

# **APPENDIX A. SURVEY FINDINGS**



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# Introduction

In 2019, the City and County of Honolulu (City) created the Ola O‘ahu Resilience Strategy. The strategy comprises forty-four actions that directly address strategies to tackle future climate change impacts and self-sufficiency issues on the island of O‘ahu. In correspondence with Action 15, the City Office of Climate Change, Sustainability, and Resiliency (CCSR) will create a Resilience Hub Action Plan in partnership with the University of Hawai‘i (UH) Department of Urban and Regional Planning and Kapi‘olani Community College’s Center for Resilient Neighborhoods (CERENE).

Community Resilience Hubs are building structures and their associated grounds that provide services to local communities to support and enhance the quality of life of residents (USDN, 2019). The objective of the Resilience Hub Action Plan is to provide recommendations to support current and future community-led efforts in developing Community Resilience Hubs across the island of O‘ahu. The Resilience Hub Action Plan will provide the City with appropriate supporting information to incorporate Community Resilience Hubs into the City’s Multi-Hazard Pre-Disaster Mitigation Plan. The plan will identify the most suitable and highly rated locations for potential Community Resilience Hubs within the eight development plan areas (Figure 1). The plan will also identify available resources in each development plan area and existing networks and partnerships to develop a network of Community Resilience Hubs across O‘ahu through two phases. This report summarizes the findings of the islandwide survey in Phase I to support the following suitability analysis and community engagement in Phase II.

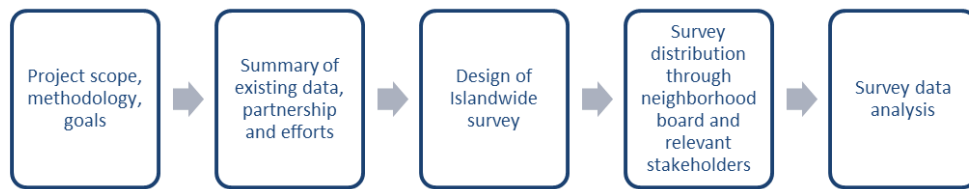


**Figure 1.** Eight development plan areas on the island of O‘ahu (City and County of Honolulu Planning and Permitting, n.d.)

In Phase I (Figure 2), an islandwide online survey was distributed through neighborhood boards to gather residents’ perceptions on the concept of Community Resilience Hubs, collect information on candidate sites, and identify existing networks and relationships to implement Community Resilience Hubs. Survey respondents were also invited to sign up for a listserv to be notified about future engagement events scheduled in Phase II. A preliminary suitability analysis using the survey results will also be conducted to help screen locations for site selection.

Phase II (Figure 2) will convene the thirty-three neighborhood boards for focus group discussion workshops regarding preliminary Community Resilience Hub candidate sites for community engagement. The workshops will be conducted virtually or in person for each of the eight development plan areas. Workshops will prioritize creating equitable engagement opportunities for Native Hawaiians and other Pacific Islanders, as well as other groups with increased vulnerability factors. The final report will identify at least eight primary and eight alternate locations for establishing a Community Resilience Hub. One primary and one alternate location in each development plan area, as well as priorities and possible next steps for future implementation will be provided.

**Phase I**



**Oct 2021**

**Aug 2022**

**Phase II**



**Sep 2022**

**Aug 2023**

Figure 2. Project timeline for phase I and phase II

## Resilience Hub Concept and Application

The concept of Community Resilience Hubs garnered attention across the country following a series of disasters in recent years, with the potential to serve as a bridge between multiple layers of community, local, state, and federal agencies during disaster response (Ola Oahu Resilience Strategy, 2019). As the quality of life is a vague notion, each community must develop its own indicators based on its needs and available resources (Haines, 2009). At a municipal level, Resilience Hubs can be designed to function year-round in both normal and emergency periods (Pew, 2020). Resilience Hubs can operate as a community resource during normal non-emergency periods while also serving as a center for aid and relief during and immediately following disasters and emergency events (De Roode and Martinac, 2020a).

The Ola O‘ahu Resilience Strategy identified developing a network of resilience hubs as a key action in the City’s resiliency plan. Resilience Hubs are flexible and scalable, which is one of the most powerful aspects of adapting to climate change (Sandoval, n.d.). Resilience Hubs may provide important community functions such as education, public engagement, critical service, or housing in normal times (Sandoval, n.d.). Hubs can assist in the equitable access to and distribution of resources to the community (i.e., both physical/material-based and knowledge/information-based resources) (De Roode and Martinac, 2020a).

Resilience Hubs could be used to distribute vital information and resources during/immediately following disasters, to reduce the burden on and interference with local emergency response teams (O‘ahu Resilience Strategy, 2019). Other critical services provided by Resilience Hubs may include backup power supply, potable water, telecommunications, medical resources, and food provisions as complements to other support systems (De Roode and Martinac, 2020a). Through hubs, they may also facilitate communication between different agencies and departments and the public through, e.g., emergency and non-emergency telecommunication, internet access/connectivity, and emergency and non-emergency informational bulletins and advisories (De Roode and Martinac, 2020a).

Finally, in response to climate change preparedness and ongoing needs to mitigate the driver of climate change, resilience hubs may provide low carbon or carbon neutral services that mitigate greenhouse gas emissions. Whenever possible, and in addition to other energy efficiency and renewable energy generation measures, Hubs could incorporate on-site carbon sequestration services, e.g., tree planting, regenerative community-based agriculture, and aerobic composting (De Roode and Martinac, 2020a).

Examples of Resilience Hubs can be found within the state on Hawai‘i Island and nationwide in Seattle, Baltimore, Miami, San Francisco, and Washington D.C . The goals and functions of these Resilience Hubs are summarized in Table 1. The [Resilience Hubs on Hawai‘i Island](#) were launched during the COVID-19 pandemic, when grassroots organizations supplied digital access, distributed prepared meals and produce bags, and provided resources and education to more than 30 communities across the island. In total, 41,733 households and 108,214 individuals were served in this effort across the island.

[Resilience Hubs in Seattle](#) consist of separate neighborhoods networked together to collect information on local needs and create opportunities to be resilient after a major disaster . The Seattle Hub Network, primarily run by volunteers, creates a year-end report describing major activities and accomplishments in a given year.

The Community Resiliency Hub Program in [Baltimore](#) comprises 15 non-profit organizations throughout the city’s districts to provide resources for vulnerable neighbors to gather in times of emergency.

The Neighborhood Empowerment Network in [San Francisco](#) consists of 12 upcoming Hubs run by residents, neighborhood associations, nonprofits, and faith-based organizations. Each Hub consists of three core actors: Anchor Institutions, Hub partners, and Block Champions. Anchor Institutions are centers used to manage everyday events or during disasters. Hub members serve the community through a variety of preparedness and recovery activities. Finally, Block Champions connect Hub activities with residents and coordinate with the Hub in times of need. The Network supports the Hubs in creating a resilience action plan

Cities currently developing Resilience Hubs include [Miami](#) and [Washington D.C.](#) During the COVID-19 pandemic, Miami recruited residents as Community Champions to create resilience projects around their community and neighborhood in response to the outbreak. Meanwhile, Washington D.C. officials began meeting with community members to address climate resilience in Ward 7 and to create a vision to implement a future Hub pilot project.

**Table 1.** Resilience Hubs Goals and Functions

<b>Resilience Hub Location</b>	<b>Goals (what do the hubs hope to accomplish)</b>	<b>Actions (what are the hubs doing to achieve goals)</b>	<b>Functions (what functions of the community resiliency hubs do the actions fulfill)</b>
Hawai‘i Island	<p>A network of trusted, people-powered spaces that provide resources to build more connected and prepared communities.</p> <p>Phase one: Respond to COVID-19 and provide for basic needs (September - December 2020)</p> <p>Phase two: Economic resilience, disaster preparedness, and recovery (February to May 2021)</p> <p>Phase three: Develop energy resilience impact Hubs that cultivate</p>	<p>Phase one: In September 2020, Vibrant Hawai‘i was awarded \$1,871,000 of CARES funds and state funding to launch a network of resilience hubs.</p> <p>Phase two: Provided community partners with a suite of tools, resources, and mentorship to assist residents, revitalize the economy, and built capacity and infrastructure so communities are ready for anything</p> <p>Phase three: Provide for basic needs, increase equity, strengthen individual and community</p>	<p>Phase one: Provide connectivity for distance learning, access to meals and food supplies, and build community resilience</p> <p>Phase two: Provided up-to-date information related to COVID-19 mitigation, provided resources to soften the financial, emotional, and social impact of the pandemic, provided access to internet in neighborhoods that currently have poor to no service/signal through WiFi connections, supported children’s required learning and</p>

	<p>collective prosperity (Dates to be determined)</p>	<p>resilience, commit to actively build capacity to facilitate community disaster preparedness, response, and recovery, and/or economic resilience</p>	<p>enrichment, provided emergency food distributions, and served as a hub of resources for various public/private assistance programs.</p> <p>Phase three: Distribute food supplies, health products and services, and donations to support community resilience, promote and/or host programs and services to support community resilience, design their Community Resilience Plan and mapping assets and threats in their community, create a coordinated Request for Assistance and assist with donation management, recruit, activate and manage volunteers, engage with media channels during an active disaster, and provide Mental Health First Aid training and Social Service Navigators</p>
Seattle	<p>Provide a coalition of separate Seattle neighborhood hubs having the shared mission of preparing for, responding to, and being resilient after a major disaster.</p>	<p>Self-help posters: Visual tools that provide people with basic information about actions to take after a major disaster</p> <p>Link map: Current Hub leaders can connect with their leaders by putting their location on an interactive map</p> <p>Training and Education: Periodically, Hubs around</p>	<p>Advocating in support of Hubs, creating opportunities to develop and share understanding of best practices, sponsoring activities such as training, drills and meetings which benefit all, and assisting each other in our individual hub efforts</p>



		Seattle may provide survival training and tips for the surrounding residents	
Baltimore	Better connect frontline community organizations with focused support and resources so that, in the event of a natural disaster or emergency, there is an improved provision of emergency response and recovery services to under-resourced neighborhoods and their most vulnerable residents	<p>Convenings and training: Resilience Hub Leaders are aimed to develop relationships with one another, learn about climate and health risks, and be educated on important City resources and preparedness techniques.</p> <p>Grant funded support: receive grant-funded support from the City of Baltimore in many forms including high-quality emergency preparedness supplies, energy efficiency upgrades to their building, back-up power capabilities (rooftop solar + battery storage if feasible), emergency preparedness and response training, connections to grant funding opportunities, and focused support and communications from Baltimore Office of Sustainability (BoS), (Office of Emergency Management) OEM, and (Department of Health) BCHD.</p>	High-quality emergency preparedness supplies, energy efficiency upgrades to their building, back-up power capabilities (rooftop solar + battery storage if feasible), emergency preparedness and response training, connections to grant funding opportunities, and focused support and communications
San Francisco	Supports neighborhoods as they create a local network, a HUB, of organizations that	Leverage techniques: such as place based planning, human centered design, asset based organizing and	Invest heavily before the event in preparedness at the individual, organizational and

