Resilience Office

Office of Climate Change, Sustainability and Resiliency
Ke'ena Loli Aniau, Mālama 'Āina a me ke Ola Loa

Office of Climate Change, Sustainability and Resiliency
City and County of Honolulu

ACTION 15: RESILIENCE HUB NETWORK

Prepared by:
University of Hawai'i
Action 15 Project Team

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GLOSSARY

KEY TERMS

Resilience: The capacity of individuals, communities, institutions, businesses, and systems to survive, adapt, and thrive regardless of chronic stress and acute shocks they experience.

Community Resilience: Community resilience is the ability to plan for, prepare for, absorb, and recover from a disaster or crisis event such as a hurricane or even COVID-19. Communities with greater access to human, social, political, and economic capital are likely to be more resilient in the face of an emergency, and therefore, growing our resilience by investing in strengthening these systems is critical to our ability to bounce back better (aka bounce forward!) in the future.

Climate Resilience: Climate resilience is about successfully coping with and managing the impacts of climate change while preventing those impacts from worsening. A climate-resilient society would be equipped to deal with the impacts of climate change.

Ola Resilience Strategy: The Oʻahu Resilience Strategy, developed by the City and County of Honolulu, Hawaii, is focused on adapting to shocks and stresses on the island - primarily increased cost of living and climate change impacts in Honolulu. The Strategy offers 44 Actions across four focal areas or Resilience "Pillars" of Long-term Affordability (local economy), Disaster Preparedness, Climate Security, and Community Cohesion for the island and communities of O'ahu. [https://resilientoahu.org/resilience-strategy]

Action 15: A continuation of the Ola Resilience Strategy for Oʻahu created in 2019. The Ola resilience plan calls for 44 actions to help create a more resilient Oʻahu based on 4 Pillars of Resilience. In the Action 15 Research, the main focus is on "Bouncing Forward" as we face natural disasters.

Emergency Responder: Someone whose job is to be one of the first people to arrive to deal with an emergency, especially a paramedic, police officer, or firefighter, and those that are first on the scene to natural disaster response like FEMA, Red Cross, etc.

Blue Skies: Non-emergency scenarios.

Gray Skies: Emergency scenarios, including before, during, and after a disaster.

HAM Radio: Ham radio is a licensed radio service that enables users to communicate worldwide with their equipment and can be vital for emergency and disaster communications.

Climate Change Mitigation: Climate Change Mitigation refers to efforts to reduce or prevent the emission of greenhouse gasses. Mitigation can mean using new technologies and renewable energies, making older equipment more energy efficient, or changing management practices or consumer behavior. It can be as complex as a new city plan or as simple as improvements to a cook stove design to reduce emissions.

ACRONYMS

CERENE: Center For Resilient Neighborhoods at Kapi'olani Community College
DEM: Department of Emergency Management
FEMA: Federal Emergency Management Agency
HI-EMA: Hawai'i Emergency Management Agency
CICRN: Cross Island Community Resilience Network
DURP: University of Hawai'i Department of Urban and Regional Planning
PUC: Primary Urban Center
CCSR: City and County Office of Climate Change, Sustainability, and Resiliency
HSEO: Hawai'i State Energy Office
NDPTC: National Disaster Preparedness Training Center
RCL: Kapi'olani Community College Resilience Corps Leader
KSSL: Kapi'olani Service and Sustainability Learning
DHHL: Department of Hawaiian Home Lands
WCCHC: Wai'anae Coast Comprehensive Health Center
KEY: Kualoa-He'eia Ecumenical Youth
ETIPP: Energy Transition Initiative Partnership Program

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Department of Community Services
Department of Emergency Management
'Elepaio Program
'Ewa Assembly of God
'Ewa Beach Lions Club
'Ewa Community Church
Friends of Waialua Library
Hale Kipa
Hawaiian Electric Company
Hawai'i Kai Strong
Hawai'i Natural Energy Institute
Hawai'i Emergency Management Agency
Hawai'i Sea Grant
Hawai'i State Energy Office Wayfinders
Hoa 'Āina O Mākaha Farm
Hui Huliau
Hui O Hau'ula, Hau'ula Community Association
Kaimukī Middle School
Kapi'olani Community College Resilience Corps Leaders
Kapi'olani Service and Sustainability Learning
Kapolei Chamber of Commerce
Kapolei Heritage Center
Kalihi Union Church
Keep the North Shore Country
KEY Project
Ko'olauloa Community Partners
Ko'olaupoko Community Partners
Kroc Center
Leeward District Service Club
Lloyd Yonenaka and the Neighborhood Board Commission
Ma'o Organic Farms
Naked Cow Dairy Hawai'i
National Disaster Preparedness Training Center (NDPTC)
Neighborhood Board Commission & Neighborhood Assistants
North Shore Chamber of Commerce
North Shore Community Land Trust
North Shore Neighborhood Board (#27)
Office of Economic Revitalization
Sunset Ranch
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EXECUTIVE SUMMARY

In light of the increasing impacts of climate change and the recent experiences with the COVID-19 pandemic, communities around the world are looking for ways to strengthen their resilience. One approach being taken is through the creation of Resilience Hubs. Resilience Hubs are community-led, trusted gathering spaces that connect residents and serve their immediate or surrounding neighborhoods. Their functions vary depending on a community's needs while operating in both non-emergency (blue skies) and emergency (gray skies) scenarios.

Recognizing the need for greater community resilience, the City and County of Honolulu adopted the Ola Resilience Strategy (2019). The Strategy contains 44 actions to address future climate change impacts and resilience issues across Oʻahu. This project focused on Action 15: Develop a Network of Resilience Hubs islandwide. Objectives of the project were to 1) develop partnerships with community organizations and identify the level of community support for Resilience Hubs; 2) identify potential Resilience Hub locations across the eight regional planning areas; and 3) work with residents to determine programs, services and needs for Resilience Hubs.

To achieve these objectives, the City and County, in partnership with the University of Hawaiʻi, the Department of Urban and Regional Planning, and the Center for Resilient Neighborhoods (CERENE) at Kapi'olani Community College engaged over 3,000 residents during two project phases. This tremendous level of engagement was accomplished through an islandwide survey and participation in over 110 outreach events, including 16 project facilitated workshops. Throughout these efforts, preferred potential hub locations were identified by the community, and a list of tangible neighborhood-level next steps were generated. Most importantly, community members reported feeling more empowered to participate in resilience planning and a greater sense of community following the workshops.

This project is the first step in developing a network of Resilience Hubs across Oʻahu. Through strong community engagement and direction, a list of broader next steps and recommendations are provided to continue guiding the City and County, and communities on how to collaborate and build on this work. The recommended work areas include:

1. Hub Location and Infrastructure Development
2. Partnership Development
3. Hub Network Establishment and Support
4. Culturally Informed Practices, Integration, and Outreach
5. Blue Skies Capacity Building and Coordination
6. Gray Skies Disaster Planning and Preparedness
7. State and Regional Collaboration

He ʻaʻaliʻi kū makani mai au; ʻaʻohe makani nāna e kūlaʻi. ***I am a wind-resisting ʻaʻaliʻi; no gale can push me over*** **(ʻŌlelo Noʻeau 507).**

BACKGROUND

OVERVIEW

In 2019, the City and County of Honolulu ("City") adopted the Ola O'ahu Resilience Strategy ("Resilience Strategy"). The strategy contains 44 actions within four pillars to address future climate change impacts and resilience issues across the island of O'ahu. This project focuses on Action 15: Develop a Network of Resilience Hubs ("Action 15 Project"). The Action 15 Project is led by the City's Office of Climate Change, Sustainability, and Resiliency (CCSR) in collaboration with the University of Hawai'i, the Department of Urban and Regional Planning (UH DURP), and the Center for Resilient Neighborhoods (CERENE) at Kapi'olani Community College.

Introduction to Community Resilience and the Action 15 Project

With a growing concern about climate change impacts and the continuing effects of the COVID-19 pandemic, communities around the world are focused on how to improve their resilience to a variety of shocks and stressors. One approach being taken is through Resilience Hubs. Resilience and community resilience can mean many different things, depending on who you ask. To ensure a shared understanding of the word "resilience" throughout the Action 15 Project, the Resilience Strategy's formal definition was used. It defines resilience as "the ability to survive, adapt, and thrive regardless of what shocks or stresses come our way."

Resilience Hubs (referred to as "Hubs") are community-led and operated initiatives. Often, they are based on existing, trusted organizations in community-based facilities that provide support to their local community year-round. Depending on the community, they can be a pop-up aid distribution center or a group of people who meet regularly to support services and programs. They can also be a "precovery-pod" [1] filled with non-perishable food and medicines. Or a physical structure like an existing building (Figure 1). Government agencies, universities, private businesses, and philanthropies often collaborate with or support Resilience Hubs and their functions.

Generally, Resilience Hubs can be thought of as trusted gathering places to connect residents and serve the immediate or surrounding neighborhoods. Because Hubs operate year-round, they must be placed where they can provide services to community members. Their functions can vary depending on a community's needs while operating in both non-emergency (blue skies) and emergency (gray skies) scenarios (see Figure 1). Blue Sky functions might include providing charging stations for devices, community programming (e.g., first aid, CPR, and preparedness classes), food distribution, capacity building, workforce development training, daycare programs, or community gardens. Gray Sky functions might include acting as a distribution point for emergency supplies, serving as a trusted source for information, and providing temporary sheltering.

[1] A precovery-pod is a structure containing non-perishable stores of food that can be available during disasters to support community resilience around food security. An example of this on O'ahu can be found at the Wai'anae Coast Comprehensive Health Center. Their precovery-pod was created in collaboration with the Hawai'i Foodservice Alliance in 2022.

Not all Hubs will provide the same level of functions since these will vary depending on the community's needs. Some Hubs may operate at a more basic level of service like precovery-pods. Others may be buildings designed to withstand hurricane-level winds with microgrid power in place (Figure 1). Some may be located in an area at risk of flooding but operate as a cooling center or food distribution site during blue skies. The flexibility and scale of Hub functions and services provided allows them to meet the community where they are.

Examples of Resilience Hubs and Functions

Examples of Resilience Hubs can be found nationwide in Seattle, Baltimore, Miami, San Francisco, Washington, D.C., and Hawai'i Island. Resilience Hubs in Seattle are primarily run by volunteers and consist of separate neighborhoods networked together to collect information on local needs and create opportunities to be resilient after major disasters. Hubs in Baltimore are coordinated by the City and are made up of 15 non-profit organizations that focus on vulnerable neighbors. In San Francisco, Hubs are run by residents, neighborhood associations, nonprofits, and faith-based organizations. On Hawai'i Island, the non-profit organization Vibrant Hawai'i is leading the state on ways Resilience Hubs could operate here (See box text for further description).

Vibrant Hawai'i Community Resilience Hubs Example

Vibrant Hawai'i is an example of a mature Hawai'i-specific Resilience Hub network that has developed on Hawai'i Island. Vibrant Hawai'i formed in 2018 in response to the Kīlauea volcanic eruption. They focused on supporting existing community-based organizations that were active in providing community services following the eruption and then expanded their network during the COVID-19 pandemic. They used the Federal Emergency Management Administration's Threat and Hazard Identification and Risk Assessment process to formalize and grow their network of 38 Hubs. Vibrant Hawai'i has two types of Hubs: Hubs of people (volunteer groups) called Kahua Hubs and Hubs that are physical buildings called Kaiāulu Hubs. Each level of Hub operation has different expectations for capacity, support, communication, operations, and training for their Hub members.

Vibrant Hawai'i is in the process of creating a community resilience plan for the island. They coordinate closely with the Hawai'i County Civil Defense Agency as a developed Hub network. They not only have a strategic plan for communication during emergency events, they provide training for all Hub members so they are prepared to engage during a disaster. Learn more at https://www.vibranthawaii.org/Hubs.

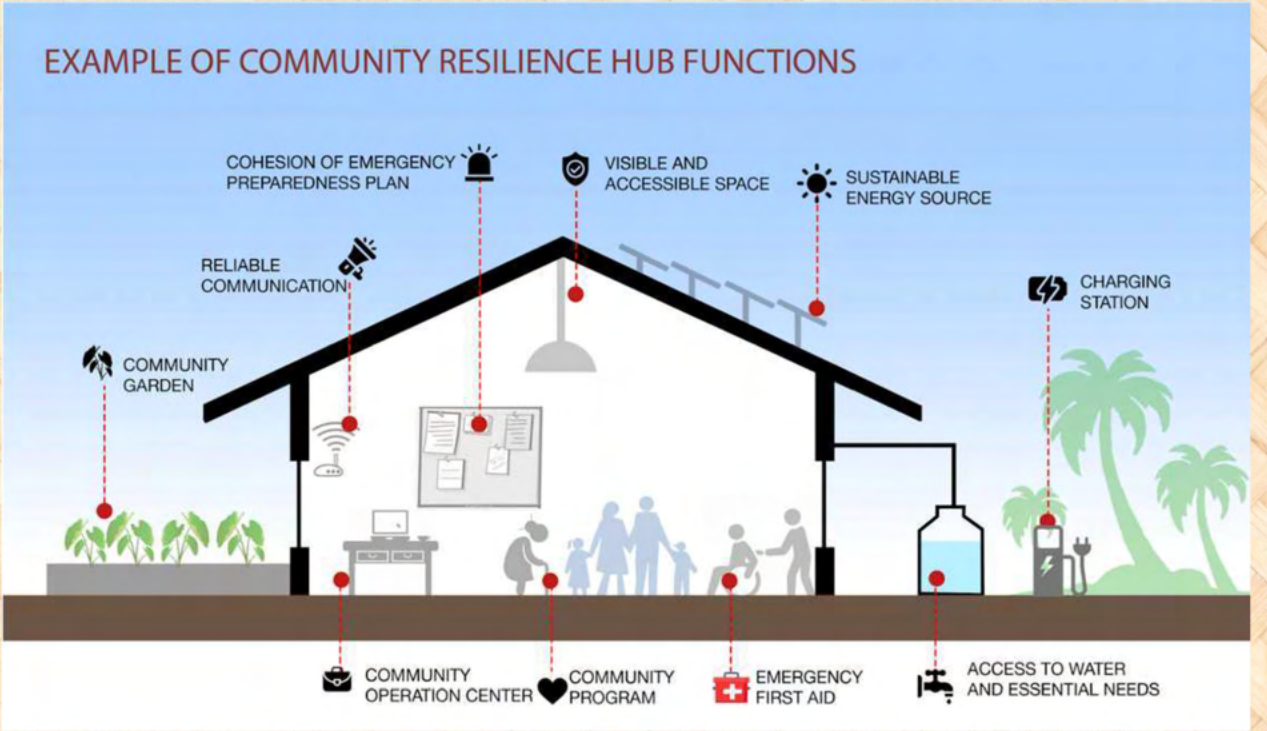

Figure 1. *Example of Community Resilience Hub functions. Hubs provide many different services depending on their level of function and community needs.*

PROJECT DESCRIPTION AND GOALS

Developing a network of Resilience Hubs across O'ahu was identified as Action 15 in the Resilience Strategy. The Action 15 Project is the first step in implementing this action and was focused on three key objectives:

1. Developing partnerships with community organizations and identifying levels of community support
2. Identifying locations that could potentially serve as Resilience Hubs in each of the eight regional planning areas (see Figure 2)
3. Working with community members to identify programs, services, and needs at potential Hub sites to improve resilience, including general cost estimates

For the Action 15 Project, Resilience Hubs were initially defined as "community-led or operated physical spaces (usually an existing building) that support community resilience in emergency and non-emergency situations." The Project envisioned them being supported by government agencies, private institutions or companies, universities, and non-profit organizations. Their purpose is meant to be supportive and supplemental to the Department of Emergency Management's designated shelter system. Still, providing temporary sheltering, child and elderly care may be a function of the Resilience Hub, depending on the site. However, as the Project progressed, a new community-driven definition of Resilience Hubs emerged. See the Discussions and Next Steps section for more details.

