fiber Infrastructure (103,800 feet total)

East Kapolei, Oahu: 450 homes

- Largest single homestead fiber deployment
- Community Anchor Institutions receive symmetrical 1000 Mbps (1 Gbps) service
- Supports state's largest Hawaiian Home Lands housing development
- Coordinated with Act 279 housing construction timeline

Lealiʻi, Maui: 155 homes

- Comprehensive island coverage expansion
- Integration with future development planning
- Middle-mile coordination with UH BEAD program
- Strategic placement for future homestead expansion

Hanapēpē, Kauai: 82 homes

- Rural homestead connectivity addressing service gaps
- First project to receive NEPA clearance
- Serves established agricultural community
- Model deployment for rural homestead fiber installation

Waimea Nui Health Center: Dedicated Fiber Connection (5,300 feet)

- Critical healthcare facility connectivity
- Supports telehealth service delivery
- Redundant connection ensuring service reliability
- Integration with broader community health infrastructure

6.3.2 LEO Satellite Installations

- 118 remote households with professional installation and equipment provision
- Service speeds up to 100 Mbps downstream / 20 Mbps upstream when conditions permit
- Coverage for areas where fiber is economically infeasible due to:
  - ✓ Geographic isolation and difficult terrain
  - ✓ Electricity access limitations
  - ✓ Low household density making fiber cost-prohibitive
  - ✓ Priority communities: Kahikinui, Nei Nei, and Kalaupapa,
  - ✓ Detailed satellite deployment planning in Appendix A

6.3.3 Advanced Wireless Infrastructure

2.5GHz Spectrum Deployment:

- Capital Projects Fund grant funding was used for equipment and deployment
- Kahikinui, Maui deployment completed March 31, 2025
- Enhanced wireless coverage for remote homestead community
- Utilizes DHHL's dedicated 2.5GHz spectrum allocation

Tower Inventory and Management:

- Complete wireless inventory finalized December 2024
- Standardized operating procedures for long-term asset management
- Security enhancements and Federal compliance protocols
- Revenue optimization through carrier partnership coordination
- Detailed tower management protocols in Appendix A

6.3.4 Community Digital Innovation Centers (4 locations)

Maku‘u Community Digital Innovation Center (Hawaii Island)

- Coordinated with Farmers Market operations serving 100+ vendors
- Strategic placement in established agricultural community
- Integration with Maku‘u broadband deployment
- Construction award and initiation expected Q2 2026

Pana‘ewa Community Digital Innovation Center (Hawaii Island)

- Supporting planned new homes with workforce development programming
- Planned homestead expansion on Hawai‘i Island
- Comprehensive digital literacy and remote work training
- Coordination with Act 279 housing development timeline

Anahola Digital Innovation Center (Kauai)

- Addressing community consultation feedback
- Partnership with local homestead association
- Cultural programming integration with technology training
- Strategic placement for North Shore communities

Waiohuli Community Digital Innovation Center (Maui)

- Integrated with community needs assessment
- Cultural programming requirements prioritized
- Serves multiple Central Maui homestead communities
- Coordination with Leali‘i fiber infrastructure deployment

7.0 COMMUNITY IMPACT & FUTURE VISION

7.1 Current and Projected Beneficiary Outcomes

Quantitative Impact Metrics and Community Baseline Assessment: DHHL's comprehensive broadband initiative operates from extensive community consultation data detailed in Section 2.2 that provides precise measurement capabilities for Federal investment accountability and community impact assessment.

Current Community Telecommunications Baseline (Pre-Infrastructure Deployment):

- Survey participation: 66 beneficiaries across 26 different homesteads representing comprehensive geographic distribution
- Provider market fragmentation: 14 different telecommunications providers serving Hawaiian Home Lands with inconsistent service quality
- Dominant provider challenges: Spectrum (45.5% market share) and Hawaiian Telcom (12.1%) with varying ability to meet all community connectivity needs
- Failed infrastructure impact: SIC/Sandwich providers (18.2% combined) representing vulnerable telecommunications infrastructure

Federal Infrastructure Deployment Targets:

- Total Hawaiian Home Lands households: 10,048 statewide requiring qualifying broadband access
- Unserved households requiring infrastructure: 301 households lacking 25 Mbps download/3 Mbps upload with sufficient latency
- Unserved businesses requiring connectivity: 58 enterprises across homesteads needing telecommunications infrastructure
- Unserved community anchor institutions: 4 facilities providing essential community services requiring broadband access

Healthcare Access Transformation:

Telehealth technology eliminates geographic barriers that historically prevented Native Hawaiian families from accessing specialized healthcare services. Remote communities like Kahikinui and Pu'ukapu now have direct access to medical specialists through improved connectivity, reducing travel requirements and enabling consistent healthcare maintenance essential for community health and wellness. The Kahikinui satellite installation can be utilized for telehealth services, providing critical healthcare access to this remote community.