	<p>advances the community’s overall preparedness on a daily basis, as well as provides essential support to residents as they recover from a stressful event of any size</p>	<p>servant leadership to engage communities and ensure the transfer of ownership back to the Neighborhood of their resilience</p> <p>Create Action Plans: which guide sustained investments at the individual, organizational and community levels that increase connection, capacity and the acquisition of essential resources</p>	<p>community levels, convenes HUB members to assess the situation that is confronting their community and design and implement solutions using the core operating procedures of the Incident Command System (ICS)</p>
Miami	<p>Build neighborhoods’ civic infrastructure, build the resilience of low-wealth individuals/families, improve the climate-related resilience of individuals/families, and enable, catalyze, and support community leadership at the local and state levels</p>	<p>Community Champions model: The Champions are advocates, stakeholders, and concerned residents that come together to create resilience in their chosen community. The teams meet regularly to implement projects that build community resilience, working with like-minded people in their community to improve its infrastructure, enhance the health and well-being of its residents, and reduce existing inequalities, all while earning a stipend of \$15/hour</p>	<p>Ongoing programming by weaving the hubs into communities’ social fabric now, so that they can successfully serve as distribution points for information, supplies, and assistance in the immediate lead-up to and aftermath of storms, improving general well-being and capacity to act as advocates and leaders, direct hub programming, cultivation of internal community leadership to think about preparation now, before the next storm, and achieve effective policies and improved government responsiveness to communities’ climate-related needs</p>

Washington D.C.	Hubs are not yet implemented. However, engagement within the District continues to help envision a pilot project in Ward 7	No actions at this time	Complement existing emergency response services and serve District communities year-round by promoting health, providing meeting spaces, educating the community about risks and emergency preparedness and supporting workforce development
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Although Hawai‘i faces the same threats from climate change, O‘ahu is unique because the island holds a majority of the state’s population along with critical lifelines that residents from neighboring islands travel to access. This project aims to continue the lessons and community-government relations formed throughout the COVID-19 pandemic. In O‘ahu, through the COVID-19 pandemic, community organizations and locations have served similar critical functions as Hubs in concept, and those lessons and community-government relations additionally inform this project. Community resource hubs for COVID relief and recovery supported with funding from the Coronavirus Aid, Relief, and Economic Security Act, the Coronavirus State and Local Fiscal Recovery Funds, and other philanthropic efforts have been an interdepartmental effort across the City Office of Economic Revitalization, Department of Community Services, and Department of Economic Revitalization.

In contrast to COVID Resilience Hubs, Community Resilience Hubs will also need to develop unique lifelines for energy and short-term sheltering. Community Resilience Hubs will need to keep building networked improvement communities, which will help to respond quickly to short-term shocks so that all of our neighbors, even the most vulnerable ones, have access to communication, education, food, energy, water, health, and housing. Implementing Resilience Hubs on O‘ahu allows the City to prepare appropriately for future disasters and emergencies facing the island. The Resilience Hub Action Plan will inform the City of existing and potential partners that will assist in developing hubs post-pandemic and beyond.

# Phase I - Islandwide Survey

## Objectives

The islandwide survey is the first step in the engagement process to develop an O‘ahu Community Resilience Hub Action Plan. The purpose of the survey is to understand people’s perceptions of Community Resilience Hubs and identify existing and future community resources, facilities, and organizations that could support the development of Community Resilience Hubs. The data from the survey will be used by the City to create a baseline understanding of current partnerships and identify priority concerns across different communities islandwide. The survey was opened on April 14th, 2022 and closed on April 10th, 2023. During this period, a total of 896 online surveys were completed as the result of engagement through all 33 Neighborhood Boards, over 50 different organizations, and three in-person outreach events as discussed below.

## Survey Design

An islandwide survey was designed to understand the community’s level of support, preferred functions, potential partner organizations and programs, and preferred locations for Resilience Hubs in all development plan regions across O‘ahu. The survey consisted of multiple-choice questions, rating questions, and open-ended questions. Unless stated otherwise, all ranking questions included in the survey are ranked on a scale of 1 to 10, with 1 being the lowest and 10 being the highest ranked value. A copy of the survey questions is listed in Appendix B.

The survey asked participants to rank their support level for establishment of Community Resilience Hubs in both normal and emergency situations. It asked how often participants use specific types of community-based facilities and community-based or government supported programs. The survey also asked participants to mention services and facilities they feel are currently missing in their community. Demographic information, including age, gender, ethnicity, household size, and annual household income, were all collected as part of the study. Additionally, participants were given the opportunity to provide additional comments at the end and to join a listserv to be notified of project updates and future engagement opportunities. The consent form is provided in Appendix C.

The survey was distributed via an online platform Qualtrics, to collect information anonymously. Participants have to be at least 18 years old and residents of O‘ahu. The survey took about 10–15 minutes to complete and could be done on a computer or a mobile device. At the beginning of the survey, participants were given a consent form explaining the study’s purpose, process, risks, and option to stop at any time.

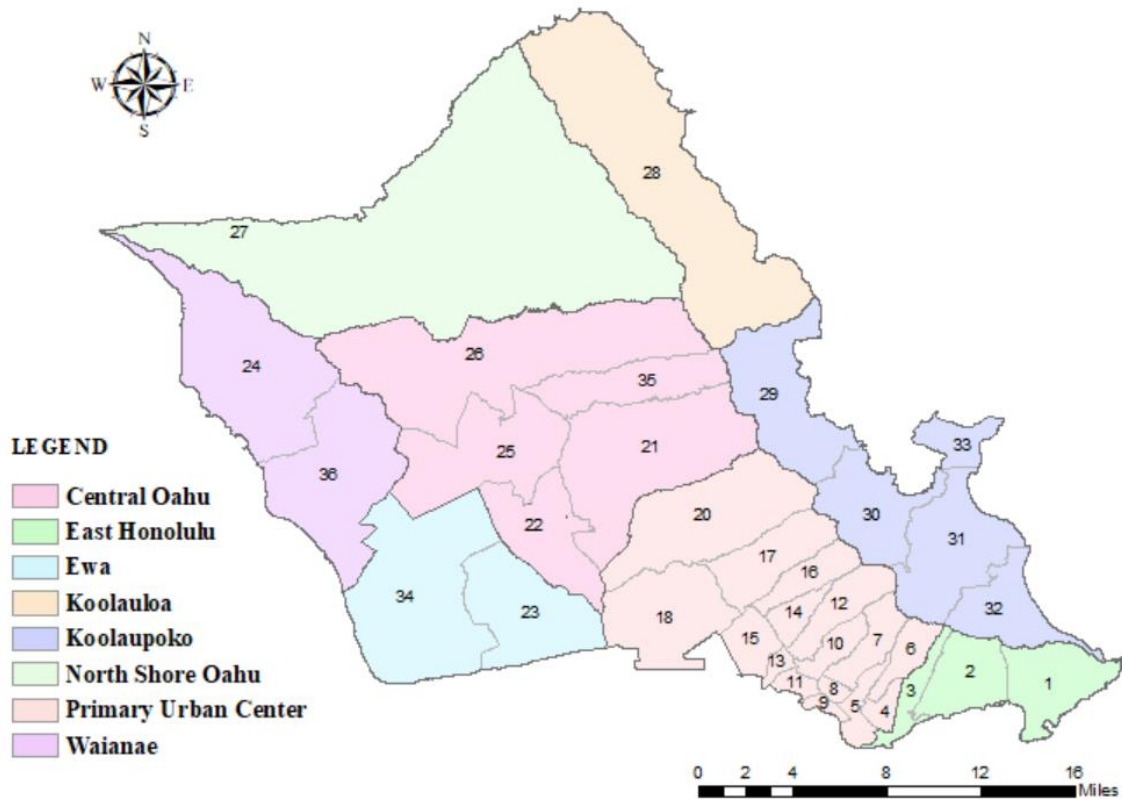
Given a population of 984,821 on O‘ahu (State of Hawaii Databook 2020), to ensure a statistically 10% confidence interval at the 95% confidence level, we aim to target a minimum of 97 responses islandwide. Given that the range of the population in each of the development plan areas is between 15,092 and 403,299 (State of Hawai‘i Databook, 2020), to ensure a +/- 10% confidence interval at a 95% confidence level at the neighborhood level, we targeted a minimum of 25 responses per development plan area for this report. The following neighborhoods are organized according to the O‘ahu

Neighborhood Board system and the boundaries of each development plan area (Table 2). Meanwhile, Figure 3 shows the boundaries of O‘ahu’s eight development plan areas and the neighborhoods within each plan area.

**Table 2.** Neighborhoods by development plan area

Development Plan Area	Neighborhoods
Central O‘ahu	Pearl City, Waipahu, Mililani/Waipi‘o/Melemanu, Wahiawā-Whitmore Village, Mililani Mauka/Launani Valley
East Honolulu	Hawai‘i Kai, Kuli‘ou‘ou-Kalani Iki
‘Ewa	‘Ewa, Makakilo/Kapolei/Honokai Hale
Ko‘olauloa	Ko‘olauloa
Ko‘olaupoko	Kahulu‘u, Kāne‘ohe, Kailua, Waimanalo
North Shore	North Shore
Primary Urban Center	Wai‘alae-Kahala, Kaimuki, Diamond Head/Kapahulu/St. Louis Heights, Palolo, Mānoa, McCully/Mo‘ili‘ili, Waikīkī, Makiki/Lower Punchbowl/Tantalus, Ala Moana/Kaka‘ako, Nu‘uanu/Punchbowl, Downtown-Chinatown, Liliha/Pu‘unui/Alewa/Kamehameha Heights, Kalihi-Palama, Kalihi Valley, Aliamanu/Salt Lake/Foster Village, ‘Aiea
Wai‘anae	Wai‘anae, Nānākuli-Mā‘ili

## NEIGHBORHOOD BOARDS AND DEVELOPMENT PLAN AREAS



**Figure 3.** The neighborhood boards by development plan areas (Data source: City & County of Honolulu).

## Pre-Testing and Survey Distribution

The islandwide survey was finalized after a series of consultations and pre-testing with relevant partners to the Community Resilience Hub initiative, such as the Neighborhood Board Commission, the Ola O‘ahu Resilience Strategy Bouncing Forward Committee, several faculty and staff from Kapi‘olani Community College, members from CCSR, and the Ko‘olauloa Resilience Hub Action Team. The survey was distributed for pre-testing from March 9th to 20th, 2022. Feedback from the City Department of Emergency Management, City Department of Community Services, and City Office of Economic Revitalization from an interagency meeting were also collected. All survey feedback was summarized and used to revise the survey accordingly. The survey was finalized on April 7th, 2022, and received IRB approval.

The survey was formally launched on April 14th, 2022 and distributed online across the island of O‘ahu using a snowball sampling method. To increase geographical and demographic diversity, the survey was distributed through a variety of channels. With the help of the O‘ahu Neighborhood Board Commission, the survey was first distributed through the thirty-three active Neighborhood Boards around the island. The survey was further distributed to city and state government departments, legislative members, CCSR advisory committees, community preparedness groups, and various

community-based organizations and non-governmental organizations in each development plan area.

For communities with low responses, flyers with QR codes to online surveys and paper versions of the survey were also distributed in public gathering places and community facilities. The survey link and a digital version of the flyer were also posted on social media platforms such as Facebook, Instagram, and NextDoor. The survey will remain open throughout Phase II to get as many responses as possible. Phase II will have a series of in-person and virtual workshops and discussion forums where residents will have another opportunity to complete the survey if they have not done so.

# Survey Findings

## Key findings

A total of 896 survey responses were collected by April 10, 2023, the day survey was closed. The majority of survey respondents are residents and have lived in the community for 20 years or longer. The survey also has a good representation of Native Hawaiians and other Pacific Islanders as well as other vulnerable groups such as the elderly and women's population.