To achieve the objectives, the Project was completed over two phases: Phase I, an Islandwide Survey and Suitability Analysis; and Phase II, community engagement workshops, focus groups, and follow-up interviews.

Phase I was led by the UH DURP and focused on initial community pre-engagement. It included a series of meetings with various neighborhood boards to introduce the project and invite feedback and participation (Step 1 in Figure 3). Phase I also included an islandwide survey. The survey was used to understand residents' perceptions of Resilience Hubs, identify potential facilities and organizations that could support Hub development, and identify existing and future community resources (Step 2). The survey findings were used to inform a site suitability analysis conducted to determine the potential strengths and weaknesses of potential Hub sites.

Phase II of the Project was led by CERENE and focused on direct community engagement, workshops, focus groups, and feedback rounds at the neighborhood level in each regional planning area. Workshops were conducted from September 2022 through May 2023, with further rounds of feedback from community leaders in June (Step 6). Throughout Phases I and II of the Project, over 3,000 residents were engaged through the survey and over 100 outreach events and workshops. Phase I and Phase II are described in greater detail in the subsequent sections.

Phase 1 began in January 2022 with community pre-engagement. The project team participated in neighborhood board meetings by working with neighborhood board chairs and contacting community leaders with news of the upcoming study and islandwide survey distribution.

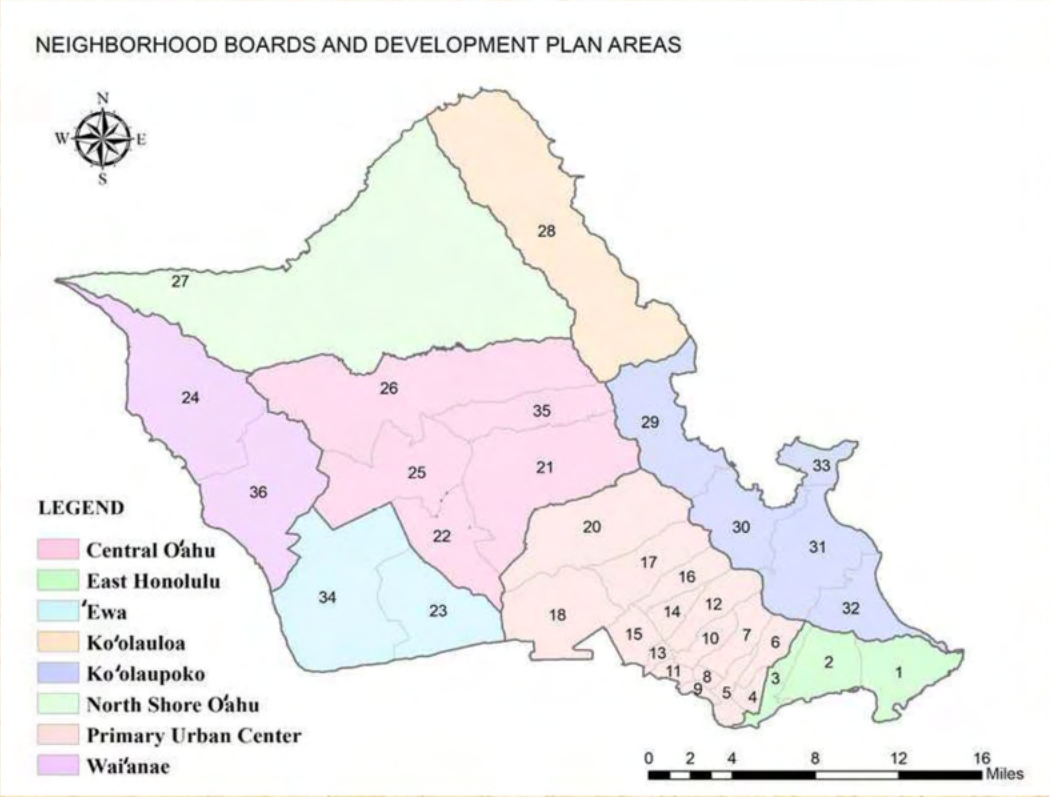

Figure 2. *Neighborhood Boards located within each of the eight planning regions on O'ahu.*

PHASE I - ISLANDWIDE SURVEY AND SUITABILITY ANALYSIS

In Step 2, an islandwide online survey was administered to gain an understanding of people's perceptions of and the level of support for Resilience Hubs. The survey helped identify and create a baseline understanding of potential partner organizations, areas of concern, and preferred locations in the eight planning regions across O'ahu. The survey consisted of multiple-choice, rating, and open-ended questions. A copy of the survey questions can be found in the Survey Analysis Report (Appendix A).

Figure 3: *Project timeline and phases.*

The survey was administered at two points in time. Survey responses from the first round of distributions were received between April 14th and June 15th, 2022. The second distribution of the survey took place during Phase II of the project, where community members were invited to complete the survey during the engagement workshops and project outreach events. A total of 896 survey responses were collected by April 10, 2023. However, it should be noted that only some participants answered every single question on the survey.

During the first distribution, 416 online surveys were completed due to the pre-engagement through all 33 Neighborhood Boards, over 50 different organizations, and three in-person community outreach events. Survey respondents provided recommendations for potential Resilience Hub locations, resulting in an initial list of 129 sites. This initial list was used to conduct a suitability analysis examining six broad criteria for identifying the most suitable locations for potential Resilience Hubs.

Criteria used in the suitability analysis included the level of community support, proximity to critical infrastructure, the level of hazard exposure, transportation access, social vulnerability, and proximity to hazardous waste areas. **Community support** was identified through community member feedback shared through the Island-wide Survey. **Proximity to critical infrastructure** included the proximity of each location relative to medical services, evacuation shelters, childcare services, and other necessary facilities. **Hazard vulnerability** assessed exposure to hazards such as tsunamis, flooding, and hurricanes. **Transportation accessibility** considered the density of roads and bus stops around potential Hub sites. **Vulnerability** was based on the CDC Social Vulnerability Index measures to support the needs of the most vulnerable communities. **Hazardous Waste** areas included brownfield sites and other locations known to harbor hazardous waste or industrial activities. The analysis findings were then mapped with the initial 129 sites identified to visualize suitability of potential hub locations. See Appendix B for the complete list of data sources used in the suitability analysis.

Figure 4. *CERENE Resilience Corps Leader assisting in the Islandwide Action 15 Resilience Hubs Survey at the Kosrae Women's Day Celebration, 2022.*

The suitability maps produced were used during Phase II of the project to help community members discuss the Hub locations they most recommended and to aid in discussions of important criteria to consider for their communities. Maps were updated following the workshops to include additional recommended locations by community members. See Phase II—Community Engagement for more details on how the suitability maps were used during the workshops.

Figure 5. *Example of an O'ahu-scaled community support map with darker green areas to indicate greater support for Resilience Hubs. Lighter green areas indicate less support for Resilience Hubs.*

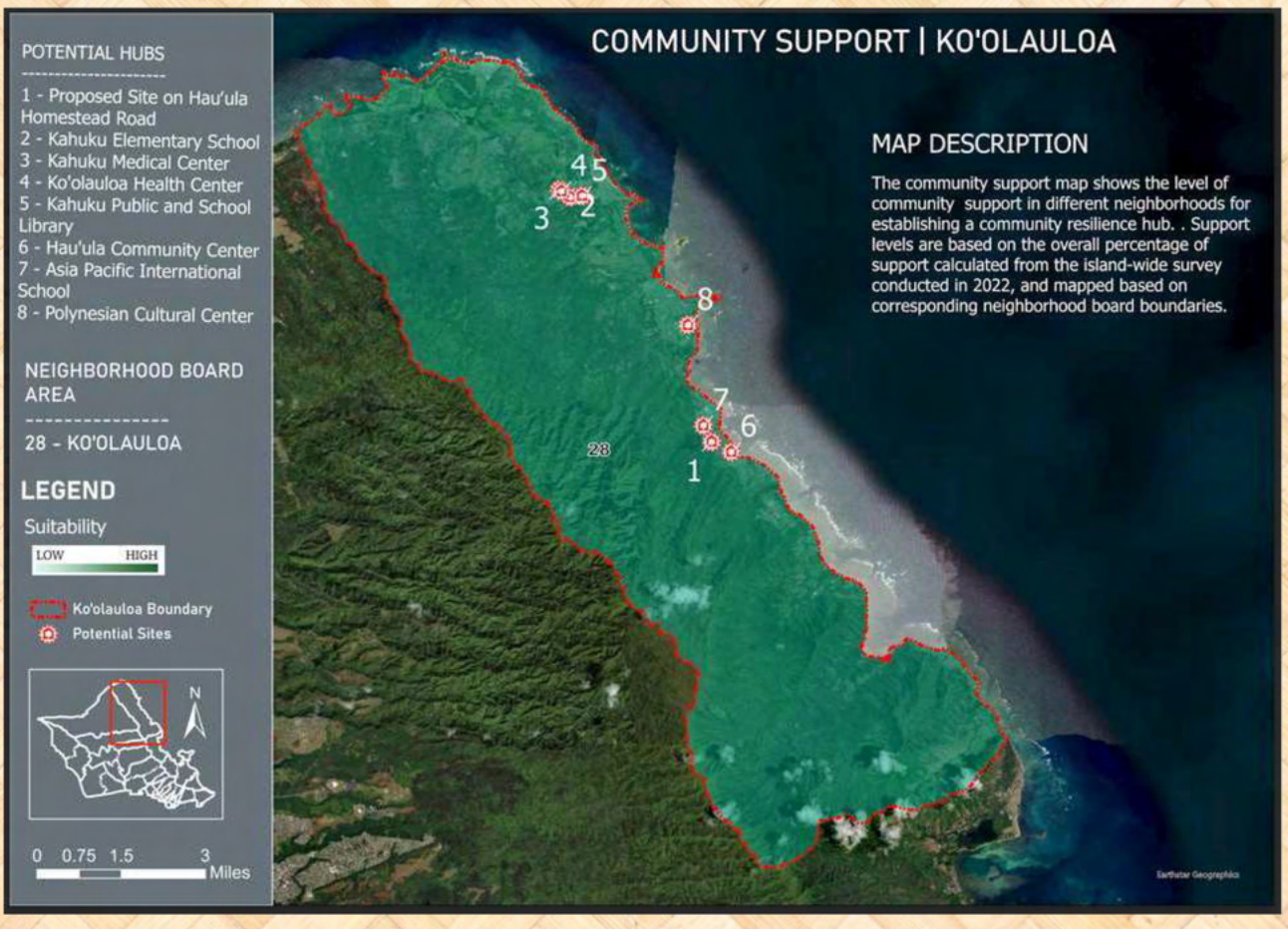

Figure 6. *Example of a community engagement planning regional-scale map used during Phase II. In this case, the whole region is strongly supportive of Resilience Hubs.*

ISLANDWIDE SURVEY KEY FINDINGS

Nearly half of the respondents have lived in their community for 20 years or longer, while the remainder have lived in their communities between 1-15 years. Overall, there was a balance of long-time and new residents. The survey also had a good representation of Native Hawaiians and other Pacific Islanders, as well as other vulnerable groups such as older adults and women (Figure 7).