The NTIA/DHHL Hawai'i Maternal Telehealth Access Program exemplifies this transformation, having evolved from concept to a robust statewide network in less than two years. Building on an $800,000 FCC COVID-19 Round 2 award that established the technological foundation, the program has delivered nearly 2,900 encounters through Q3 2025 across tele-ultrasound, tele-genetic counseling, blood pressure monitoring, and NICU home weight monitoring services. The program has equipped clinics with modern technology, trained 73 clinicians statewide (achieving 99% satisfaction ratings), and positioned Hawai'i as a national model for rural maternal telehealth through research presentations at national conferences.

Complementing the maternal health focus, the Native Hawaiian Remote Patient Monitoring (RPM) program through Queen's Health Systems shows the power of broadband- enabled chronic disease management for conditions including diabetes, hypertension, heart failure, COPD, and obesity. Serving 43 enrolled patients (33% on DHHL lands) across O'ahu and Hawai'i Island, the program has achieved adherence rates significantly exceeding the 70% goal and surpassing national averages for both blood pressure and weight monitoring. Patient mo'olelo (stories) document life-saving early detection of health emergencies—including falls, dangerously abnormal blood pressure, and heart attacks— that might have gone undetected without real-time remote monitoring capabilities. With 95% patient satisfaction and persistent demand for field/home visits, the program validates the importance of culturally grounded, community-based care in fostering trust and motivation for health management among Native Hawaiian communities.

As both programs enter their sustainability phases, the focus shifts toward expanded Electronic Health Records (HER) and HL-7 integration (which auto-transmits ultrasound images to O‘ahu specialists in real time) to additional partner sites, engagement with state and commercial insurers to establish reimbursement pathways for tele-ultrasound and remote monitoring services, and leveraging statewide visibility to advocate for durable, equity-driven telehealth policy. This trajectory illustrates the power of coordinated Federal investment in building enduring, equitable telehealth infrastructure serving mothers, infants, and individuals with chronic conditions across every island.

7.2 Cultural Preservation and Language Revitalization

Digital Sovereignty and Cultural Identity Integration: DHHL's broadband initiative incorporates traditional Native Hawaiian values and cultural practices as foundational elements rather than peripheral considerations. The Community Digital Innovation Centers will integrate cultural

programming with technology training, ensuring digital advancement strengthens rather than diminishes cultural identity.

Traditional Ecological Knowledge Documentation:
Enhanced broadband connectivity enables systematic documentation and sharing of traditional Hawaiian land management practices, sustainable agriculture techniques, and indigenous environmental stewardship approaches. Homestead communities can share successful traditional practices alongside modern innovations, supporting both economic development and environmental preservation while honoring ancestral knowledge.

Cultural Enterprise Development:
High-speed connectivity enables Native Hawaiian entrepreneurs to develop cultural tourism, traditional arts, and cultural education enterprises that were previously limited by inadequate telecommunications infrastructure. Homestead artisans can now access global markets for traditional Hawaiian crafts, while cultural practitioners can offer remote education and consultation services that generate sustainable income while preserving cultural traditions.

7.3 Implementation Challenges and Lessons Learned

State Procurement Process Complexities
DHHL's broadband implementation has revealed significant challenges within Hawaii's state procurement processes that have impacted project timelines and increased administrative burden. The state procurement system, designed for traditional government purchases, lacks the flexibility and technical expertise necessary for complex telecommunications infrastructure projects.

Federal Coordination Learning Curve Managing $89 million across two Federal grant programs while coordinating with multiple Federal agencies (NTIA, FCC, RUS) required developing comprehensive Federal relationship management capabilities that exceeded DHHL's initial organizational capacity.

Key Federal Coordination Lessons:

- Early and frequent communication with Federal program officers prevents minor issues from becoming major compliance problems
- Federal agencies appreciate proactive transparency about implementation challenges rather than optimistic reporting that obscures real barriers
- Cross-agency coordination requires dedicated staff time and cannot be managed as additional responsibility for existing personnel
- Federal grant management systems vary significantly between agencies, requiring specialized training and process documentation

Infrastructure Technical Challenges

Deploying telecommunications infrastructure across Hawaiian Home Lands presents unique technical challenges related to geography, existing utility access, and environmental considerations that standard continental infrastructure approaches cannot address.