Overall, the support rate for Community Resilience Hubs is 82.5% or higher across all development plan regions, with Ko'olauloa recording the highest support (96.0%) and North Shore (72.4%) being the lowest. Respondents ranked support for Community Resilience Hub for operation during emergency situations higher than during normal situations. Schools and parks were the most frequently mentioned facilities to serve as Community Resilience Hubs. Food distribution and emergency telecommunications were the top expected functions of Community Resilience Hub during emergency operations, while there was no strong preference for a particular function during normal operation.

## Survey response overview

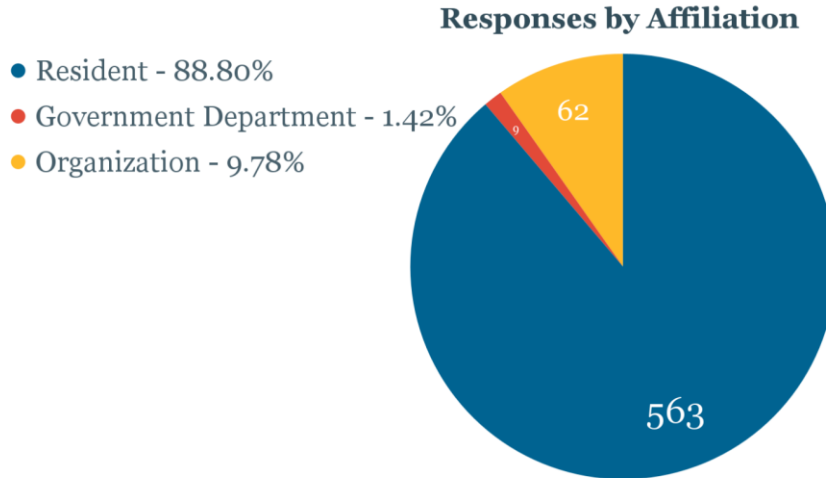
The following demographic data is summarized using descriptive statistics to provide an overview of the survey responses:

- Participants' affiliation
- Length of residence
- Age and gender
- Ethnicity
- Household size
- Annual household income

## Participants' Affiliation

Out of the 896 survey respondents, 634 of them have answered their affiliations. The majority (88.8%) of the respondents are residents, with the rest coming from either community organizations (9.8%) or government departments (1.4%) (Figure 4).

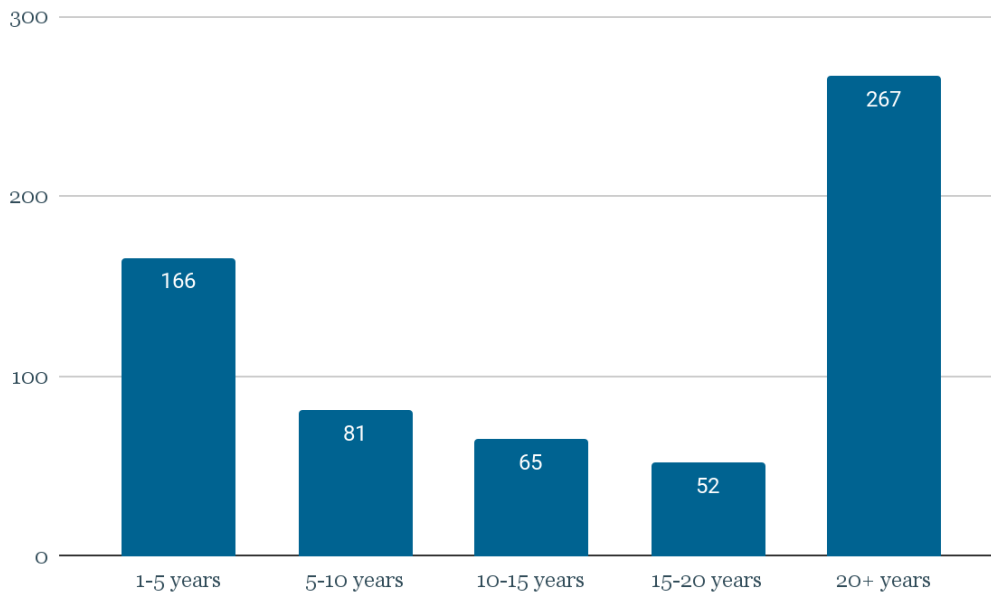




**Figure 4.** Overview of survey responses by participants' affiliation

### Length of Residence

Of the total respondents (631 out of 896 respondents), 42.3% have lived in their community for 20 years or longer, followed by 26.3% who have lived in the communities between 1-5 years, and 31.4% in between. Overall, there is a good balance of long-time and new residents, with the median length of residence among participants being four years (Figure 5).



**Figure 5.** Length of residence among survey respondents

## Age and Gender

Among the 896 respondents, the 436 provided their age information. The most frequently occurring (24.4%) age group is 65+ years old, followed by 19.5 % of respondents between the ages of 55 and 64 years old, and 16.3% between the ages of 35 and 44 years old. There is a reasonably even distribution of middle-aged residents, while the participation of the young population is relatively low (Figure 6). Among the XX respondents who provided their gender information, the majority (56.6%) of the survey respondents are female (Figure 7).

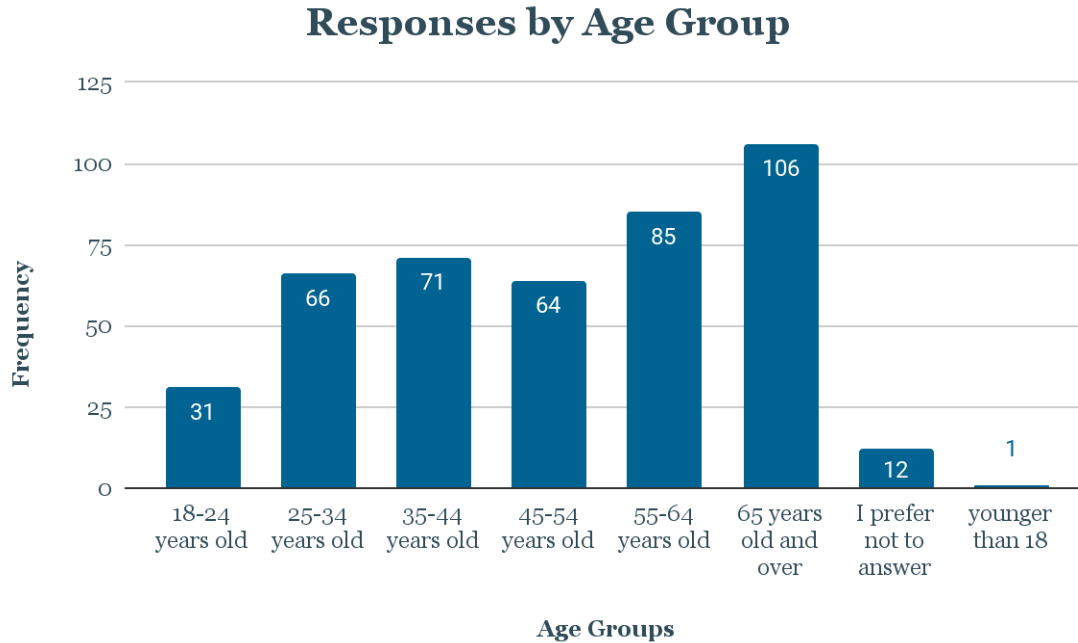


Figure 6. Age distribution among survey respondents

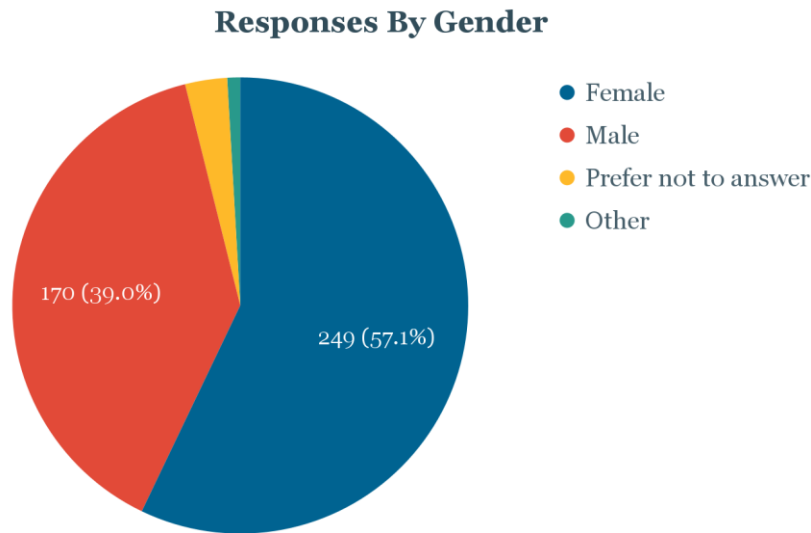


Figure 7. Survey respondents by gender

## Ethnicity

Out of total respondents, 437 provided ethnicity information, the top three ethnicities from the survey are White (30.6%), Native Hawaiian (23.0%) and Asian (11.6%). Figure 8 compares the ethnicities of the survey respondents to the expected count of ethnicities based on the City and County of Honolulu population data (U.S. Census Bureau, 2021). In comparison to the expected count, there is a good representation of White and Native Hawaiians and other Pacific Islanders in the survey, while Asians, Black or African, and Hispanics are relatively underrepresented.

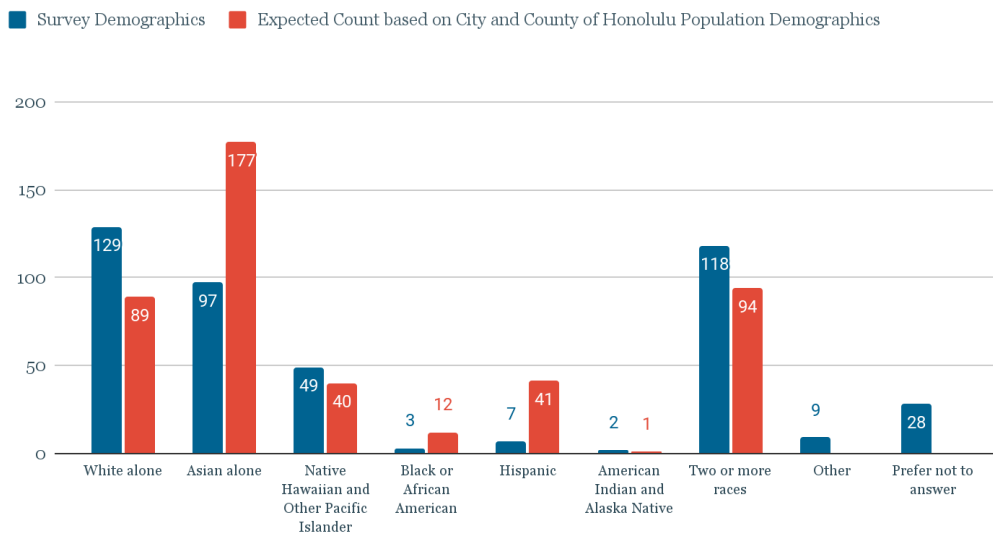


Figure 8. Ethnicities among survey respondents

## Household Size

Out of the 438 respondents who provided household size information, two-person households are the most frequently occurring (30.1%) in the survey, followed by three-person households (17.6%) and four-person households (17.4%) (Figure 9). The median household size is three persons compared to the average household size in Honolulu County of 2.97 persons (U.S. Census Bureau, 2019).