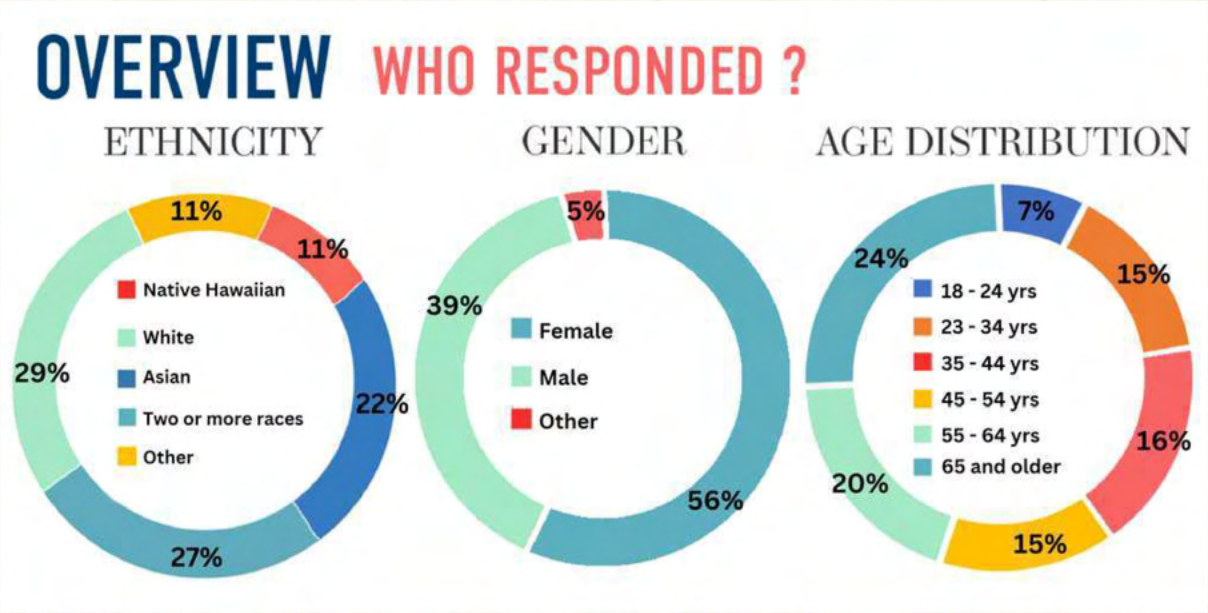

Figure 7. *Summary of survey respondent demographic information.*

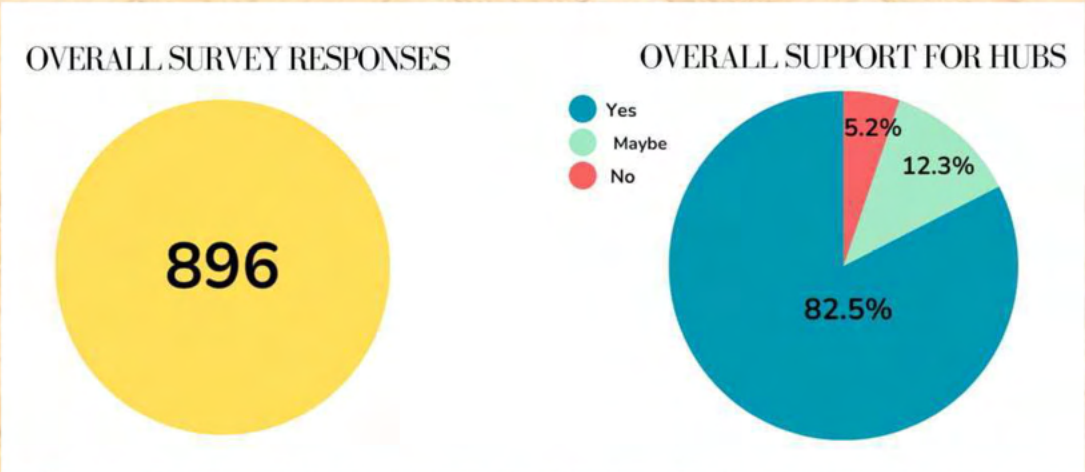

Figure 8. *Overall, the support rate for Resilience Hubs is, on average, 82.5% or higher across all development plan regions, with Ko'olauloa recording the highest support. Respondents ranked support for Resilience Hub operations during emergency situations slightly higher than during normal conditions.*

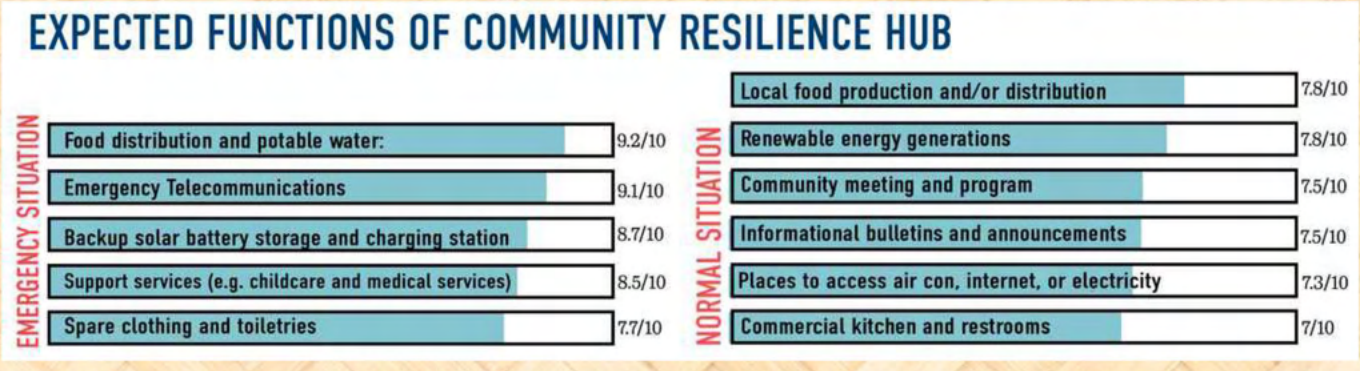

Figure 9. *Food distribution and emergency telecommunications were the top expected functions of Resilience Hubs during emergency operations in both rounds of the survey distribution.*

All eight regional planning areas indicated a Resilience Hub should serve local residents and those in need more than visitors or non-residents. A desire for balance between serving the most vulnerable and the general public was identified in most regions and through open-ended comments. Having the flexibility to adapt functions to changing needs is also preferred over a set of consistent functions.

PHASE II - COMMUNITY ENGAGEMENT WORKSHOPS

Phase II focused on direct community engagement through workshops, focus groups, and feedback rounds at the neighborhood level in each regional planning area. In support of the three project objectives, the community engagement process included both "outcome goals" and "process goals."

The outcome goals were to:

1. Evaluate potential Hub locations
2. Evaluate the suitability criteria developed in Phase I
3. Evaluate the critical services Hubs might provide
4. Provide recommendations for regional next steps and priorities

The process-related goals included:

1. Equitable, community-based, and inclusive process
2. Empowering community resilience and disaster preparedness
3. Providing education and support around Resilience Hub planning
4. Empowering students and cultivating leadership in STEM / Social Science
5. Generating social capital and a "sense of community"
6. Supporting intergenerational learning and exchange
7. Developing enduring partnerships

A total of approximately 3,260 participants were engaged throughout Phase II of the project. Several types of engagement were used to support an equitable and engaged community process. This consisted of participation in over 112 events, including neighborhood board meetings, meeting with key community stakeholders and neighborhood leaders, and hosting 21 workshops, focus groups, and follow-up discussions with regional partners. (Figure 11) Additional outreach events included attending and presenting at community meetings, festivals, fairs and hosting Zoom webinars.

As shown in Figure 10, engagement began with neighborhood boards and existing networks of colleagues and community leaders (Circle A) and then extended to community preparedness stakeholders (Circle B). Connections with highly recommended locations happened organically. Next steps may expand on Circle C by engaging highly recommended locations not already included in the workshops and reaching out to nonprofits and small business owners engaged in economic resilience.

Figure 10. *Approach to Partnership Building and community engagement.*

Workshops were conducted from October 2022 through May 2023, with further rounds of feedback from community leaders in June 2023. A total of four workshops were conducted focused specifically on vulnerable and at-risk neighbors. Three were held in person, and one was held virtually via Zoom. Nine regional planning workshops were conducted. Six were held in person, and three were held virtually due to scheduling needs and to support additional accessibility for those maintaining social distancing protocols. An additional virtual event was held for broader island wide community engagement. In addition to the workshops, two focus groups were conducted to discuss the next steps, costs, and priorities for retrofitting community-recommended Hub locations (see Appendix C for more details on the focus groups).

At each workshop, a short presentation was given to provide an overview of the Action 15 Project, present the Resilience Hub concept, and educate about the suitability analysis maps. After the presentation, participants spent the majority of time in their small group discussions, directing questions to the table facilitators.

Workshops focused on vulnerable and at-risk neighbors were designed to support discussions around Hub planning, specifically addressing the needs and interests of Kūpuna (seniors), persons with disabilities, the homeless and houseless community, people with limited use of English, at-risk youth, low-income community members, Hawai'i and Pacific Islander communities, and other vulnerable populations. Workshops were open to all O'ahu residents and especially to stakeholders and community members active in supporting these groups.

Community Engagement Event Type	Total Events	Total Number of Participants
Outreach and Engagement Events	74	2,506
Community Leaders & Stakeholder Meetings	17	104
Workshops, Focus Groups and Regional Partner Follow Ups	21	648
Total	**112**	**3,258**

Figure 11. *Community engagement summary.*

The regional planning workshops were designed to be place-specific using hard copy maps (found in Appendix E), with a focus on neighborhoods and commonly referenced areas for local residents. Participants who actively lived or worked in the workshop region were invited to participate. Follow-up interviews with regional partners took place on Zoom and were conducted to ensure the accuracy of the regional workshop findings and develop further ideas for next steps. For a complete list of workshops and focus groups, see Appendix F.

Participation in the workshops, focus groups, and follow-up interviews ranged from 4 to 76 participants, depending on the event. The average workshop size was 30 people. A core goal of the Phase II project team was to design the engagement process to be as community-based as possible, with the aim of developing strong and enduring partnerships with our community leaders and neighborhood residents.

Regional community partners who worked closely with and were supported by CERENE cataloged and identified the workshop venues and initial invitation lists. Promotions for the workshops, including over 70 other outreach events during Phase II, were completed by CERENE and shared with CCSR and neighborhood board chairs.

Existing networks of first responders and community resilience leaders, notably the Cross Island Community Resilience Network (CICRN), were also contacted and invited to participate. Relationship building went well beyond a single invitation and extended to making presentations with partner organizations and other potential collaborators.

Workshop Facilitation: Tabletop Activities

The primary approach to workshop facilitation was through tabletop activities. In-person workshops were set up with tables for each neighborhood in the planning area based on feedback from regional partners and workshop participants. The group size at each table ranged from 3 participants to up to 10 participants. During virtual workshops, participants were separated into breakout rooms for tabletop activities.

CERENE Resilience Corps Leaders [2] (RCLs) facilitated tabletop activities designed to be a supportive, open, and friendly space for sharing, brainstorming, and co-learning. Icebreaker activities were included, and talk-story was encouraged to support table groups getting to know each other and their neighbors. With youth in the facilitation role, the space was welcoming for intergenerational knowledge exchange. The RCLs guided participants through four activities: dot voting, location ranking, building function ranking, and a discussion of next steps and priorities. Each activity is described below in further detail.

Figure 12.
Intergenerational learning, discussion, and planning at the Wai'anae Regional Workshop held at the Wai'anae Coast Comprehensive Health Center, May 2023.

[2] The Resilience Corps Leadership Award Program is a leadership training program combined with a community-based service award which prepares students to take on the role of resilience leaders in the campus and broader community. These students represent the next generation of sustainability and resilience researchers, professionals, educators and neighborhood residents.

Figure 13. *Example of Dot Voting Activity: Tables took turns voting on their most recommended Hub locations, adding new locations, and correcting previously listed locations. Dot voting helped provide an overall snapshot of the region, but it also helped jumpstart discussions about trade-offs and different considerations regarding the suitability of Hub locations.*

Dot Voting Activity

In the dot-voting activity, participants were invited to select one primary and one secondary potential Hub location and indicate their selection by placing a dot sticker on the region's map (Figure 13). Participants were also encouraged to write down additional locations not on the original list. They were then asked to look for any inaccuracies and make corrections to "ground the truth" concerning the existing points provided by the survey. The dot voting activity was used to gain a region-level snapshot of the most recommended locations. Additionally, the activity invited individual reflection about trade-offs considering the suitability criterion.

Location Ranking Activity

In the location ranking activity, participants were given the suitability maps to consider in determining the strengths and weaknesses of potential Hub locations. Community members were asked to select one location to discuss together as a table following the dot voting activity. Once a location was determined, participants spent time discussing and determining a group ranking of the resilience support systems surrounding the Hub. Local knowledge and experience were critical for meaningful discussion by providing detailed descriptions of the surrounding area and site strengths and weaknesses. This activity was also important for catching any map inaccuracies and making survey suggestions. Table facilitators marked the group's rankings on a handout. See Appendix G to view the original workshop handouts.

Figure 14. *Community members are seen here deep in thought, discussing location rankings for the Pūpūkea and Sunset Neighborhoods on the North Shore.*

Building Functions Ranking Activity

Following the location ranking activity, workshop participants were asked to evaluate and rank the resilience of systems and building operations for their preferred site in blue skies and gray skies (non-emergency and emergency times). Hub ranking was based on a scale of 1–5, with five being ranked as excellent performance or operations capacity and one being poor performance or operations capacity (See Appendix G for a handout example). Facilitators guided the tables in discussing the following criteria and developing a rank as a group for each of the following:

- Community programs
- Visibility within the community and accessible spaces
- Availability of emergency first aid
- Sustainable energy sources
- Access to water and essential needs
- Hazard mitigation and emergency planning support
- Capacity to act as a center for hazard mitigation and response
- Reliability of communication systems
- Community gardens onsite and food hub support
- Electronic device charging stations (cell phones, medical equipment)
- Ability to host a microgrid system*
- Waste system capacity*

* *Bullet-point items with an asterisk were added mid-way through the workshop series based on participant feedback on the need to include them*

Figure 15. *Community members are leaning into the tabletop discussion and sharing some smiles. Workshops were designed to invite in-depth discussion, deep thinking, and consideration of real threats and vulnerabilities to the local area while also creating opportunities for fun, story-telling, and neighborly connection.*

Next Steps and Table Room Reports

In the last activity, participants were invited to brainstorm and list the next steps for resilience planning. Facilitators gave very open-ended prompts so participants could focus on areas most relevant to them, whether it was region-level planning, planning for individual community members, or planning for their specific organization. Community members were encouraged to co-present with an RCL the next steps listed in the room. Each table had a chance to share the next steps, so all workshop participants were able to hear key takeaways from each of the other tables.

Figure 16. *Community member with RCL tabletop facilitator enthusiastically sharing next steps for the Wai'anae Region.*

Community-based Approach and Feedback

Throughout the project, an emphasis was placed on a community-based and community-guided process, data sovereignty, and the honoring of diverse values and voices. Building enduring partnerships has been key to this approach. The project team strove to meet partners in person where possible, volunteer at partner events, and develop genuine relationships with regional partners.