7.5 Economic Development Potential

Workforce Development Through Digital Innovation Centers

DHHL's comprehensive broadband initiative creates foundation for sustained economic development through strategic workforce development programming generally throughout the homesteads and specifically at four Community Digital Innovation Centers. These facilities provide comprehensive digital literacy training for 12,660 targeted individuals served by Community Anchor Institutions while creating local employment opportunities through technology support services.

DHHL is going out to bid for local services providers to design and implement programs that ensure culturally- appropriate workforce development that integrates traditional Native Hawaiian values with modern technology skills. The workforce development program encompasses digital literacy training, remote work preparation, cybersecurity and technology management certification, and digital entrepreneurship support. Community outreach through multiple channels ensures broad participation across homestead communities, while specialized programming addresses specific community needs identified through consultation processes.

Strategic Workforce Development Research Initiative

To ensure workforce development investments effectively address actual labor market needs, DHHL commissioned a comprehensive Broadband Infrastructure Workforce Development Study with Ward Research (October 2025 - February 2026). This market research study fulfills TBCP Section 905(c)(5) requirements by identifying sustainable broadband-enabled remote employment opportunities for rural Hawaiian Home Lands through systematic research combining labor market analysis with primary data collection from 100 rural employers and 20 qualitative interviews.

The employer-driven research approach ensures Digital Innovation Center training programs directly align with actual employment opportunities and employer needs in different geographic areas. Rural employers across telecommunications, government, healthcare, education, and agricultural sectors will identify current workforce needs, hiring projections, required qualifications, and barriers to hiring beneficiaries. This data-driven approach will drive beneficiaries toward training programs that lead to measurable employment outcomes, maximizing return on Federal broadband infrastructure investment.

Remote Work Opportunity Creation and Digital Entrepreneurship

Comprehensive infrastructure providing connectivity enables DHHL beneficiaries to participate in remote work opportunities that were previously inaccessible due to inadequate telecommunications infrastructure. The elimination of speed and reliability barriers documented through community consultation creates foundation for economic opportunities extending beyond geographic limitations.

7.6 Long-term Sustainability Planning

Universal Fiber Infrastructure Licensing Agreement Framework for ISP Relationships: DHHL is developing a comprehensive Universal Fiber Infrastructure Licensing Agreement framework that revolutionizes the traditional ISP relationship model by aligning economic incentives with community service priorities and establishing income-based beneficiary protections.

Note: The Universal Fiber Infrastructure Licensing Agreement framework represents DHHL's proposed approach to long-term infrastructure management currently in active negotiation with service providers. DHHL will maintain ownership and responsibility for the last-mile fiber backbone infrastructure. While neither Hawaiian Telcom nor Spectrum have ceded ownership of existing infrastructure, the framework under negotiation would establish clear operational responsibilities. DHHL would secure capability and funding to maintain the last-mile fiber backbone infrastructure through ISP licensing fee revenue. Final agreements will be executed following completion of stakeholder negotiations and regulatory review.

Income-Based Tiered Fee Structure:

The proposed licensing framework would establish a fee model that incentivizes ISPs to **serve low-income beneficiaries rather than avoiding them:**

Income Level (% of AMI)	Maximum Monthly Rate	Minimum Speed
0-30% AMI	$15	100/100 Mbps
31-50% AMI	$20	100/100 Mbps
51-80% AMI	$40	600/600 Mbps
81-120% AMI	$50	800/600 Mbps
Above 120% AMI	Market Rate	1Gbps/500 Mbps

Enhanced Sustainability Framework

Revenue Diversification Strategy:

- Tower management operations: $15,000+ monthly base revenue with expansion potential through additional carrier partnerships and bringing current contracts to market rate
- ISP licensing agreements: Revenue from infrastructure access fees supporting long- term maintenance and operations
- Telecommunications asset optimization: Strategic partnership with carriers for equipment placement and middle-mile infrastructure leasing

8.0 IMPLEMENTATION TIMELINE AND ROADMAP

8.1 Historical Context (Pre-2024)

DHHL's broadband initiative originated through systematic Federal program development spanning multiple legislative initiatives. The Consolidated Appropriations Act of December 2020 created the Tribal Connectivity Program under NTIA with specific set-aside provisions for DHHL's eligibility under Section 905(a)(8). The subsequent Infrastructure Investment & Jobs Act of November 2021 expanded Federal commitment with additional $60 million set-aside specifically for DHHL programs.