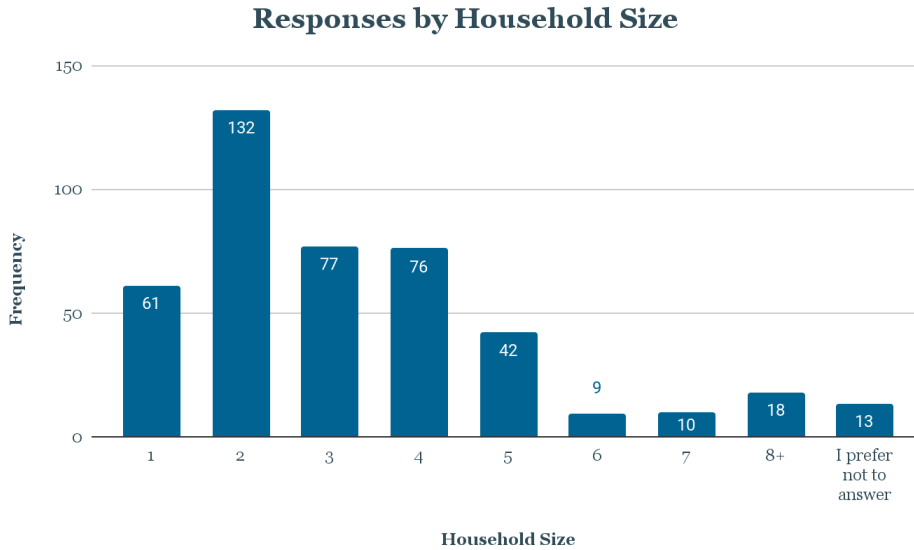


Figure 9. Household size among survey respondents

## Annual Household Income

Out of the 438 respondents who provided income information, the median household income of the survey respondents is in the range of \$90,001 to \$110,000 (Figure 10), which is close to the median income in Honolulu County of \$87,722 (U.S. Census Bureau, 2021). However, this data might be biased as many participants (20.7%) chose not to reveal their income bracket.

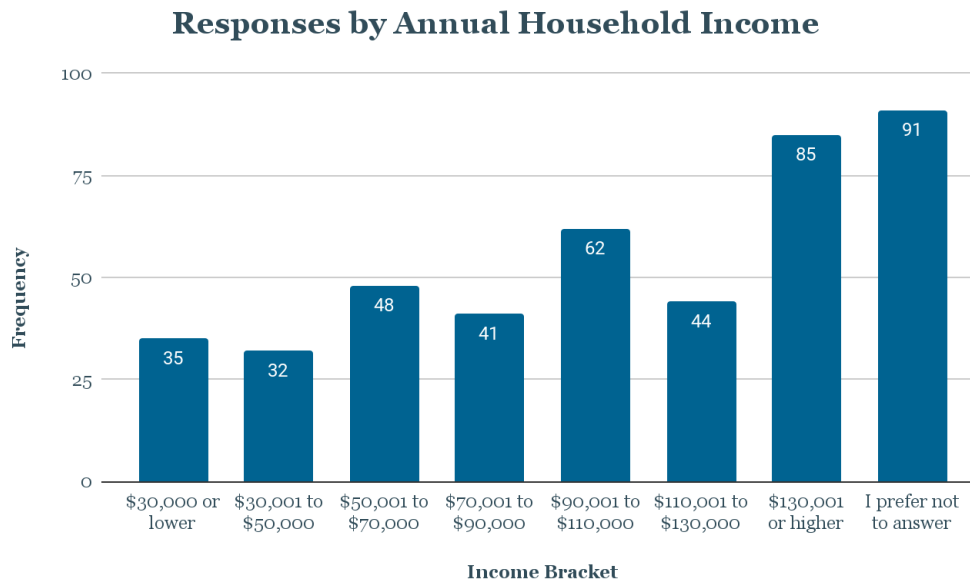


Figure 10. Household income among survey respondents

# Survey Analysis by Development Plan Area

## Responses by Development Plan Area

Based on the 607 respondents who provided their neighborhood information, the Primary Urban Center (PUC) has the most responses (36.6%), whereas Wai‘anae has the fewest, accounting for only 6.1 % of total respondents. The percentage of responses from the other development plan areas is uniformly distributed, ranging from 6.6% to 12.0%. Compared to the population distribution, Ko‘olauloa, North Shore, East Honolulu, Wai‘anae, Ko‘olaupoko and Primary Urban Center development areas are well represented, and ‘Ewa and Central O‘ahu are relatively underrepresented (Table 3).

**Table 3.** Development Plan Areas Population and Survey Responses (Data Source: 2020 State of Hawaii Data Book)

Development Plan Areas	Development Plan Areas Population	Development Plan Areas Population %	Development Plan Areas Survey Respondents	Development Plan Areas Survey Respondents %
Central Oahu	210139	21.34	66	10.9
East Honolulu	54292	5.51	52	8.6
Ewa	121520	12.34	56	9.2
Koolauloa	15092	1.53	61	10.0
Koolaupoko	112829	11.46	73	12.0
North Shore Oahu	17679	1.80	40	6.6
Primary Urban Center	403299	40.95	222	36.6
Waianae	49971	5.07	37	6.1

## Overall Support for Community Resilience Hubs

On average, 94.8% of respondents indicated some level of support for Community Resilience Hubs, while only 5.2% indicated they do not support it (Figure 11).

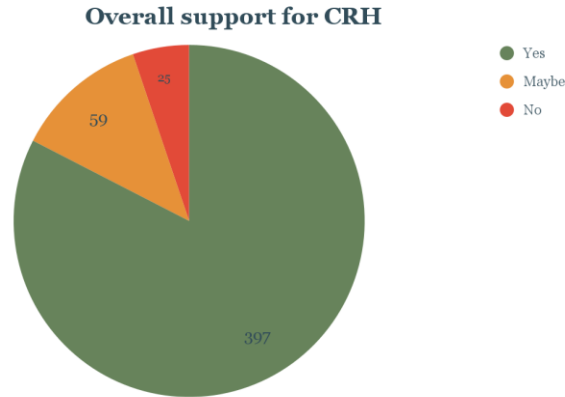


Figure 11. Overall support levels for the establishment of Community Resilience Hubs on O’ahu by survey respondents.

In terms of regional distribution, the overall average support rate for Community Resilience Hubs is 82.6% or higher across all development plan regions. Ko’olauloa has the greatest support with 96.2%, while East Honolulu has the lowest support with 73.7% (Figure 12).

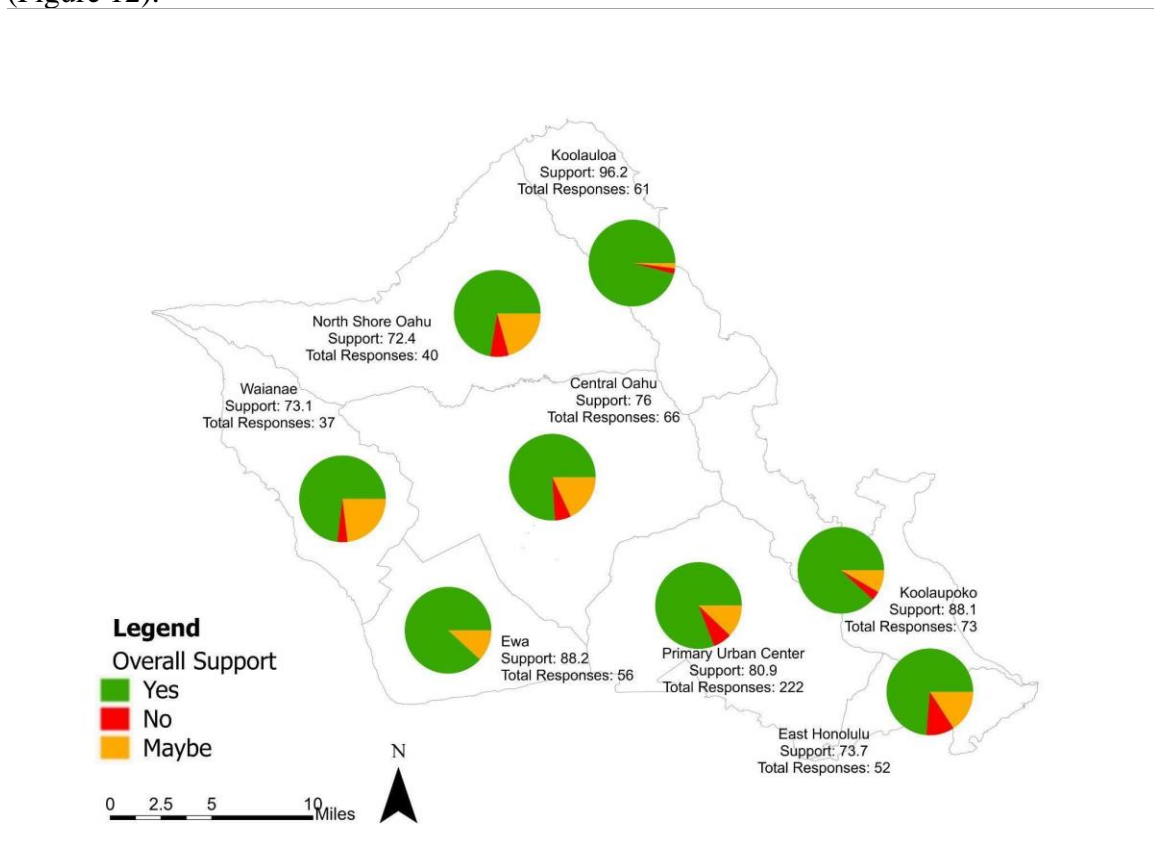


Figure 12. The number of responses and support levels in each development plan area for establishing Community Resilience Hubs

The support levels under normal and emergency situations are also evaluated on a scale of 1 to 10, with 1 being not supportive and 10 being strongly supportive. Across the island, people on average have a support rating of 8.6 for Community Resilience Hubs under emergency situations, which is higher than the support level of 7.8 under normal situations. This indicates that the respondents are more likely to support the establishment of a Community Resilience Hub for operation during emergency situations. Again, Ko‘olauloa has the highest level of support under both normal and emergency situations, while East Honolulu has the lowest level of support under both normal and emergency situations (Figure 13).