Follow-up interviews with community partners were also important. They helped establish partnership roles, determine community-owned data ownership and management, identify the primary public point of contact for data requests and other inquiries, and clarify communication for future collaboration. Additionally, community partners were invited to review the report's findings before publication for a final round of feedback.

Co-learning has been emphasized throughout the project to support an iterative process of receiving feedback, adjusting workshop designs and project reports to incorporate community voices, and letting the community lead as much as possible. In turn, organic collaboration and novel outreach events have yielded new understandings of community resilience that otherwise wouldn't have been possible. See the Kaimukī Middle School example Hub model in text box below.

Kaimukī Middle School Example Hub Model

Kaimukī Middle School Students tackled the challenge of thinking about designing for climate and Resilience Hubs through their STEM coursework with intrepid instructor Lianna Lam. Students created hand-drawn, digital, and 3D versions of community resilience, helping us realize that Hubs can come in many shapes and sizes. We learned from them our motto, "Big and small, we need them all!"

COMMUNITY ENGAGEMENT FINDINGS

A total of 14 workshops and 2 focus groups were hosted in-person and virtually from October 2022 through May 2023 in each of the sustainable planning regions across O'ahu. A general summary is provided below for each workshop and focus group. The findings presented here represent the community's perceived priorities, needs and next steps as reported by workshop attendees.

Figure 17. *Group photo at the Waikīkī Community Center, 2022.*

VULNERABLE COMMUNITIES

A total of four workshops focusing on vulnerable communities and at-risk neighbors were conducted prior to beginning the place-specific regional workshops. Three were conducted in person, and one was conducted virtually online through Zoom. Two in-person workshops were held at the Waikīkī Community Center and the third was held at Kalihi Union Church. The first was held on September 21st, 2022, and the second on October 20th, 2022. The workshops used Waikīkī as an example region to stimulate discussions regarding residents who might be disproportionately impacted by natural disasters. The first workshop focused on all vulnerable community members as a topic and had 76 participants. Upon encouragement from our hosts, a second in-person workshop was designed specifically to focus on kūpuna and older adult resilience and had 26 participants. The third in person workshop was held on October 27th, 2022 and focused on Pacific Islander faith based communities hosting 26 participants at Kalihi Union Church. The Zoom workshop focused on all at-risk neighbors and was conducted on October 12th, 2022 with 78 participants.

Several issues emerged in considering vulnerable populations and Resilience Hub location and functioning across all three workshops. These issues included mobility, energy resilience, technology and language barriers, mental health care, and supporting houseless populations.

Figure 18. *Group photo at the Kalihi Union Church, October 2022.*

Addressing these challenges is crucial to ensuring the resilience and well-being of vulnerable community members before and during times of crisis. The following list provides potential next steps and priorities as perceived by the community and identified during the vulnerable community workshops to begin addressing these challenges:

- Improve Community Networks and Partnerships: Emphasizing the importance of building strong community networks and partnerships during blue skies for effective disaster response, with a focus on unity and collaboration to become "STRONGER TOGETHER."

- Support Hubs for Vulnerable Neighbors: Creating and maintaining Hubs specifically tailored to meet the needs of vulnerable neighbors, ensuring they receive adequate support and assistance during crises. This could include expanding resources to help the houseless population or offering transportation to Hubs during or after disasters.

- Invest in Energy Resilience: Strengthening energy resilience measures to ensure the continuous availability of vital services for vulnerable populations, including refrigeration for medicines and electricity for medical equipment.

- Improve Technology Access and Digital Literacy: Enhancing access to technology and implementing digital literacy programs, especially targeting older individuals and non-tech-literate communities, to keep them informed and connected before and during emergencies.

- Support the Empowerment of Faith-Based Communities: Recognizing faith-based communities, particularly churches, as essential support networks and communication channels before and during disasters and empowering them to play a crucial role in disaster response. Additionally, faith-based communities can develop comprehensive contact lists, communication plans, and multilingual information-spreading strategies. This includes establishing interpreter services and translation-capable telecommunications for non-English speakers.

- Providing mental health support and grief and trauma counseling for vulnerable or at-risk neighbors.

See Appendix D for a supplementary list of themes regarding next steps and challenges for vulnerable communities and at-risk neighbors.

NORTH SHORE

The North Shore community engagement workshop was held at Waialua High and Intermediate School on February 22, 2023. It was co-hosted by Neighborhood Board #27 (The North Shore Neighborhood Board) and the Waialua Community Association, with 39 participants attending. This workshop consisted of five tabletop discussions representing the neighborhoods and communities of Waimea, Waialua, Mokulēʻia, Wahiawā [3] , Pūpūkea, Sunset Beach, and Haleʻiwa. A total of 17 potential Resilience Hub locations were recommended following the workshop. Nine potential Hub sites were identified in the site suitability analysis, and eight additional locations [4] were identified during the workshop (see locations 10–15), as shown in Figure 19.

The tables discussed the challenges of finding suitable space on the North Shore due to its abundant open areas and lack of infrastructure. They suggested focusing on mauka valley areas rather than the makai coastal areas like Sunset Beach. The Old Sugar Mill area was mentioned as a potential location, considering its capacity and proximity to open spaces and stores. Also, discussions were raised about the possibility of a hub and spoke approach (with multiple hubs functioning as a network) making the most sense due to the geography of the region.

Figure 19. *Final Map of the potential Resilience Hub locations for the North Shore Regional Planning Area.*

[3] Several residents from Wahiawā attended this event. Findings from their table's discussion have been included with the Central O'ahu workshop results. [4] Locations 16 and 17 have not been included on the map. They include an area that was considered for a potential fire department in Waialua and a possible build site near Weed Circle.

Critical Support Services

Emergency & Non-Emergency Scenarios

Waialua High & Intermediate School

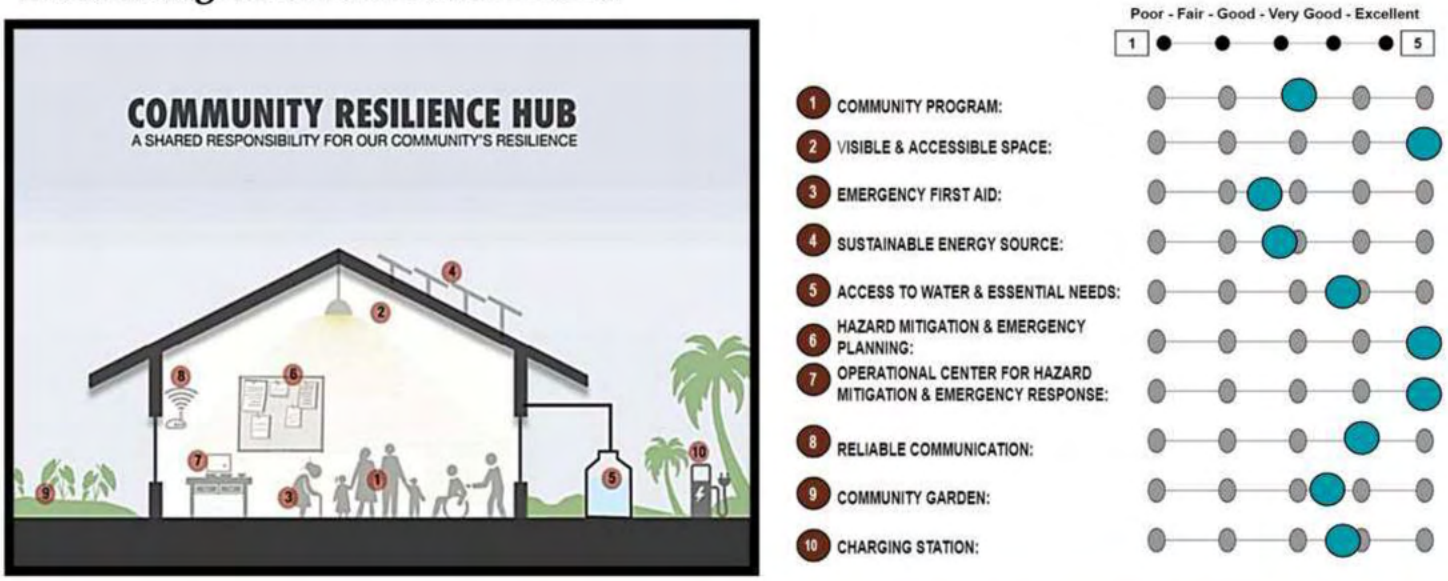

Figure 20. *Average Building-level Ranking of Critical Support Services for Waialua High & Intermediate School Proposed Hub Location. Two tables selected this location for the tabletop activity. See Appendix H for individual table ranking.*

Waialua High and Intermediate School was the top-recommended potential Hub location based on dot voting. This site received 10 out of 48 votes and was determined to be the preferred primary Hub site. The secondary location was a "network model" linking the Waialua United Church of Christ and the Waialua Community Association. The network model received a total of 7 dot votes out of 48.

During the workshop, two tables focused on Waialua High and Intermediate School to conduct Building Functions Ranking Activity, as shown in Figure 20. The centralized location of the school was emphasized, mentioning that it should be out of the major natural disaster zones while still being easily accessible to the communities it could serve. The location could also aim to connect with nearby partners and organizations (e.g., the Queen's Health Care Centers [5] and the Waialua Fire Station) to potentially provide additional functions during gray sky scenarios. There were discussions on whether the Hub's functions could be integrated into the school's curriculum, drawing on past experiences where school-aged children were well-informed about evacuations.

In follow-up discussions with community partners who hosted the workshop, additional considerations were raised for North Shore to increase their resilience as a whole. The main concerns from the community partners were collaboration with the Department of Education for resilience related curriculum and professional development, creating shelter and Hub networks, and creating a list of key contacts for the region to mobilize community members. A list of additional locations was also submitted in the follow-up discussions and may be considered in future recommendations for Hubs sites in the next iteration of the project.

[5] Community members noted though Queen's Health Care does provide health care services, it does not operate as a General Hospital.

The main themes discussed regarding next steps and priorities for strengthening North Shore's regional resilience as perceived by the community and identified in workshop and follow-up discussions include:

- Hub location engagement and collaboration
- Forging partnerships and providing training
- Encouraging community involvement through education
- Acquiring necessary infrastructure and resources
- Conducting emergency preparedness and hazard assessments
- Implementing energy solutions and communication improvements
- Establishing partnerships and shelter agreements
- Fostering expert involvement in decision-making for effective planning

For the complete list of over 34 next steps identified by neighborhoods in the North Shore Region, see Appendix I.

Figure 21. *Group photo taken at the Waialua High & Intermediate School, February 22, 2023.*

KO'OLAUPOKO

The Ko'olaupoko workshop was held at The Kualoa-He'eia Ecumenical Youth (KEY) Project on December 1, 2022. It was hosted by The KEY Project staff, with 38 participants attending. This workshop consisted of five [6] tabletop discussions representing the neighborhoods Kahalu'u, Kāne'ohe, Waimānalo, and Kailua. A total of 20 potential Resilience Hub locations were recommended following the workshop. Eighteen potential Hub sites were identified in the site suitability analysis, and two additional locations were identified during the workshop (locations 19–20), as shown in Figure 22.

The tables discussed the challenges of finding a suitable location for Hubs in the Ko'olaupoko region. They discussed transportation vulnerability as a chief concern and that the site chosen needed to be centrally accessible to the community most at risk from flooding and transportation cut off on roads and bridges along the coast. Ideally, the most recommended site would also have the potential to become a network with other facilities and resource centers nearby.

[6] There were two tables representing the same neighborhood. This happened at several workshops where there were more participants from certain neighborhoods attending.

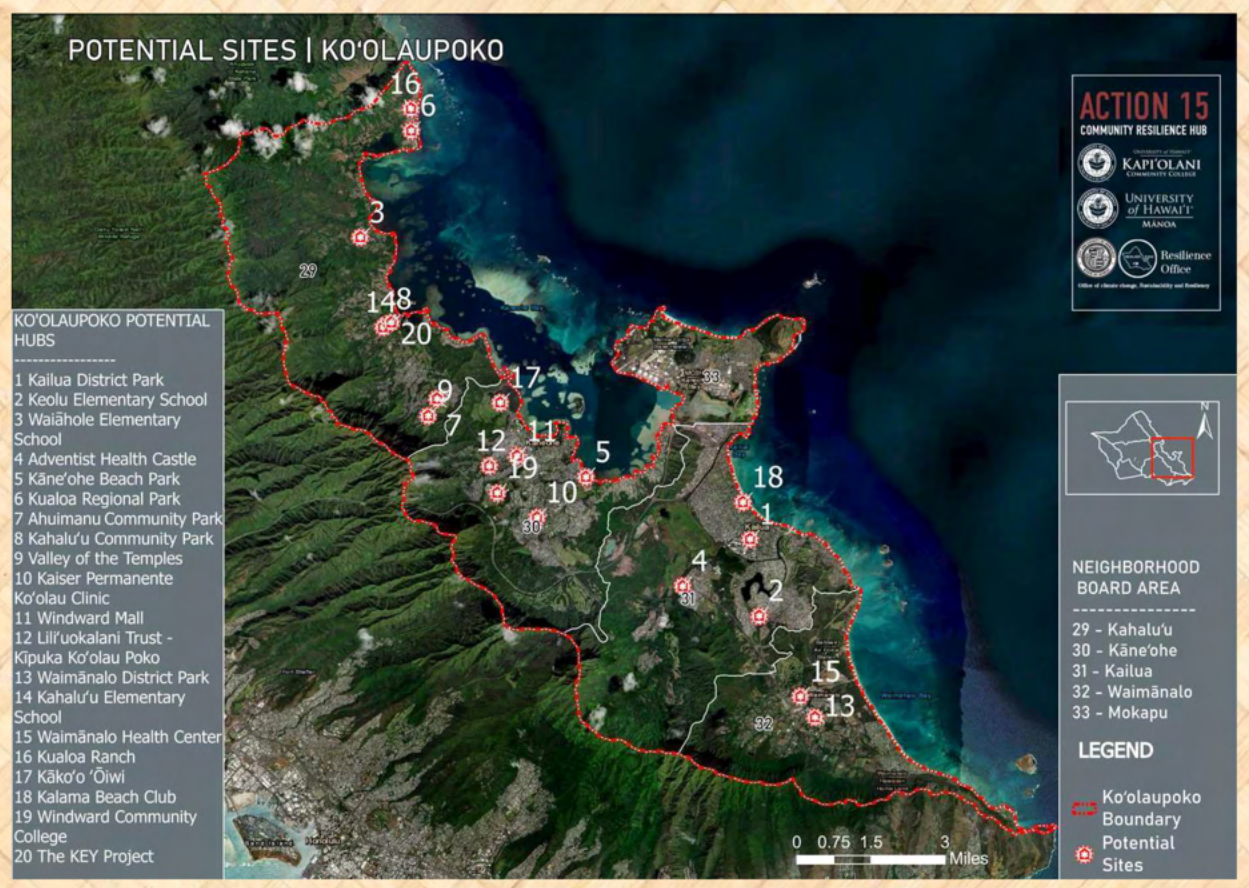

Figure 22. *Final Map of the potential Resilience Hub locations for the Ko'olaupoko Regional Planning Area.*

KEY Project was the top-recommended potential Hub location based on dot voting. This site received 15 out of 51 votes and was determined to be the preferred primary Hub site. The second location determined was Kailua District Park, which received a total of 9 dot votes out of 51.