8.2 Current Implementation Plan (2025-2028)

NOFO 1 Program Completion and Performance Monitoring

2025 Implementation Focus:

- Charter Schools device distribution execution across 11 charter schools and 4 Native Hawaiian non-profit organizations with MOAs being finalized on an ongoing basis
- Telehealth program expansion through John A. Burns School of Medicine (JABSOM) and Queen's Health Systems (QHS) with quarterly performance monitoring:
    - Maternal telehealth (HMTAP) Year 3 focus on sustainability including expanded Electronic Health Records (HER)/HL-7 integration (auto-transmission of ultrasound images to O'ahu specialists in real time), insurer reimbursement pathway development, and policy advocacy for equity-driven maternal telehealth services
    - Remote Patient Monitoring (RPM) program growth from 43 enrolled (Q2 2025) toward expanded geographic reach and refined multi-disciplinary workflows integrating clinical pharmacists, social workers, and cross-referrals with Virtual Urgent Care and Queen's Clinically Integrated Physician Network
- Installation of the 7 solar workstations

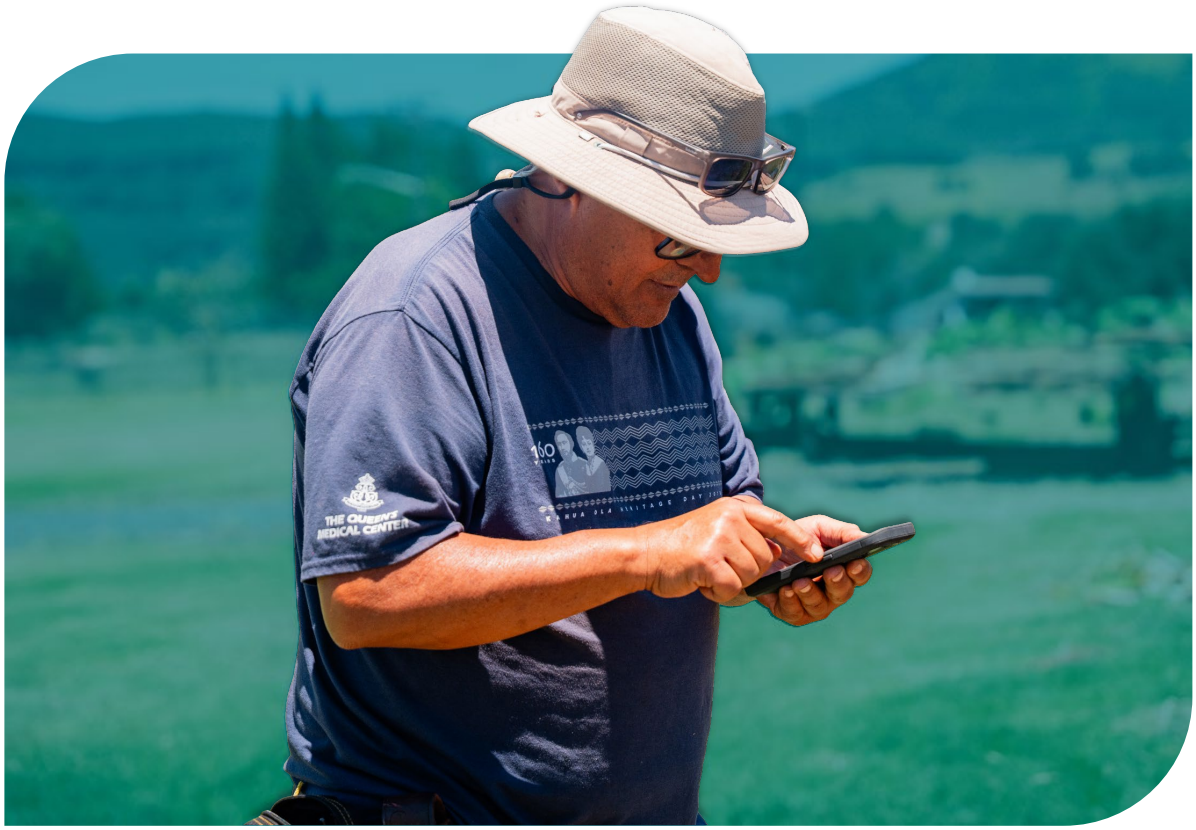
2025 Infrastructure Initiation:

- Construction timeline beginning Q2 2026 following completion of remaining NEPA clearances for all projects
- Digital Innovation Center development across four locations with local Homestead Association partnership activation, with Maku'u scheduled for construction award and initiation in Q2 2026

- Fiber infrastructure deployment initiation across major developments: East Kapolei, Hanapēpē, Leali'i, and Waimea Nui (construction management framework in Appendix A; detailed protocols are under development and will be finalized prior to Q2 2026 construction start)
- Community outreach activities to determine broadband service interest among beneficiaries in target areas (historical data indicates service adoption is highly dependent on cost)
- SIC license termination support including asset inventory and decommissioning activities as needed

2026-2027 Comprehensive Infrastructure Completion:

Infrastructure deployment targets detailed in Section 6.3 include 713 fiber-connected homes and 118 satellite-connected homes, providing comprehensive connectivity across 53 homesteads with Community Anchor Institutions receiving 1000 Mbps symmetrical service and residential service speeds varying by provider and location.