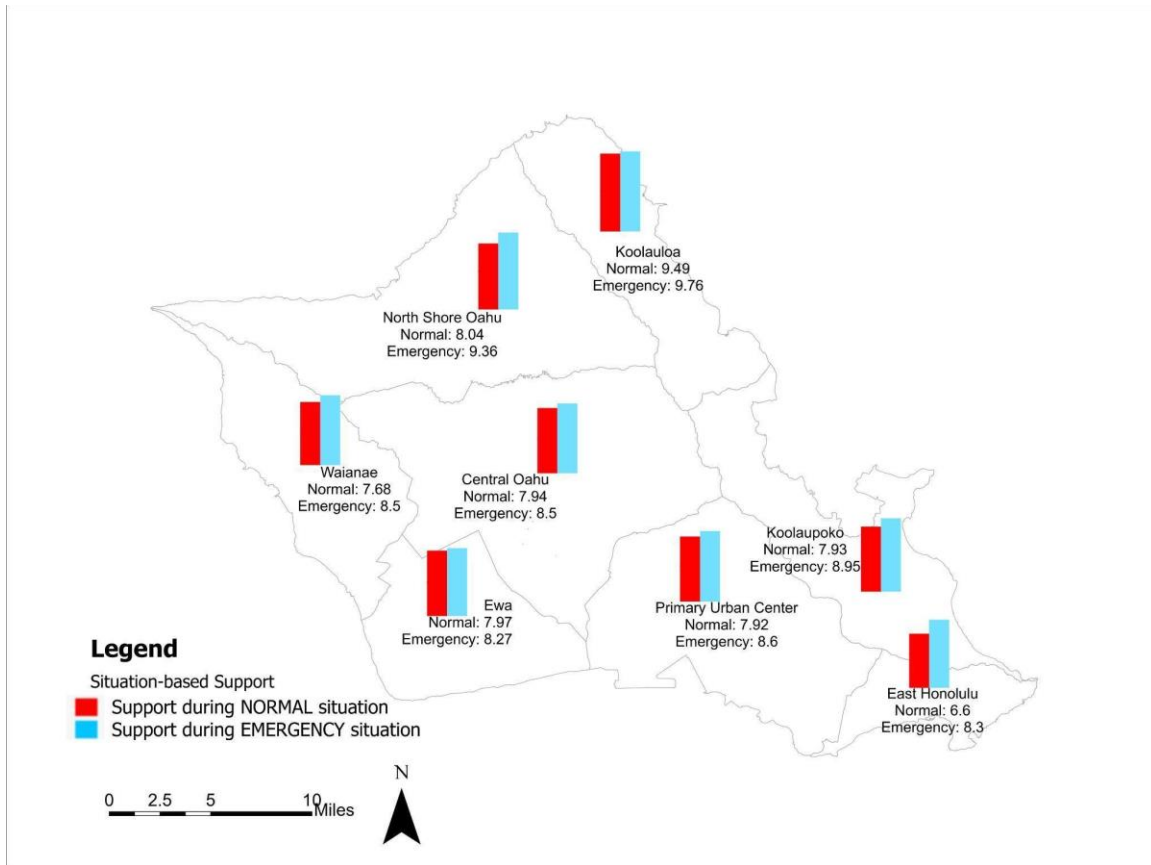


Figure 13. Support for the establishment of Community Resilience Hubs under normal and emergency situations.

## Expected Objectives and Functions

The survey provides insight on the expected objectives and functions of Community Resilience Hubs under both normal and emergency scenarios. To understand the priority and potential tradeoffs, respondents compared two factors through a pairwise comparison scale as shown in Table 4. The resulting weights are calculated based on the principal eigenvector<sup>1</sup> of the comparison matrix and are also shown in Table 4.

<sup>1</sup> Principle eigenvector, known in mathematics to be unique to within a positive multiplicative constant, is the only possible candidate in the quest for deriving priorities (Saaty, 2003).

**Table 4.** Calculation of weights based on the principal eigenvector of the comparison matrix

Priorities	Extremely More Important	Much More important	Moderately More Important	Slightly More Important	Equally Important	Slightly Less Important	Moderately Less Important	Much less Important	Extremely less Important
Corresponding Scale	9	7	5	3	1	1/3	1/5	1/7	1/9
Calculated Weight	90%	87.5%	83%	75%	50%	25%	16.70%	12.50%	10%

### **Vulnerable Population versus General Population**

Respondents assigned priority values using the pairwise comparison scale for the service population between people with special needs (e.g., low-income households, people experiencing homelessness, people of color, the elderly, the chronically ill and disabled, and non-English speakers) versus the general public (area residents and community as a whole). In all the development plan areas except for the PUC, the weight of the general population is higher than the vulnerable population. This indicates that overall respondents in general expect the hubs to prioritize the public, residents, and whole community over primarily serving populations in special need (50.1% to 26.7%), and 23.3% would like an equal balance between the general public and those in need (Figure 14).



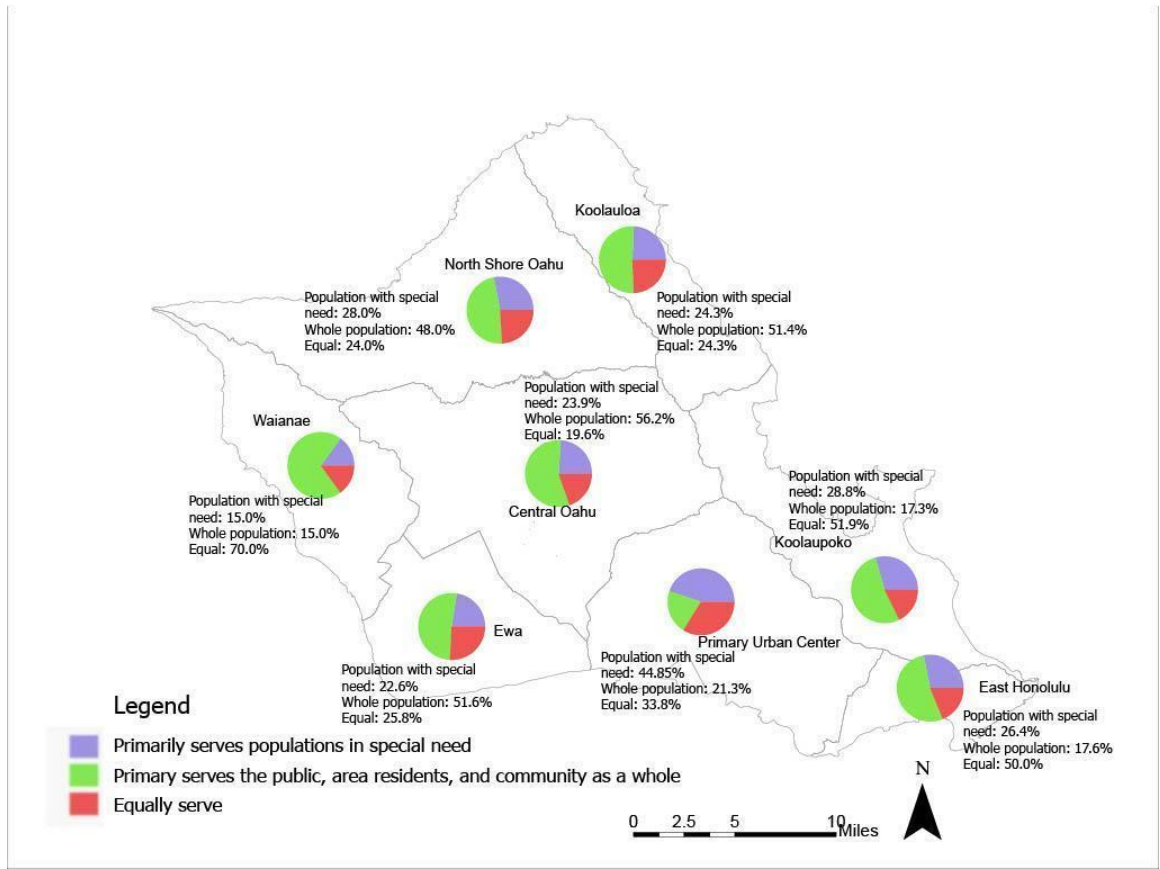


Figure 14. Priority score for Targeted Service Population

### Consistent Operation versus Flexible Operation

Respondents compared the tradeoffs between maintaining consistent functions versus flexibility in changing operations as new needs and opportunities arise. In all of the development plan areas, people prefer flexibility in changing operations over consistent operations (on average 46.9% to 32.3%), with the rest (20.8%) would like a balance between the two, indicating a strong preference for Community Resilience Hubs to adopt different functions based on the future situation and available opportunities (Figure 15).

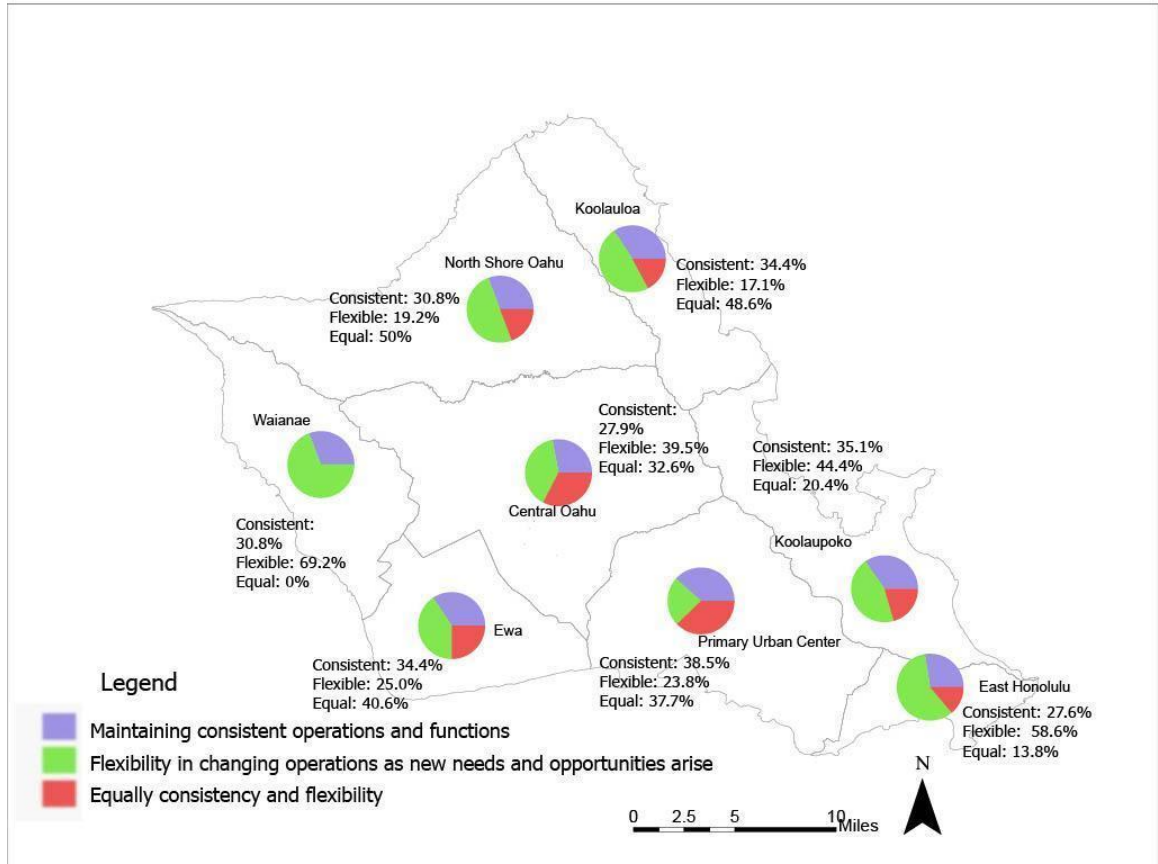


Figure 15. Priority Scores for Maintaining Consistent Functions versus Flexibility in Changing Operations

### Expected Functions during Normal Situations

There is no significant variation in the average scores of the expected functions of Community Resilience Hub on a typical day in the community. Commercial kitchens and restrooms are ranked comparatively lower in all development plan areas. Overall, for typical day-to-day operations, there is no strong preference for a particular function over another in all development plan areas (Figure 16).