During the workshop, one table focused on KEY Project for the Building Functions Ranking Activity, as shown in Figure 23. KEY Project is located outside of some of the natural disaster hazard zones and is located in an area in which a Hub network could be created in close proximity to the district park and elementary school. Discussion across tables at the workshop focused on the concern that two Hubs for the whole region were insufficient to service the communities often at risk for flooding and being in coastal tsunami zones. However, KEY Project could be a main Hub or the center of a Hub network for the Kahalu'u community and surrounding areas.

In follow-up discussions with community partners who hosted the workshop, additional considerations were raised to increase Ko'olaupoko's resilience as a whole. Community partners expressed an immediate need for the renovation of infrastructure of bridged access areas, more collaboration with state and local organizations, and having an Energy Transition Initiative Partnership Program (ETIPP) infrastructure assessment completed for KEY Project. They also emphasized that Windward communities are often isolated from each other during flooding events and noted this as a central concern.

Partners also expressed that KEY Project is interested in coordinating a collaborative effort with Kahalu'u elementary school, fire station, district park and other community organizations located in the immediate area along Waihe'e Road. There was also the suggestion that communities could share resources and possibly collaborate with the Kahalu'u Civic Center.

Figure 23. *Ranking of Building-Level Critical Support Services for KEY Project.*

The main themes discussed regarding next steps and priorities for strengthening Ko'olaupoko's regional resilience as perceived by the community and identified in workshop and follow-up discussions include:

- Hub Location Identification and Engagement
- Partnerships and Training
- Community Support and Food Resources
- Communication and Infrastructure Improvement
- Disaster Response and Medical Support
- Addressing Needs of Vulnerable Community Members

For the complete list of over 44 next steps identified by neighborhoods in the Ko'olaupoko Region, see Appendix I.

Figure 24. *Group photo taken at the KEY Project workshop, December 1, 2022.*

KO'OLAULOA

The Ko'olauloa workshop was held at the Hau'ula Community Association / Hui O Hau'ula on December 7, 2022. It was hosted by Hui O Hau'ula with 37 participants attending. This workshop consisted of 4 tabletop discussions representing the neighborhoods Hau'ula, Punalu'u, and others from the general Ko'olauloa region. A total of 9 Resilience Hub locations were recommended following the workshop. Six potential Hub sites were identified in the site suitability analysis, and three additional locations were identified during the workshop (locations 7- 8) as shown in Figure 25. Location 9 was not included on the map as it had no address. This suggestion was referring to a possible build site in the Kahuku region.

The tables initially struggled to identify alternative Hub locations because, unlike other regions in O'ahu, many community members in Ko'olauloa had been part of ongoing planning conversations regarding the proposed site on Hau'ula Homestead Road. There was some brainstorming of secondary locations, but in the end, all the tables independently chose the Hau'ula Homestead Road location to discuss.

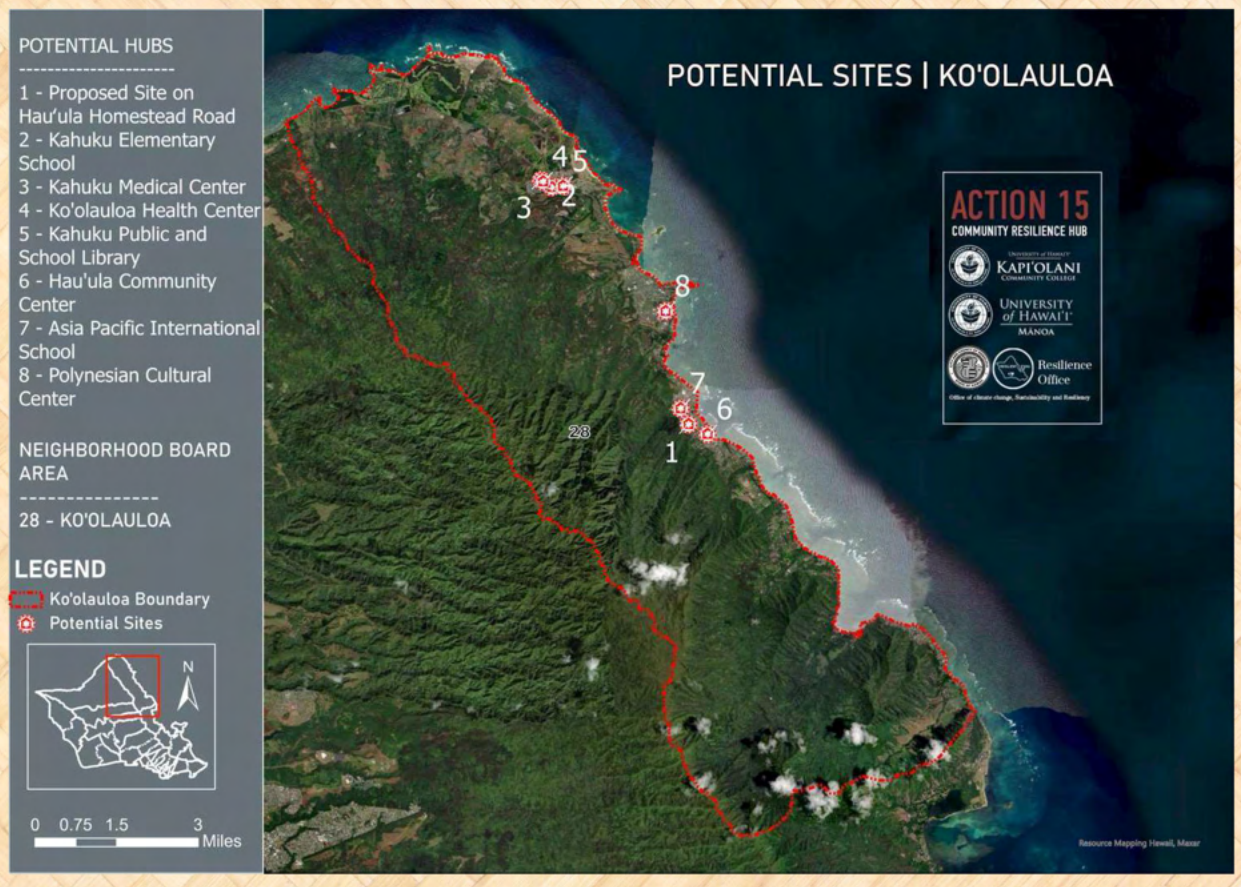

Figure 25. *Final Map of the potential Resilience Hub locations for the Ko'olauloa Regional Planning Area*

The Proposed Site on Hau'ula Homestead Road was the top recommended potential Hub location based on dot voting. This site received 19 out of 26 votes and was determined to be the preferred primary Hub site. The secondary location determined was Kahuku Medical Center which received a total of 4 dot votes out of 26.

During the workshop, all four tables focused on the Proposed Site on Hau'ula Homestead Road (Hau'ula Resilience Hub) to conduct Building Functions Ranking Activity, as shown in Figure 26. The location is outside most of the natural disaster zones and would function like a community center in blue skies and a fully functioning shelter in gray skies.

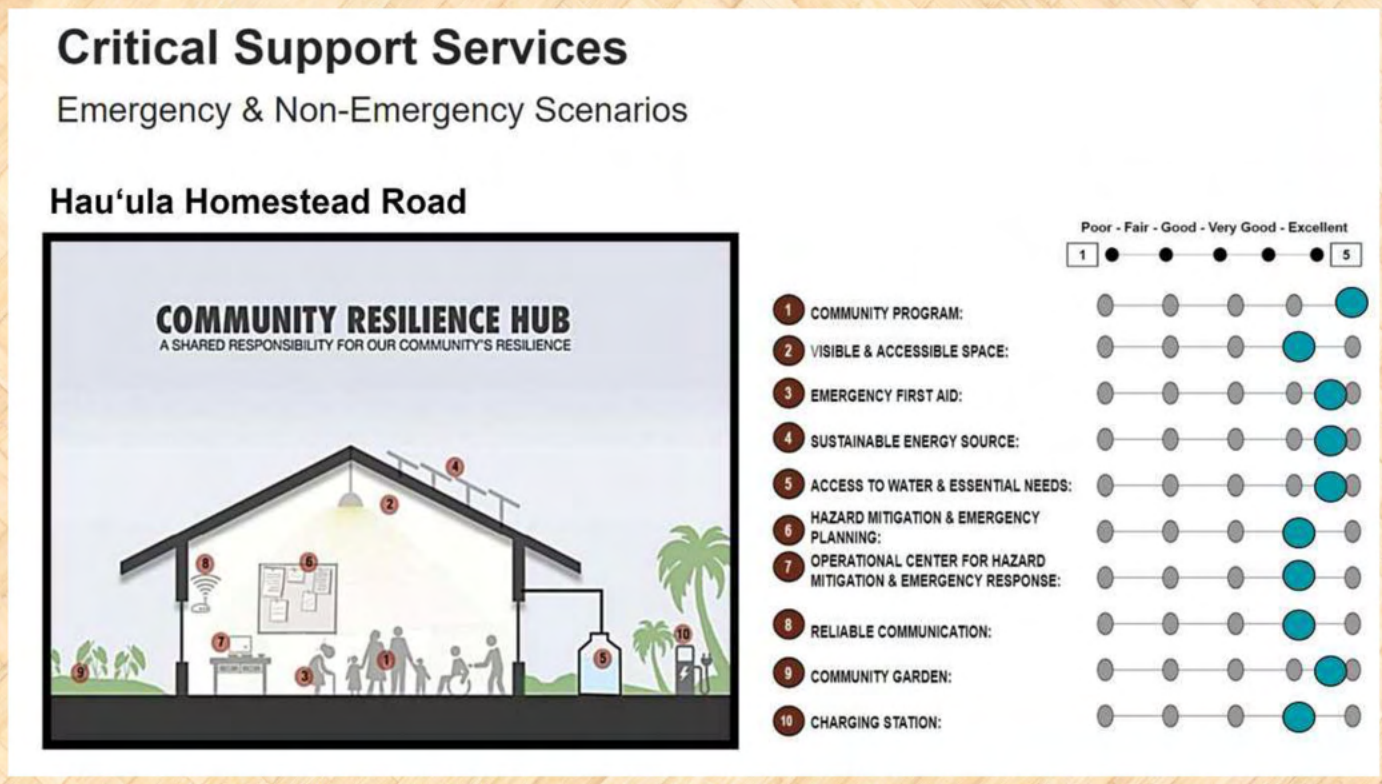

Figure 26. *Average Building-level Ranking of Critical Support Services for Hau'ula Homestead Road Proposed Hub Location. Four tables selected this location for the tabletop activity.*

In follow-up discussions with community partners who hosted the workshop, additional considerations were raised for Ko'olauloa to increase their resilience as a whole. Community partners expressed that the priority action item for them is gaining funding and support for the proposed site on Hau'ula Homestead Road to reduce their risk from future natural disasters.

The main themes discussed regarding next steps and priorities for strengthening Ko'olauloa's regional resilience as perceived by the community and identified in workshop and follow-up discussions include:

- Resilience Hub Establishment
- Disaster Preparedness and Training
- Community Engagement and Education
- Infrastructure and Emergency Response
- Community Concerns and Funding

For the complete list of over 46 next steps identified by neighborhoods in the Ko'olauloa Region, see Appendix I.

Figure 27. *Group photo taken at the Hau'ula Community Association December 7,2022.*

EAST HONOLULU

The East Honolulu workshop was held at the Wailupe Community Park February 15, 2023. It was co-hosted by ʻĀina Haina Prepared, Hawaiʻi Kai Strong, and CICRN with 37 participants attending. This workshop consisted of 5 tabletop discussions representing neighborhoods Kuliʻouʻou, Kalani ʻIki, ʻĀina Haina, and Hawaiʻi Kai. A total of 20 Resilience Hub locations were recommended following the workshop. Twelve potential Hub sites were identified in the site suitability analysis, and eight additional locations were identified during the workshop (locations 13-20) as shown in Figure 28.

The tables discussed the challenges of finding a suitable location for Hubs in East Honolulu, stating that many of the proposed sites were in hazard zones, on private or state-owned land, or had little to no infrastructure in place. They focused discussions on locations with the most potential to support the community and become a Hub in the future.

The Koko Head District Park was the most recommended potential Hub location based on dot voting. This site received 9 out of 37 dot votes and was determined to be the preferred primary Hub site. The secondary location determined was the Wailupe Community Park which received a total of 8 dot votes out of 37.

Figure 28. *Final Map of the potential Resilience Hub locations for the East Honolulu Regional Planning Area.*

During the workshop, two tables focused on Koko Head District Park to conduct the Building Functions Ranking Activity, as shown in Figure 29. Participants indicated Hawaii Kai is too large for a single Hub, and Koko Head District Park is considered more suitable as a resource depot than a day-to-day Resilience Hub. Concerns were raised regarding access during blue and gray skies times because the site is a public park. Additional food security, and accessibility for individuals with ADA restrictions were mentioned. Suggestions were made for placing a precovery-pod at the park and finding alternative solutions for Hub functionality if the highway becomes compromised.