9.0 CONCLUSION: ECONOMIC & CULTURAL SECURITY THROUGH DIGITAL SOVEREIGNTY

Transformative Achievement in Native Hawaiian Self-Determination: DHHL's "Kākoʻo I Ka Lāhui" initiative represents a watershed moment in native Hawaiian self-determination, demonstrating how comprehensive Federal investment combined with authentic community consultation can achieve digital sovereignty while preserving cultural values and strengthening community bonds.

Through $89 million in Federal broadband investment coordinated with $600 million in state housing development, DHHL is enabling beneficiary economic and cultural empowerment through affordable connectivity, workforce development, and community ownership of last-mile digital infrastructure.

From Crisis to Leadership: DHHL's Organizational Evolution

The transformation from May 2024's SIC telecommunications crisis—affecting 1,500 households statewide—to successful management of the largest Federal telecommunications investment in Hawaiian Home Lands history shows DHHL's organizational capacity and community-centered leadership. This evolution from reactive crisis management to proactive digital infrastructure leadership validates DHHL's strategic vision that emergency preparedness capabilities and comprehensive development planning represent complementary rather than competing organizational priorities.

Community Voice as Foundation for Federal Investment

The comprehensive community consultation process—encompassing 120+ documented participants across multiple homesteads—established authentic community voice as the foundation for Federal infrastructure priorities. Beneficiary feedback revealing service challenges ("slow, spotty, and drops often") and affordability concerns directly informed technical planning while ensuring that digital sovereignty serves community-identified needs rather than external development agendas.

Digital Sovereignty as Foundation for Broader Self-Determination

The success of "Kākoʻo I Ka Lāhui" validates the strategic principle that digital infrastructure serves as foundation for comprehensive community empowerment encompassing economic development, educational advancement, healthcare access, and cultural preservation. Digital Innovation Centers providing workforce development for 12,660 individuals served by Community Anchor Institutions while supporting Native Hawaiian language preservation demonstrate successful integration of technological advancement with cultural strengthening.

DHHL's "Kākoʻo I Ka Lāhui" initiative establishes that digital sovereignty—achieved through community-centered planning, Federal investment, and infrastructure control—directly enables the

economic and cultural security essential for DHHL Beneficiary self-determination and long-term community prosperity.

Appendix A: Technical Implementation Partnership Report

Introduction

This appendix contains the 2024 Annual Report prepared by Oceanit Laboratories, Inc., DHHL's primary technical implementation partner for the Tribal Broadband Connectivity Program. This report provides detailed technical and operational perspective on infrastructure development, crisis response, and engineering assessment activities conducted under Oceanit's contract spanning January 2024 through January 2028.

Scope and Context:

Oceanit's report focuses specifically on technical implementation, infrastructure assessments, and operational coordination activities that support DHHL's broader strategic vision for digital sovereignty on Hawaiian Home Lands. While the main report emphasizes community consultation, Federal coordination, and cultural preservation as foundational elements of the $89 million initiative, this technical appendix shows the engineering rigor and professional project management that enables successful infrastructure deployment.

Timeline Considerations:

This report was prepared in early 2025 and includes both completed activities through 2024 and projected timelines for ongoing technical work. Some dates referenced may reflect planning projections rather than completed activities, consistent with standard project management reporting practices.

Relationship to Main Report:

This technical report validates and supports the strategic decisions documented in the main DHHL report while providing operational details essential for Federal compliance and technical stakeholder coordination. Together, these documents demonstrate DHHL's comprehensive approach combining authentic community engagement with advanced technical implementation.

Document Prepared By: Oceanit Laboratories, Inc., under contract with the Department of Hawaiian Home Lands as technical implementation partner for infrastructure development, crisis response coordination, and engineering consultation services.

The technical implementation activities documented in this appendix directly support DHHL's vision that digital sovereignty requires both community-centered decision-making and professional technical execution, ensuring that infrastructure development serves DHHL beneficiary and homesteaders self-determination goals while meeting Federal program requirements and industry standards.

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