At the islandwide level, the mean score for each of the expected functions of Community Resilience Hubs in a normal situation is:

1. Renewable energy generations (M = 7.9, SD = 0.5)
2. Local food production and/or distribution (M = 7.9, SD = 0.7)
3. Community meeting and program (M = 7.7, SD = 0.8)
4. Informational bulletins and announcements (M = 7.5, SD = 0.7)
5. Place to access air conditioning, internet, or electricity (M = 7.5, SD = 0.7)
6. Commercial kitchen and restrooms (M = 7.2, SD = 1.0)

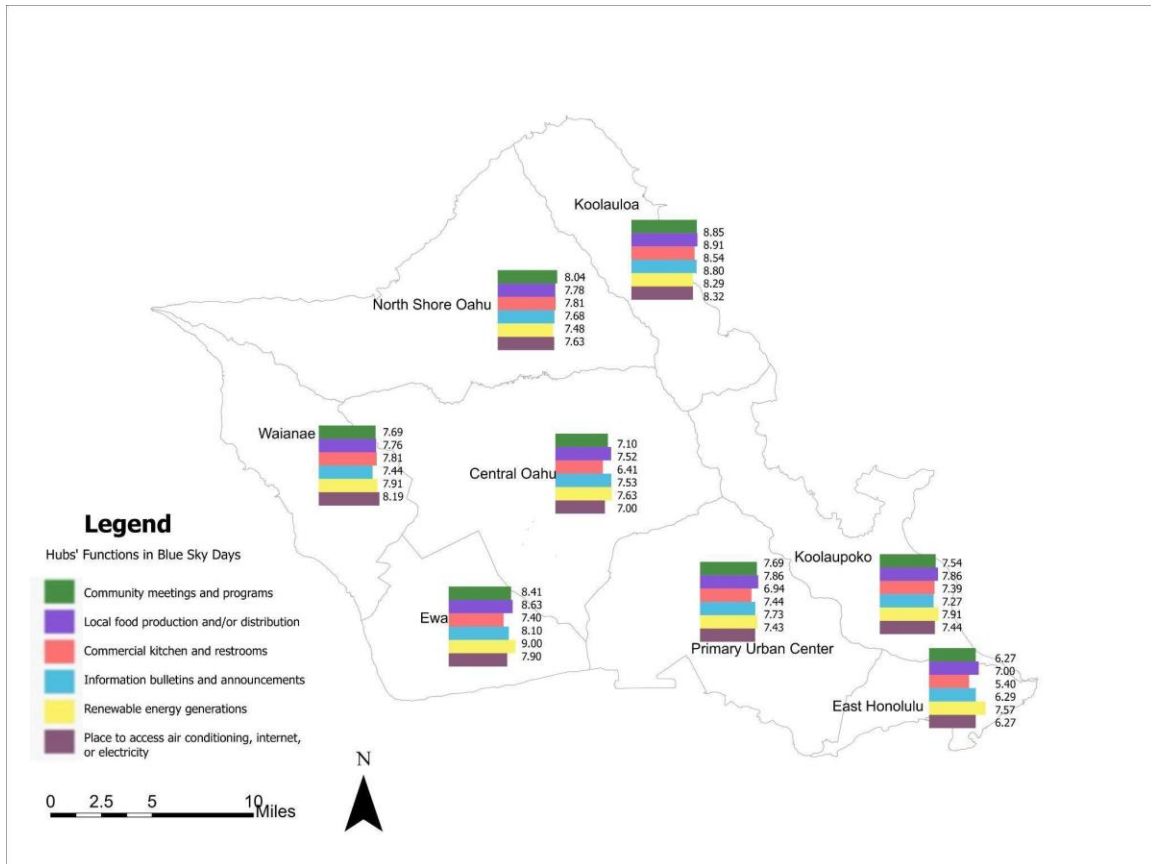


Figure 16. Expected functions of Community Resilience Hubs during normal situations.

### Expected Functions during Emergency Situations

However, there are variations among the expected functions of Community Resilience Hubs during a disaster or emergency. Food distribution and potable water have the highest average scores in almost all the development plan areas. The average score for “emergency telecommunications” (e.g., a radio that connects with government officials and other communities) is second in all of the development plan areas, while spare clothing and toiletries are the least preferred among the options (Figure 17). This indicates that the respondents expect Community Resilience Hubs to function primarily as food distribution and emergency telecommunication centers under emergency scenarios.

Across the island, the mean score for each of the expected functions of Community Resilience Hubs under emergency situations is as follows:

1. Emergency Telecommunications: (M = 9.3, SD = 0.3)
2. Food distribution and potable water: (M = 9.3, SD = 0.4)
3. Backup solar battery storage and charging stations: (M = 8.9, SD = 0.3)
4. Support services (e.g. childcare and medical services): (M = 8.7, SD = 0.4)
5. Spare clothing and toiletries: (M = 7.9, SD = 0.5)

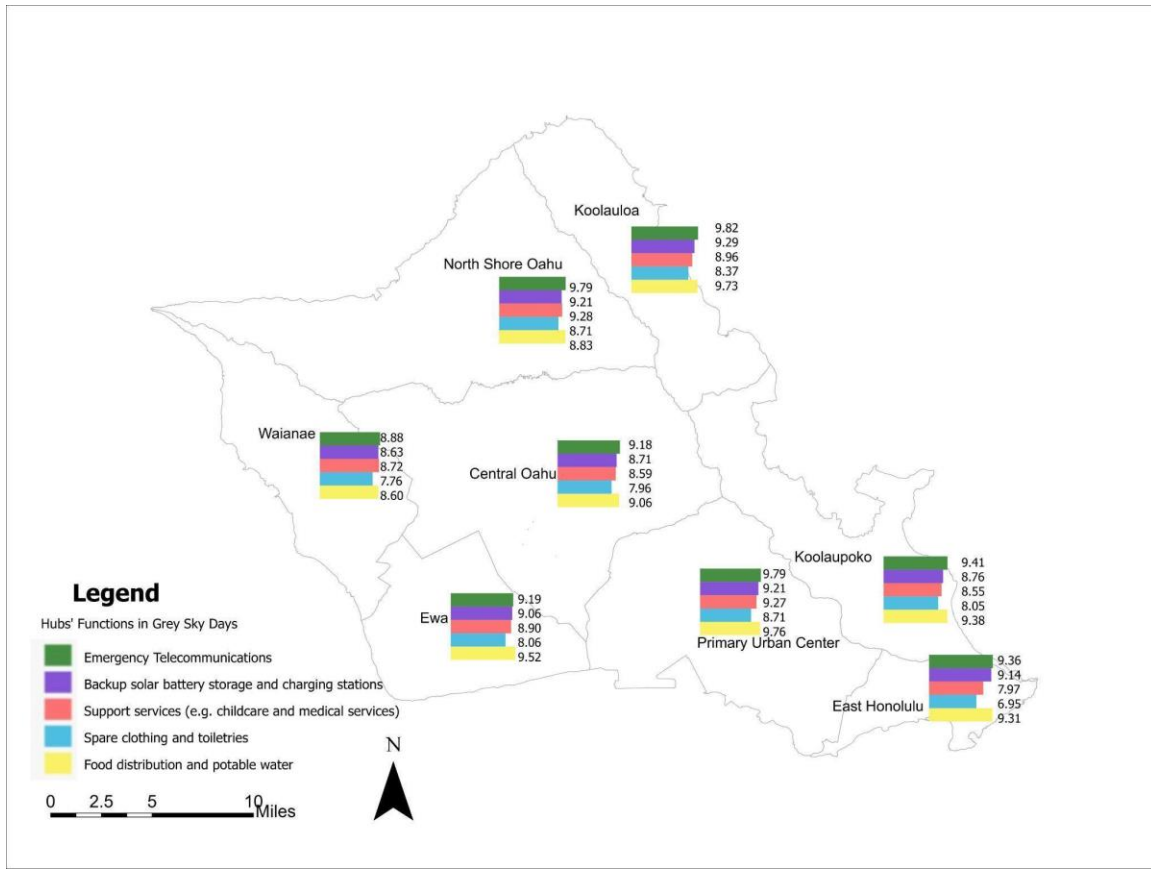


Figure 17. Expected functions of Community Resilience Hubs in emergency situations.

## Frequency of use of Community Facilities

In most of the development plan areas, the average score for shopping areas was the highest, followed by recreational facilities and parks. Government facilities scored the least in all of the development plan areas (Figure 18).

At the island level, the mean score for each of the expected functions of Community Resilience Hubs in a normal situation is as follows:

1. Shopping areas (e.g., malls, farmers markets): (M = 7.3, SD = 0.5)
2. Recreational facilities and parks: (M = 6.5, SD = 0.9)
3. Education facilities (e.g., schools): (M = 6.1, SD = 0.9)
4. Places of worship (e.g. churches, mosques, temples): (M = 5.4, SD = 1.0)
5. Community centers: (M = 4.7, SD = 1.1)
6. Government facilities: (M = 3.9, SD = 0.5)

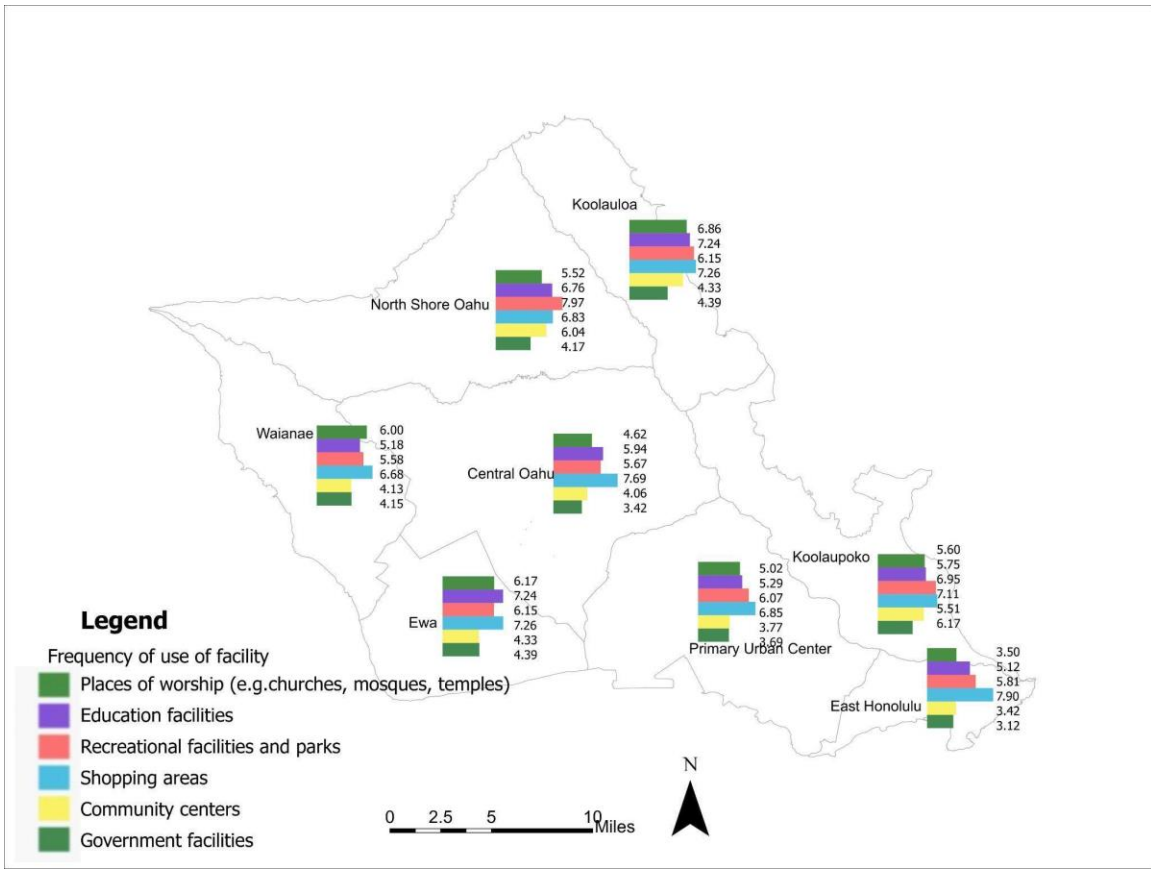


Figure 18. The frequency of use of community facilities by development plan areas

## Preferred Location of Community Resilience Hubs

### Trusted by Residents versus well-known to Visitors

With regards to the criteria for site selection, respondents were asked to assign priority values between two options: 1) trusted and accepted by residents; or 2) well known by people new to the area, visitors, or non-residents. In all of the development plan areas, the weight for the “trusted and accepted by residents” option scores higher than that of being “well known for visitors” (Figure 19). This indicates that respondents prefer Community Resilience Hubs to be located in a place that is trusted and accepted by residents rather than one that is well known and popular among visitors.