In follow-up discussions with community partners who hosted the workshop, additional considerations were raised for East Honolulu to increase their resilience as a whole. The main concerns mentioned by the community partners were: 1) most of the sites proposed are in known hazard zones; 2) these sites should preferably be community-owned, and 3) the need to address compromised transportation routes in the event of a severe natural disaster. Community partners also shared a desire for Hubs to become designated as FireWise Communities.

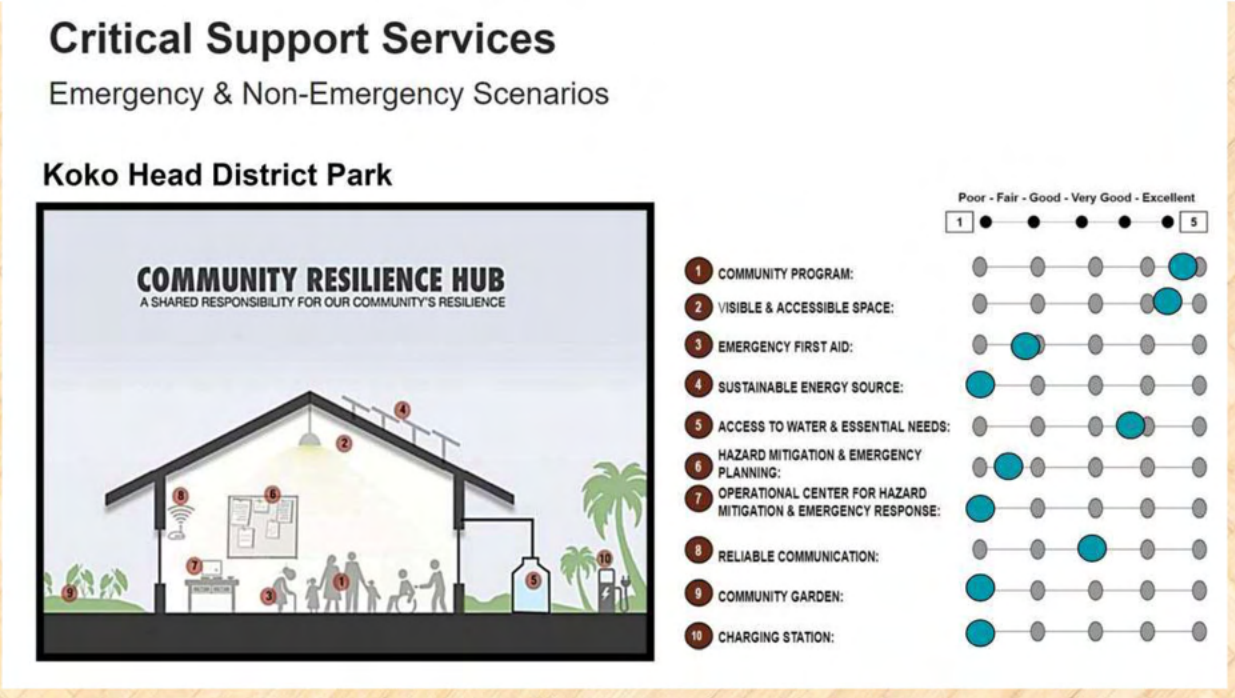

Figure 29. *Average Building-level Ranking of Critical Support Services for Koko Head District Park Hub. Two tables selected this location for the tabletop activity.*

The main themes discussed regarding next steps and priorities for strengthening East Honolulu's regional resilience as perceived by the community and identified in workshop and follow-up discussions include:

- Hub Location Engagement
- Partnership Exploration
- Food Security
- Communication and Emergency Response
- Infrastructure and Facilities
- Initiative Extension
- Stakeholder Engagement
- Community Support and Coordination
- Hazard Research and Risk Mitigation
- Connection between Shelters and Hubs
- Continuous Improvement and Ongoing Monitoring of Existing Systems

For the complete list of over 35 next steps identified by neighborhoods in the East Honolulu Region, see Appendix I.

Figure 30. *Group photo taken at Wailupe Community Park, February 15, 2023.*

WAI'ANAE

The Wai'anae workshop was held at the Wai'anae Coast Comprehensive Health Center (WCCHC) on May 24, 2023. It was hosted by the 'Elepaio Program with 46 participants attending. This workshop consisted of 6 tabletop discussions representing neighborhoods Nānākuli, Mā'ili, Wai'anae, and Makaha. A total of 21 Resilience Hub locations were recommended following the workshop. Twenty potential Hub sites were identified in the site suitability analysis, and one additional site (location 21) was identified during the workshop as shown in Figure 31.

***Figure 31**. Final Map of the potential Resilience Hub locations for the Wai'anae Regional Planning Area.*

The tables discussed the many challenges of finding a suitable location for Hubs in the Wai'anae Region ranging from high-risk roads along flood zones on the coast to the locations being too far apart to service each unique community. One of the main challenges was determining which site could service the widest area of the community while still being accessible from multiple ahupua'a even if the roads are down.

The Wai'anae Coast Comprehensive Health Center (WCCHC) was the most recommended potential Hub location based on dot voting. This site received 18 out of 47 dot votes and was determined to be the preferred primary Hub site. The secondary location determined was Kahumana Farms which received a total of 10 dot votes out of 47.

During the workshop, three tables focused on the WCCHC to conduct the Building Functions Ranking Activity, as shown in Figure 32. The WCCHC was among the most recommended Hub locations due to its active community involvement, visibility, and accessibility. Participants indicated this made it a reliable Hub during disasters, with the added advantage of providing emergency first aid services. Its sustainable energy sources, including solar panels and backup generators, enhanced its resilience, and occasional farmers' markets further contributed to food security. The discussions emphasized the need for clearing roads for emergency access, exploring alternative transportation options, and fostering collaborations with organizations like the Department of Education and the military. Creating a network of Hub locations was considered strategic for comprehensive disaster preparedness and resilience across the planning region.

Figure 32. *Average Building-level Ranking of Critical Support Services for WCCHC Proposed Hub Location. Two tables selected this location for the tabletop activity.*

The main themes discussed regarding next steps and priorities for strengthening regional resilience as perceived by the community and identified in workshop and follow-up discussions include:

- Community Engagement and Training Programs
- Transportation and Accessibility
- Communication and Emergency Preparedness Planning
- Shelter and Evacuation
- Sustainable Energy and Food Security
- Risk Assessment and Vulnerability

For the complete list of over 30 next steps identified by neighborhoods in the Wai'anae Region, see Appendix I.

Figure 33. *Group photo taken at the Wai'anae Coast Comprehensive Health Center, May 24, 2023.*

'EWA

The 'Ewa workshop was held virtually using Zoom on April 20, 2023. It was hosted by CERENE with 16 participants attending. This workshop consisted of one Zoom Room discussion representing the region broadly, with a special focus on the Kapolei and 'Ewa Beach neighborhoods. Eight potential Hub sites were identified in the site suitability analysis [7] as shown in Figure 34.

The room discussed the challenges of finding a suitable location for Hubs in the 'Ewa Region, with a large part of the discussion being that not many sites were recommended for consideration. However, many of those listed were familiar to the community, away from hazard zones, and had a history of supporting resilience and disaster preparedness. The 'Ewa region has been increasing in population quickly, so choosing a site that could service the growing community was also an important consideration.

For the 'Ewa region, there were two top recommended potential Hub locations based on dot voting, which both received an equal amount of 3 dot votes out of 6 total votes. The two recommended locations were The Kroc Center and the University of Hawai'i West O'ahu (UHWO). One additional Hub location was proposed by community members.

[7] One additional location was identified during the Central O'ahu workshop (location 9). Because it was located within the 'Ewa planning region it was also included in this map.

Figure 34. *Final Map of the potential Resilience Hub locations for the 'Ewa Regional Planning Area.*

During the workshop, participants conducted the Building Functions Ranking Activity for both preferred locations. The Kroc center was identified as having strong community support, being in close proximity to essential infrastructure, such as emergency and disaster response facilities, and being trusted by various organizations, as shown in Figure 35.

Figure 35. *Ranking of Building-Level Critical Support Services for The Salvation Army Kroc Center Hawai'i.*

Figure 36. *Ranking of Building-Level Critical Support Services for University of Hawai'i-West O'ahu (UHWO).*

The University of Hawai'i West O'ahu (UHWO) was identified for having strong community support and trust, low hazard exposure, good transportation access, and being in proximity to essential infrastructure, services, and facilities, as shown in Figure 36. Additionally, the location's involvement in sustainable farming and food distribution exercises were identified as potential resources during blue and gray skies.

The main themes discussed regarding next steps and priorities for strengthening 'Ewa's regional resilience as perceived by the community and identified in workshop and follow-up discussions include:

- Strengthening Partnerships with Nearby Organizations
- Developing an Effective Communications Strategy
- Exploring Collaboration Opportunities with UHWO
- Offering Training Programs for Community Empowerment
- Engaging the Department of Hawaiian Home Lands (DHHL)
- Strengthening Private and Public Partnerships
- Working with Local Sites for Community Resiliency
- Collaborating with Key Organizations for Information Sharing
- Engaging UHWO's Emergency Manager as Stakeholder

For the complete list of over 11 next steps identified by neighborhoods in the 'Ewa Region, see Appendix I.

CENTRAL O'AHU

The Central O'ahu workshop was held virtually via Zoom on April 27, 2023. It was hosted by CERENE with 16 participants attending. This workshop consisted of 2 Zoom Room discussions representing Pearl City and Mililani neighborhoods. A total of 24 Resilience Hub locations were recommended following the workshop. Twenty potential Hub sites were identified in the site suitability analysis, and four additional locations were identified during the community engagement workshop (locations 21-24) as shown in Figure 37.

The rooms discussed the challenges of finding a suitable location for Hubs in the Central O'ahu Region. Like the other workshops, it was hard to find one location that could meet all the needs of the community and region. The goal was to try and find a site that could be centrally located, well known to the community, and accessible from multiple neighborhoods.

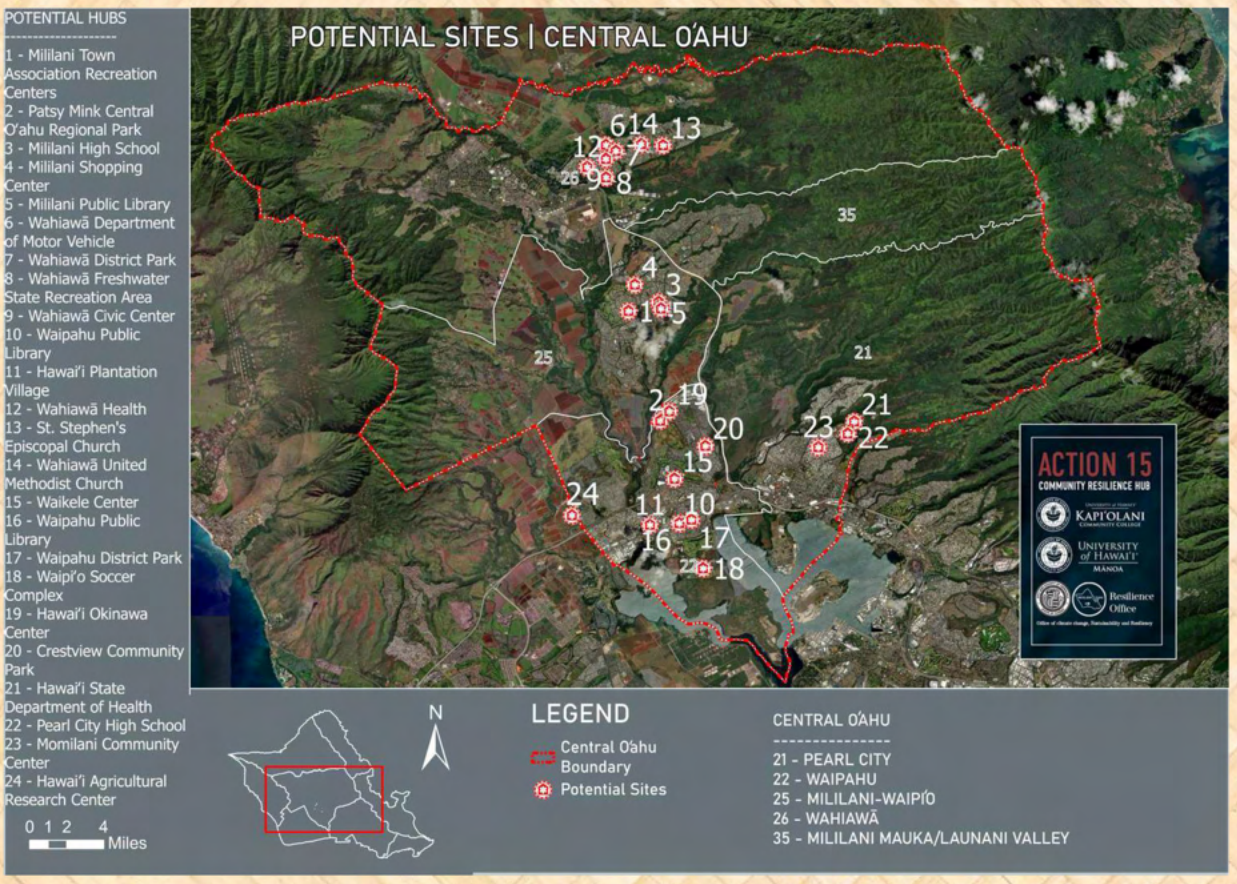

Figure 37. *Final Map of the potential Resilience Hub locations for the Central O'ahu Regional Planning Area.*

The Hawai'i Okinawan Center was the most recommended potential Hub location based on dot voting. This site received 6 out of 20 dot votes and was determined to be the preferred primary Hub site. The secondary location determined was the Wahiawā Civic Center which received a total of 3 dot votes out of 20.