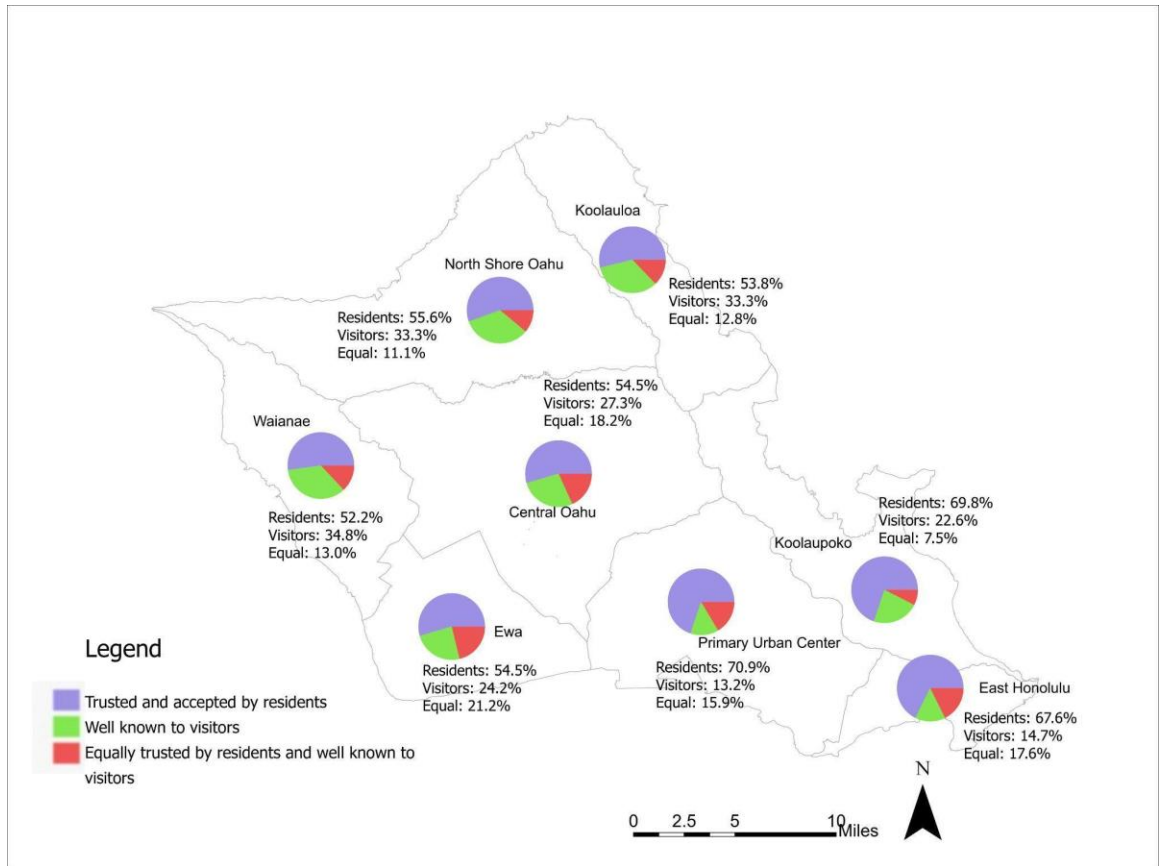


Figure 19. Priority Score for Site Selection Criteria: Trusted and accepted by residents versus well known to visitors

### Proximity to critical infrastructure

All the development plan areas, except for Central O‘ahu and Wai‘anae, rank community facilities as the highest, followed by emergency response centers. Government buildings are ranked either the lowest or second-lowest in all the development plan areas. In summary, respondents prefer Community Resilience Hubs to be located close to community facilities such as community centers, churches, public parks, etc., followed by emergency response facilities such as police, fire stations, etc. (Figure 20).

At the islandwide level, the mean score for each of the expected functions of Community Resilience Hubs in a normal situation is:

1. Community facility (e.g. community center, public parks): (M = 7.6, SD = 0.6)
2. Emergency response center (e.g., police or fire stations): (M = 7.4, SD = 0.6)
3. Medical facilities (e.g., hospitals, clinics): (M = 6.9, SD = 0.6)
4. Food production and distribution center: (M = 6.5, SD = 0.6)
5. Designated emergency shelter or homeless shelter: (M = 6.4, SD = 0.5)
6. Government buildings (e.g. libraries, state buildings): (M = 6.1, SD = 0.3)

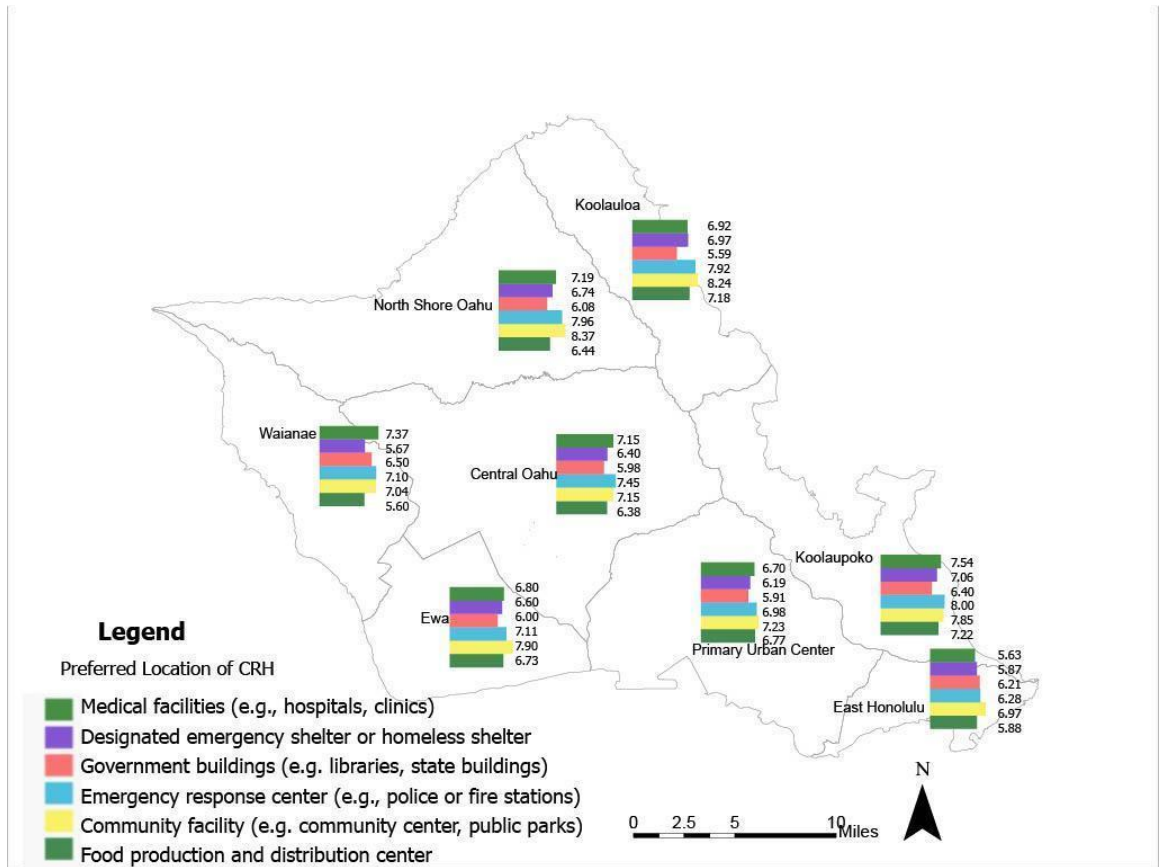


Figure 20. Preferred Locations of Community Resilience Hubs in terms of proximity to critical infrastructure

### Multimodal Accessibility versus Automobile Accessibility

Next, respondents were asked to assign priority values between multimodal accessibility (e.g., in a walkable environment, with bike facilities, and/or near bus stops) versus automobile accessibility (e.g., having good roadway access, available space for vehicle parking, or drive-through access). The survey results show differences in transportation access preferences across the development plan areas. The weight for multi-modal accessibility scores higher in Ko‘olauloa, Wai‘anae, PUC, Ko‘olaupoko, and Central O‘ahu communities, while automobile accessibility are considered to be equally or more important in the East Honolulu, North Shore, and ‘Ewa communities (Figure 21). In general, regions near the urban center and rural areas prefer Community Resilience Hubs with more multimodal access. Regions in central suburban areas, second city Kapolei, and North Shore areas prefer Community Resilience Hubs with more automobile access.

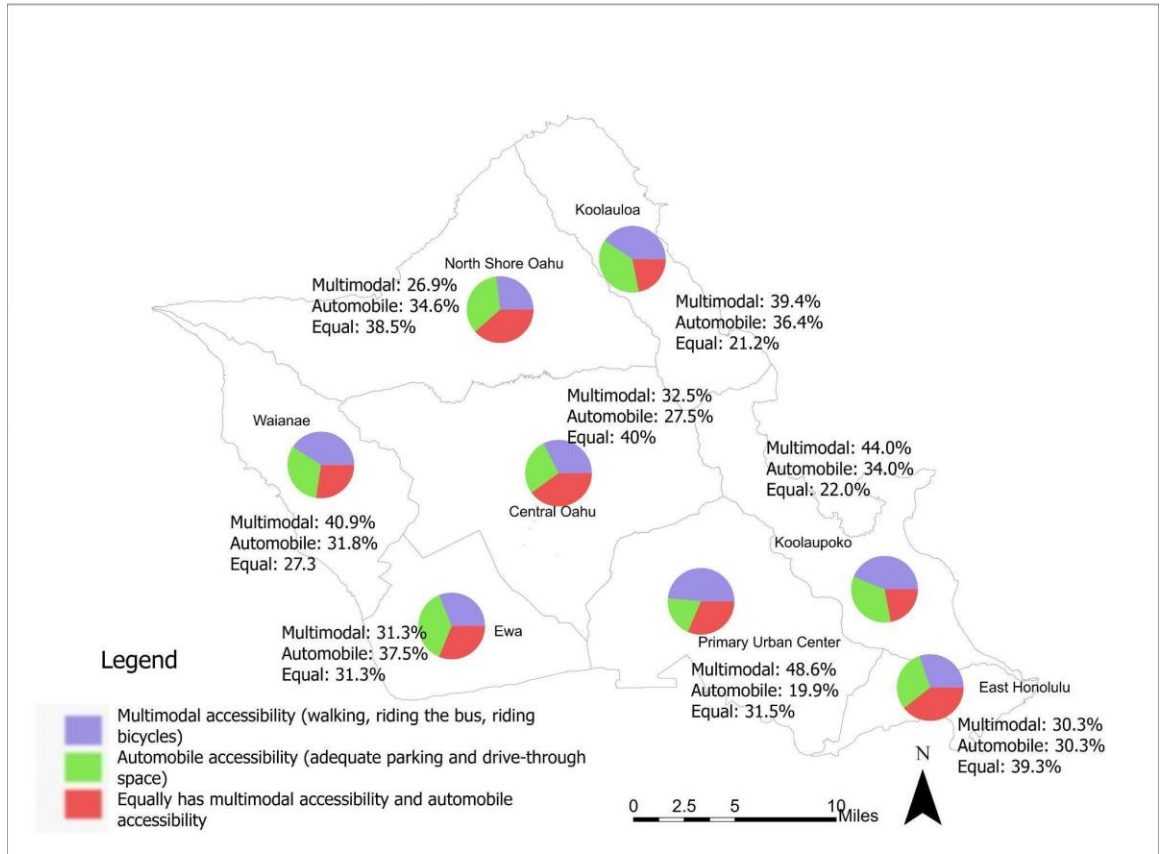


Figure 21. Priority Score for Transportation Access Criteria: Multimodal accessibility versus Automobile accessibility.