Critical Support Services

Emergency & Non-Emergency Scenarios

Hawai'i Okinawan Center / Patsy T. Mink Central O'ahu Regional Park

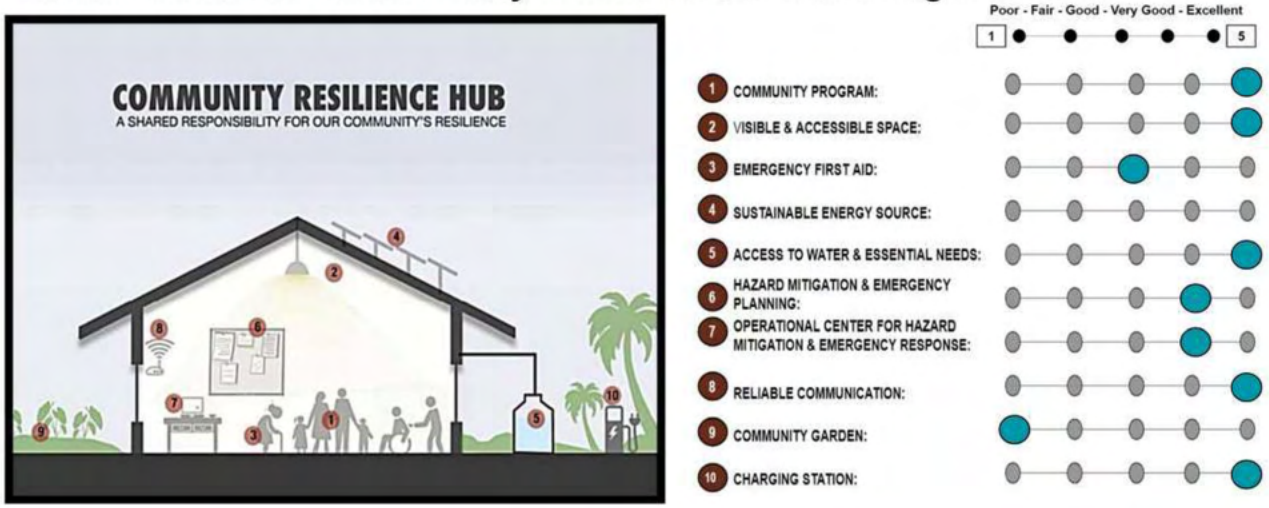

Figure 38. *Ranking of Building-Level Critical Support Services for Hawai'i Okinawan Center / Patsy T. Mink Central O'ahu Regional Park.*

During the workshop, one room chose the Hawai'i Okinawan Center to conduct Building Function Ranking, as shown in Figure 38. The Hawai'i Okinawan Center was noted as a gathering place with ample parking and distribution points. It was noted for potentially hosting a microgrid system, which was considered a priority. Overall, the conversation highlighted the importance of community input, partnerships between organizations, and careful selection of locations to establish an effective and resilient network of Hubs for the region.

In follow-up discussions with community partners who collaborated on planning the workshop, additional considerations were raised for Central O'ahu to increase their resilience as a whole, including the creation of a phone tree for data management, seeking more partnerships with DEM and the City and County, and considering faith-based networks to be at the center of the Hub network as they are often pillars in their communities and are trusted places to congregate. Community partners also mentioned the Wahiawa Civic Center being built may receive more community interest as a potential hub location once complete. Planning for fire safety was identified as a crucial concern, especially with threats of vacant agricultural land increasing fire risk.

The main themes discussed regarding next steps and priorities for strengthening regional resilience as perceived by the community and identified during the workshop and follow-up discussions include:

- Emergency Medical Support and Training
- Sustainable Energy Solutions
- Comprehensive Communication Plan
- Community Gardens and Food Production
- Enhanced Transportation Access
- Partnerships for Additional Resources
- Collaboration with Local Farms
- Fostering Communication and Collaboration
- Network Expansion and Data Management

For the complete list of over ten next steps identified by neighborhoods in the Central O'ahu Region, see Appendix I.

PRIMARY URBAN CENTER

The Primary Urban Center (PUC) workshop was held at The Susannah Wesley Community Center on February 18, 2023. It was hosted by The United Women in Faith with 67 participants attending. This workshop consisted of 8 tabletop discussions representing the neighborhoods Mānoa, Moanalua, Nu'uanu, Kailua, Aiea, Salt Lake, Kalihi, Liliha, Ala Moana, Waikīkī, Diamond Head, and East Honolulu. A total of 39 Resilience Hub locations were recommended following the workshop. Thirty-six potential Hub sites were identified in the site suitability analysis, and three additional locations were identified during the workshop (locations 37-39) as shown in Figure 39.

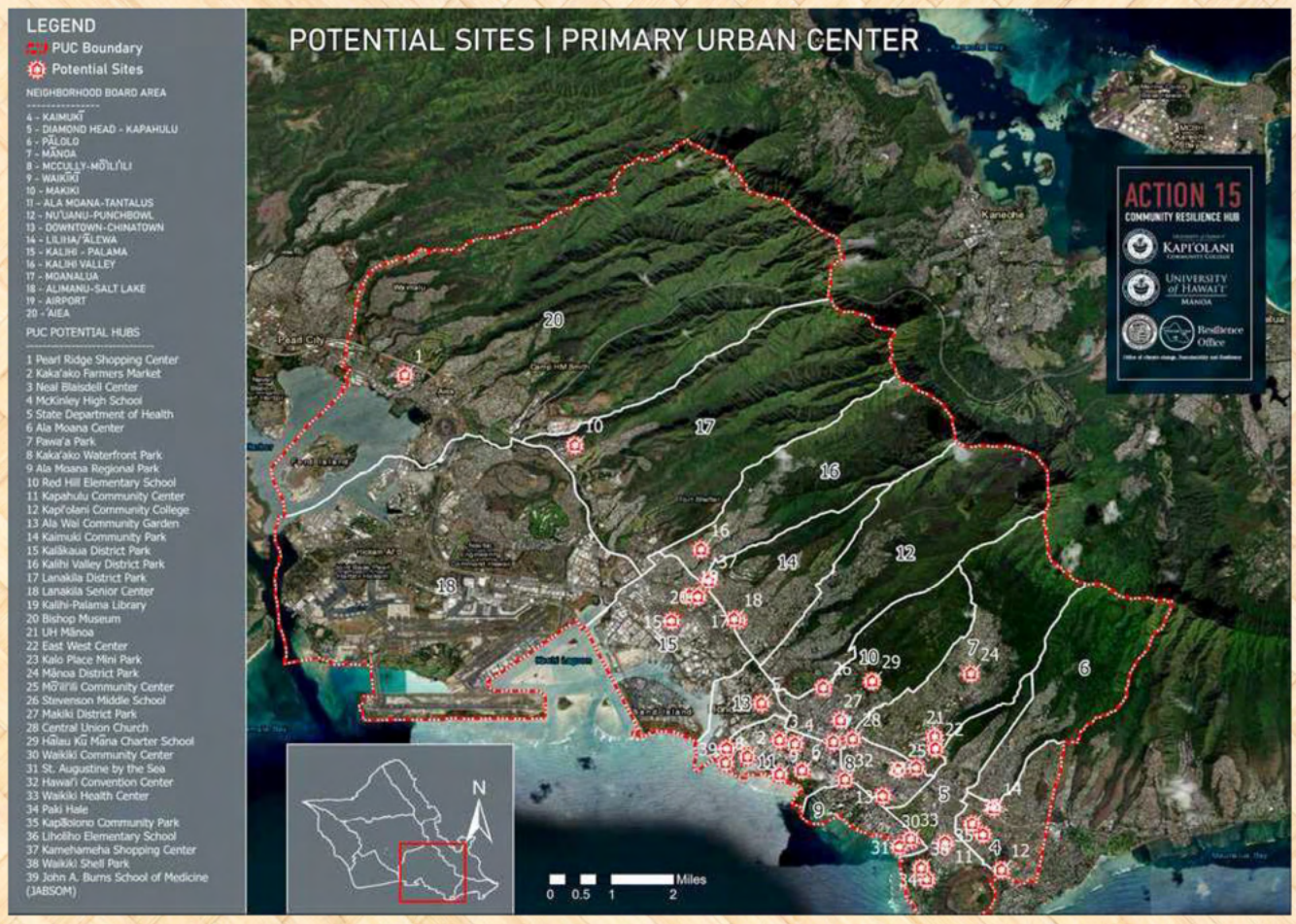

Figure 39. *Final Map of the potential Resilience Hub locations for the PUC Regional Planning Area.*

The tables discussed the challenges of finding a suitable location for Hubs in the PUC Region and the difficulty of choosing a singular location to service the community. With the PUC containing most of O'ahu's population, it is difficult to find which site would service the greatest number of people while still being accessible and out of hazard zones.

Most of the potential sites are centrally located but were perceived to lack space and adequate resources to provide for community needs in a disaster scenario. Four sites eventually emerged as the topmost recommended locations for potential Hub sites; two were discussed in detail during the workshop and had Building Functions Rankings completed.

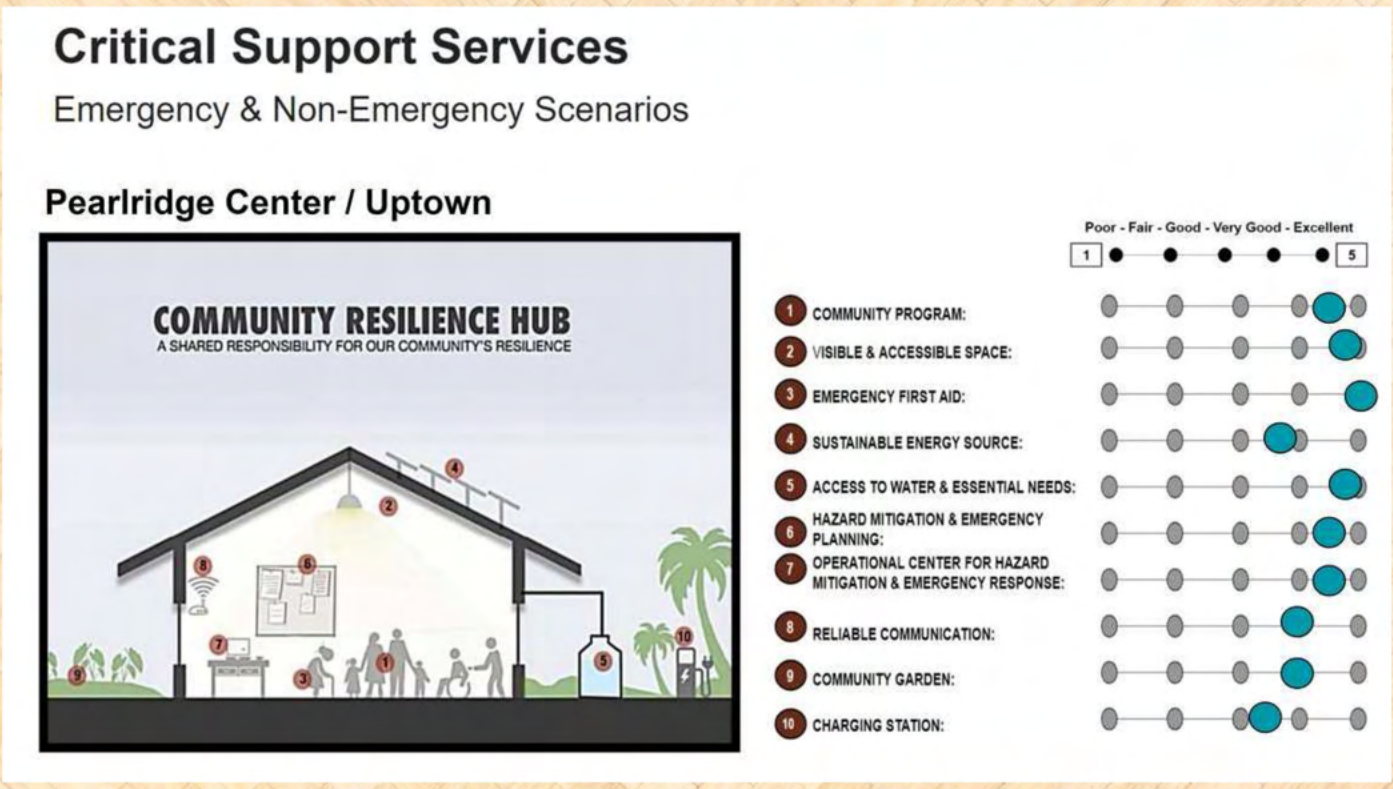

Figure 40. *Average Building-level Ranking of Critical Support Services for Pearlridge Center Proposed Hub Location. Two tables selected this location for the tabletop activity.*

The University of Hawai'i at Mānoa, in a networked Hub configuration with the East West Center, was the top recommended potential Hub location based on dot voting. This site received 6 out of 39 dot votes and was determined to be the preferred primary Hub site. However, it was not selected for the tabletop activity due to concerns about being in the flood zone. Pearlridge Center, Kalākaua District Park, and Lanakila Multi-Purpose Senior Center received an equal number of votes to be considered the secondary location most recommended, receiving a total of 4 dots out of 39 for each location. However, workshop participants expressed the need for a networked approach between a Hub and surrounding resources.

During the workshop, two tables discussed Pearlridge Center in the Building Functions Ranking Activity, as shown in Figure 40. Pearlridge Center was identified among the most recommended locations due to its high community trust and proximity to critical infrastructure, including medical facilities and schools.

Pearlridge Center ranked high in community programs and being a visible and accessible space as it consists of a large shopping mall and a smaller shopping center nearby. It also ranked high in access to essential needs and services. Some concerns included access to sustainable energy sources and more charging stations. There was discussion on potentially collaborating with local farms and creating spaces for community gardens to increase food resilience efforts.

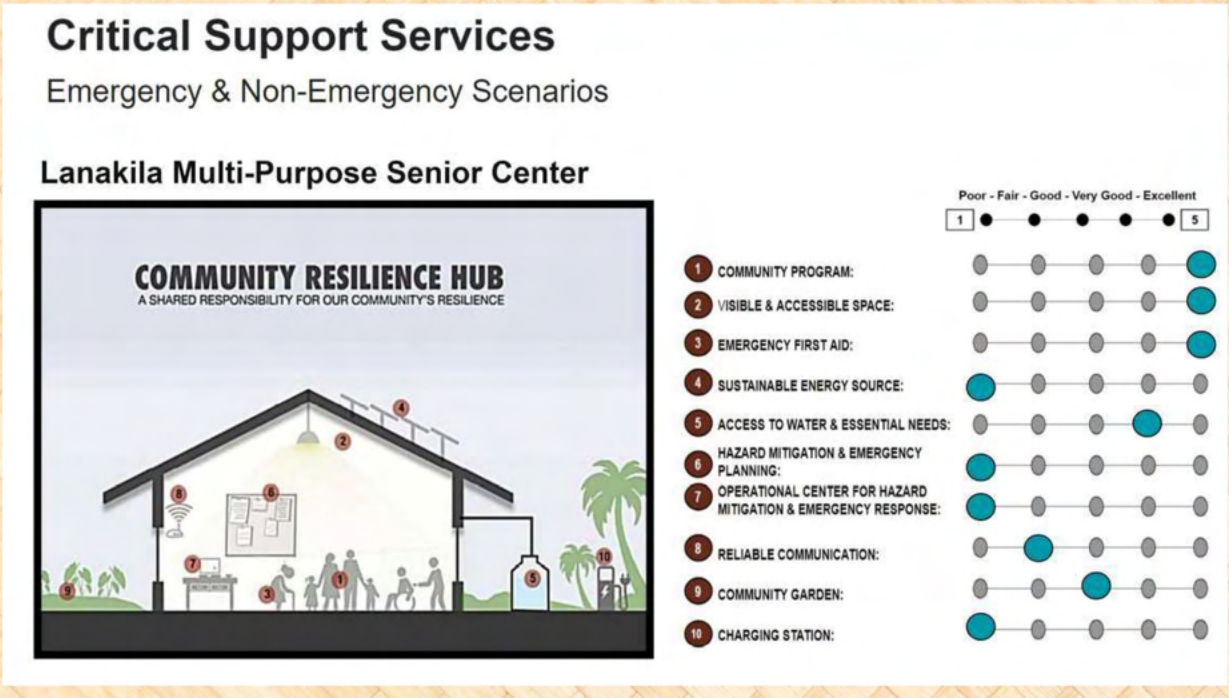

Figure 41. *Ranking of Building-Level Critical Support Services for Lanakila Multi-Purpose Senior Center.*

The other location discussed was the Lanakila Multi-Purpose Senior Center. It ranked high in terms of community programs, being a visible and accessible space, well known to the community, and having emergency first aid onsite, as shown in Figure 41. Participants identified a lack of community gardens for this space as a concern.

In follow-up discussions with community partners who hosted the workshop, additional considerations were raised for the PUC to increase their resilience as a whole, including maintaining contact from the City and State to continue support of the community and its resilience efforts, looking to faith-based organizations for support in Hub planning, conducting and hosting more Resilience Hub training workshops, and ensuring the publicly accessible regional data collected as part of the Project is secured and properly managed.

The main themes discussed regarding next steps and priorities for strengthening regional resilience as perceived by the community and identified in workshop and follow-up discussions include:

- Infrastructure Assessment and Renewable Energy
- Community Communication Systems
- Medical Facilities Availability
- Food Production and Plot Establishment

- Hazard Mitigation and Water Shut-off Strategies
- Storage for Emergency Materials
- Public Awareness and Evacuation Locations
- Engagement and Collaboration
- Solar Energy and Agriculture Expansion
- Funding Options and Partnerships
- Resilience Hub Plan in Kalihi
- Addressing Lack of Farmland
- Evacuation Centers and Disaster Response Facilities
- Engaging Kūpuna and Community Support

For the complete list of over 66 next steps identified by neighborhoods in the PUC Region, see Appendix I.

Figure 42. Group photo taken at The Susannah Wesley Community Center, February 18, 2023.

COST ESTIMATE FOCUS GROUP

The focus groups consisted of subject matter experts specializing in architecture, engineering, utilities, land use planning and zoning, food systems, and designing for disaster preparedness. The focus group discussions were held in person and also on Zoom. The first focus group took place at Kapi'olani Community College on May 22, 2023. It was hosted by CERENE, with 16 participants attending the workshop (Figure 43).

The second focus group was held virtually via Zoom on May 30th, with 4 participants attending. Focus groups consisted of one large tabletop (or Zoom Room) discussion with invited subject matter experts.

Figure 43. *Cost Estimate Focus Group Discussion, May 22, 2023.*

The focus group discussions examined general costs, concerns, and other considerations for retrofitting Hub building facilities. Four potential Hub locations were selected as examples for assessment. The locations were chosen to represent the range of variables encountered by potential Hubs across O'ahu. These variables included coastal versus land-locked, urban versus rural, older and new age buildings, and geography (northernmost and southernmost regions of O'ahu). The four example Hub locations assessed included KEY Project (Ko'olaupoko), the Waikīkī Community Center (PUC), the Kroc Center ('Ewa), and Waialua High and Intermediate School (North Shore).

All four examples presented quite different scenarios for retrofit considerations, highlighting the need for site-specific planning in the future. However, a number of general key takeaways emerged from the discussions.

Costs and Concerns Identified:

- Retrofitting is more than just "hardening" the structure for hurricane winds and preventing flood damage. There is also a need for strengthening public/private partnerships and leveraging existing communications and relationships.

- A networked model emerged as an important element in strengthening Hub capacity

- Different disaster scenarios require different planning for capacity building. Retrofitting for the most likely scenarios and investing smartly is key. Hubs in the inundation zone should not be invested in as much as Hubs outside of inundation zones. However, they could still serve a function as a cooling center, for example, or a food distribution site if another part of the island is struggling as a way to support the broader network of Resilience Hubs.

- Energy resilience (increasing access to batteries, generators, and solar) and food resilience emerged as top priorities across sites

- Increasing communication capacity emerged as an important need for all four sites (whether it was with the local community or to support vertical evacuation).

- All four locations had the ability to increase their solar capacity

See Appendix C for a complete list of costs and concerns identified.

SUMMARY AND NEXT STEPS

He ʻaʻaliʻi kū makani mai au; ʻaʻohe makani nāna e kūlaʻi. ***I am a wind-resisting ʻaʻaliʻi; no gale can push me over (ʻŌlelo Noʻeau 507).***

This ʻŌlelo Noʻeau [8] reminds us that no matter the appearance of things, if we stay rooted in the ʻāina, we will be resilient. If we are flexible like ʻaʻaliʻi, we won't be blown over. One thing that has become abundantly clear in this Project is that we need each other, and we are more resilient and stronger together.

Based on both the survey results and the overwhelming participation in the community engagement events its clear community members are not only interested in supporting Resilience Hubs, but many are also outright passionate about it. This project has achieved its objectives of identifying levels of support and developing partnerships with leaders and organizations across Oʻahu. Over 156 potential Hub locations were identified with specific discussions about pros and cons for many of them that will help shape and guide future localized planning efforts. With the help of the community partners and workshop feedback, 48 updated suitability maps with the newly added Hub locations have been created (Appendix E). The finding also informed a project definition of resilience hubs. Lastly, community members have produced a list of 256 tangible region-specific next steps (Appendix I).

We have also achieved the process goals associated with Phase II of the project. The Project reached a high level of intergenerational learning and exchange, as evidenced by observing workshop interactions. Based on feedback surveys, comments, and testimonials from workshop participants, we facilitated an equitable and inclusive process attracting a great diversity of participants. Community members reported feeling more empowered to participate in resilience planning following the workshops and that they had learned something and experienced a greater sense of community. Lastly, Project community partners have expressed interest in continuing work on Resilience Hubs for their region and are interested in serving on a longer-term advisory council for developing a community of practice to make them happen.

Based on the Project findings and outcomes, seven areas of future work and 26 specific actions were identified as next steps to support the development of Resilience Hubs across Oʻahu. These next steps are intended not only for the city but for the many community partners and organizations involved in the Project. Continued collaboration will be necessary in determining who is responsible and how best to implement them.

[8] `Ōlelo Noʻeau 507 [Mary Kawena Pukui] Mau ʻōlelo noʻeau nui (great sayings of old) were shared throughout the project, but none so often as this one.

Project Definition of Resilience Hubs

Based on community and partner input, we have developed a working definition of Resilience Hubs for O'ahu. A Resilience Hub is a trusted gathering place (virtual or in-person). They provide access to services, programs, resources, and opportunities for community members. Their functions can vary depending on a community's needs while operating in both non-emergency (blue skies) and emergency (gray skies) scenarios. Hubs utilize place-based, culturally informed strategies that increase personal and interpersonal resilience. They serve individuals, families, neighborhoods, and communities. Hubs work together as a network islandwide and statewide. Big and small we need them all: they can be a pop-up aid distribution center or a group of people who meet regularly to support services and programs. Hubs can be a precovery-pod filled with non-perishable food and medicine or they can be a physical structure such as a building.

Next Steps

Hub Location and Infrastructure Development:

- Engage facilities identified as potential Hub locations
- Generate a checklist for strengthening, retrofitting, or hardening Hub locations
- Work with subject matter experts for retrofitting cost estimates specific to each location
- Explore the development of localized Resilience Hubs networks as an alternative model

Partnership Development:

- Continue to develop and grow community partnerships at all levels of Hub planning
- Develop partnerships and coordinate with existing resilience collaboratives and networks on Oʻahu, like UH Climate Resilience Collaborative and National Disaster Preparedness Training Center
- Engage organizations and non-profits active in supporting local resilience efforts
- Engage small-business owners and coordinate with the City's Office of Economic Revitalization
- Identify long-term liaisons and build partnerships with each neighborhood board

Hub Network Establishment and Support:

- Capitalize on Federal Emergency Management Agency Direct Technical Assistance awarded to the City for Resilience Hub planning
- Develop a city "designated" Hub program in collaboration with project partners
- Establish a Resilience Collaborative/Network/Collective, fostering a Resilience Learning Community for Oʻahu Hubs
- Use the community developed definition for Resilience Hubs moving forward in the next steps for this project [9].

[9] This community developed definition of a community resilience Hub was inspired by conversations with workshop participants, community leaders, Kaimukī Middle School students and the language currently used by Vibrant Hawai'i.

Culturally Informed Practices, Integration, and Outreach:

- Continue supporting culturally informed practices, including Native Hawaiian Worldviews and ahupua'a systems in Resilience Hub planning
- Revisit strategies from the City and County of Honolulu's Ola: O'ahu Resilience Strategy
- Strategize and integrate with Action 15 suggested next steps
- Integrate recommendations into future Development and Sustainable Communities Plans updates and other existing City planning efforts

Blue Skies Capacity Building and Coordination:

- Support workforce development as part of Hub functions
- Integrate K-14 education and curriculum as part of Hub capacity building
- Support potential Hubs seeking participatory GIS capacity building and training (e.g., community-based asset mapping and vulnerability mapping or developing "Resilience Scorecards" like Vibrant Hawai'i's communities)

Gray Skies Disaster Planning and Preparedness:

- Create new suitability maps focusing on a single specific hazard for Hub planning (e.g., tsunami, flooding, fire risk, heat events, hurricanes)
- Develop composite suitability maps for a comprehensive overview of suitability criteria in a single map
- Coordinate and support disaster preparedness-specific training and capacity building

State and Regional Collaboration:

- Coordinate with state level Resilience Hub efforts, including the Annual Hawai'i State Resilience Hub Forum
- Align with the U.S. Department of Housing and Urban Development's recommendations following the 2023 Forum, such as digital literacy, capacity building, community engagement, and civic science
- Facilitate regional workshops to define and name levels of Hub functions, similar to the Vibrant Hawai'i approach

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PROJECT REPORT CONTRIBUTORS

Dr. Miku Lenentine, Program Coordinator, Center for Resilient Neighborhoods, Kapiʻolani Community College

Sarah Harris, Hazard Mitigation and Long-term Disaster Recovery Program Manager, City and County of Honolulu Office of Climate Change, Sustainability and Resiliency

Dr. Robert Franco, Anthropology Professor, Kapiʻolani Community College

Dr. Suwan Shen, Associate Professor, Urban and Regional Planning Department, College of Social Sciences, University of Hawaii at Mānoa

Cuong Tran, National Disaster Preparedness Training Center, University of Hawaii at Mānoa

Kinzang Dorji, Masters Student, Urban and Regional Planning Department, College of Social Sciences, University of Hawaii at Mānoa

Dingyi Liu, Masters Student, Urban and Regional Planning Department, College of Social Sciences, University of Hawaii at Mānoa

Christopher Fujimoto, Assistant Program Coordinator, Center for Resilient Neighborhoods, Kapiʻolani Community College

Kaua Kalaiwaʻa Undergraduate Research Assistant, Resilience Corps Leadership Award Program, Center for Resilient Neighborhoods, Kapiʻolani Community College

Tara ʻIwalani Clayton, Undergraduate Research Assistant, Resilience Corps Leadership Award Program, Center for Resilient Neighborhoods, Kapiʻolani Community College

Christopher Pascua, Undergraduate Research Assistant, Resilience Corps Leadership Award Program, Center for Resilient Neighborhoods, Kapiʻolani Community College

Lomani Rova, Undergraduate Research Assistant, Resilience Corps Leadership Award Program, Center for Resilient Neighborhoods, Kapiʻolani Community College

Alexandra Narrajos, Masters Student, Urban and Regional Planning Department, College of Social Sciences, University of Hawaii at Mānoa

Rakhi Mahato, Masters Student, Urban and Regional Planning Department, College of Social Sciences, University of Hawaii at Mānoa

Photo credit: Dr. Noa Kekuewa Lincoln

The inspiration for the report design comes from the Lauhala leaves of the pū hala. They are versatile yet fragile. The lauhala pattern represents the foundation of a conversation that needs to be had in hopes of "Pūpūkahi i holomua" - Unite to move forward (ʻŌlelo Noʻeau #2758). The contour lines represent the different layers of this project, whether it's the conversations that were had, the people that met, the places that were talked about, or the ideas that were shared. Like Dr. Miku Lenentine said, "Big or small, we need them all".

~ Giavonna Kauakaʻapuni Kanekoa Kalaiwa'a, Graphics Design Lead