## Relevant Community Facilities and Community-based Programs

In an open-ended question, respondents were asked to list relevant sites or facilities in their community that could potentially serve as Community Resilience Hubs as well as relevant community-based or government-supported programs. The frequency counts of the top 15 most frequently mentioned facilities and programs are summarized in Table 5.

**Table 5: Frequently mentioned community** community facilities and community programs associated with the Community Resilience Hubs.

	Facilities	Counts		Program/Organizations	Counts
1	Parks	81	1	Food Distribution	36



2	School	67	2	Disaster preparedness fair	23
3	Community Center	26	3	Donation Drive	19
4	Library	26	4	Healthcare	17
5	Church	21	5	Visiting church	9
6	Shopping Center	15	6	Key Project	7
7	Medical Facility	14	7	Gardening	6
8	Police Station	13	8	Childcare	5
9	Key Project	13	9	Recreational Activity	4
10	Fire Station	12	10	YMCA	4
11	Recreation Center	11	11	Training and support	4
12	Homestead Road property	9	12	Cultural activities	4
13	University of Hawaii	9	13	Board meetings	3
14	Open Space	7	14	Community meeting	3
15	Kroc Center	6	15	Farmer's market	1

These community facilities and programs will be mapped to gather community input during the community engagement process in later stages. The specific facilities and programs in each of the development plans are summarized in the tables below. The detailed list of identified locations are summarized by development plan areas in the appendix no.A

## Other Comments

Lastly, respondents were given a chance to share additional concerns and feedback about establishing a Community Resilience Hub as open-ended comments. These comments can be classified into five general categories: overall support, potential partners and programs, objectives and functions, concerns for next steps, and need for education and outreach programs. The following section provides examples of open-ended comments for each category.

## Support for Community Resilience Hubs

Many respondents expressed strong support and the urgency for the establishment of Community Resilience Hubs in their respective communities. For example, individuals provide the following comments:

- “This is the first time I’m hearing about a Community Resilience Hub, and I think it would be a great addition to the community. There should be more attention brought to this idea as I feel a lot of people would benefit towards this.”
- “In Ko‘olauloa most of the homes (85%) are at risk, located in the flood and tsunami zones and/or older homes that will not withstand even a Category 1 hurricane. There are no government facilities that will be adequate to serve the needs of Ko‘olauloa residents (also in flood and tsunami zones or too small). Ko‘olauloa needs a Community Resilience Hub built that is located in close proximity to all the communities.”
- “Having a resilience center within our community is way overdue. As a flood victim, my family and I had nowhere to go for a month.”
- “I think there should be a hub in every community. The services offered should depend on the community's needs, with a possibility to expand for state or community disasters.”
- “Government can't be counted on so citizens in our district must prepare and organize ourselves.”
- “The sooner the better. This community will be at severe risk in the event of a hurricane or tsunami.”
- “The Wai‘anae Coast is more susceptible to being cut-off & isolated from off-coast resources & support. A CRH is definitely needed for our community.”
- “We need a resilience hub as we are in a rural area far from Honolulu and can easily be isolated in the event of a natural disaster. Recent floodings in our community displaced many families leaving them stranded without shelter. marriot Hotel was maxed out and turtle bay out of reach for price for our residents. Residents in our community were asked to open their homes for displaced family. A bigger natural disaster will leave many without shelter, food, and medical supplies. We need a resilience hub!”

## Potential Partners and Programs

In support of the establishment of Community Resilience Hubs, respondents mentioned existing programs and initiatives as well as specific partners and programs that are relevant to engage with. Some of the examples are:

- “Any community resilience hub should collaborate with the Kailua Hawaiian Civic Club to determine the best place for a hub as they know the lay of the land better than anyone. There will definitely be pushback from people if the hub helps the poor (stigma against houseless people) but it's a fight worth fighting!”
- “We used to have the Satellite City Hall mobile van come to the WCA once a week, half day. That would really be helpful. WCA is looking into the possibility of trying to obtain a social worker to help people obtain Quest and other services. The WCA once had a Senior Program supported by the City. This program needs

- to be revitalized, but City and State funding can't be relied on exclusively because they fund programs and then de-fund them.”
- “Wondering if possible, can Community Resilience Hubs be planned for each community? This is a great way to strengthen each communities throughout our island living.”
  - “There needs to be a reliable source to advertise the establishment of the Community Resilience Hub, like partnering with multiple communities. organizations (Wahiawa General, Wahiawā Health, Wahiawā Lions Club, Wahiawā Rotary Club, etc.) in order for community members to know that it's an available resource. It's important to engage with the community, which may be difficult (e.g. homeless).”

## Objectives and Functions

With regards to more specific objectives and functions of Community Resilience Hubs, people contributed many insightful comments and feedback, such as focusing on longtime residents and those in need, concerns for existing homeless issues and crimes, specific functions and resources needed, integration with existing facilities and virtual engagement, and welcoming, accessible, and valued by all community members:

- “People may be hesitant at first about the project and I think many people will have different ideas for the purpose of the hub. I think the main focus should be longtime residents and those in need.”
- “If ‘Community Resilience Hub’ is gaslighting for magnet programs that attract homeless to shelters, food distribution, or transitional housing from outside the community, like “housing first” was for Chinatown, we’re NOT interested. If this is truly for the community to ensure resilience to the impacts from hazardous events regardless of demographics then yes.”
- “professional staff, communications infrastructure, training, multi-agency support, access to up to date info re: status of the disaster, plan for moving from existing facilities to one designed to serve during disaster, volunteers.”
- “What are the reasons for people to stop by the hubs? For events and education? Can all these be replaced by online meetings or videos?”
- “Can the Hub be combined with a swimming pool, recreation center, gym, skateboard park, etc? If so, it should be located at Kahuku Park or the Sugar Mill with plenty of parking”
- “I think there is an ever-growing concern for community safety in regards to crime and homelessness, so a resilience hub must be able to provide support for this without being exclusive or biased.”
- “Ensure the hub is welcoming, accessible and valued by all community members (not just those that are considered at-risk).”
- “CRHs should be careful to not only focus on supporting the needs and deficits of a Community but also on ways to support growth, progress, success and prosperity.”

- “How can the City help to ensure that CERT Teams are functional and serving the community? Being relatively new to CERT, I learned that it is our responsibility to drive this program. There needs to be more provided by the City.”
- “If the Hub has a consistent, sustained purpose other than disaster management, it may be acceptable. Ask the neighbors what the needs are -- and also it should be the base for actions against the 500,000 Koko Head hikers who disrupt and impact the LOCAL neighborhood.”
- “Given the potential for Kamehameha Highway and with limited alternative access, the geographic area to be served by a Community Resilience hub needs to be relatively small. Also, there is no hospital between Castle Hospital and Kahuku. Clinics are primarily in Kaneohe, not further up the coast so access to medical care needs to be added to community Resilience Hubs.”

## Concerns for Next Steps

Respondents also raised concerns about the following steps, including implementation, operation, funding, priorities, frequency of usage, management of partnerships, and leadership. Some criticisms and questions are:

- “Decades of talk; No action.”
- “CRH could be a base where community volunteers could meet and devise direct-action plans instead of waiting and hoping for our government to come through for us.”
- “If the Hub is manned by unqualified, insincere, or incompetent staff, then it would be meaningless. It would just become another ‘business as usual.’”
- “My instinct is why can't the government provide this service as an emergency preparedness method? We pay taxes, why doesn't the government do a better job of protection of its community members during situations like this. If it's a truly community-engaged process, it needs to be funded.”
- “The worst scenario of a community resilience hub is that without people gathering the hub would be just an vacant office space.”
- “Who is going to fund this idea? Who will run it? Will it be run by inefficient agencies? Will it be a Private-Public partnership? Will we see it happen in our lifetime? Where will you find the sites? Will it be in existing dilapidated buildings owned by DAGS? DOE?”
- “Suggest you look at emergency response from current pandemic, and recent natural disasters - 2018 east oahu flood, 2018 volcanic eruptions. A community hub to meet basic needs is ok, but a widespread disaster needs strong leadership at a higher level than each community.”
- “The state seems to protect its businesses and seems to consider residents second. I'm concerned any actions to protect Waikīkī impacts residents in mauka neighborhoods. The value of your work here in my neighborhood can be educating tourists and to assist vulnerable populations make plans for emergencies.”
- “Where would this funding come from? Suggest making use of existing facilities, and even existing organizations/non-profits that are already established in the

community. I think it is important to make good use of public funds and support existing resources to help carry out the functions needed through grants or other support (emergency supplies, central distribution of education resources/information) from the government.”

- “How will overhead costs, if any, be taken care of? How do we ensure safety for the community during times of crisis, and that the facilities won't be abused? Community centers are a target for criminal activity since they may have valuables, how do we protect these assets from malicious activity? How do we ensure the longevity / long-term success of the hub? How can we ensure the community works together instead of against each other?”
- “Elevation-elevation -elevation!!! And accommodations for well over a thousand! Parking will be a BIG problem!!”

### **Needs for Education and Outreach**

There are also comments with concerns about lack of attention or misunderstandings of the concepts of Resilience Hubs, justifying the need for further education and outreach. For example, some of the concerns are:

- “Community engagement, awareness, and acceptance [is needed]”.
- “NIMBY reaction possible.”
- “There seems to be some uncertainty as to what is meant by the Community Resilience center. A building strong enough to withstand a hurricane is not equivalent to a open park or farmer's market.”

# Next Step Recommendations

The following recommendations are proposed to reflect the lessons learned from the Phase I engagement. These actions, if possible, are recommended to be incorporated into the next step of engagement and future efforts to promote diverse participation and inclusion for this important initiative and resilience-related projects in Hawai‘i.

First, **establishing a close partnership** with the O‘ahu Neighborhood Boards and community organizations is very important. Utilizing the O‘ahu Neighborhood Boards through the Commission helps to quickly disseminate the survey across the island in Phase I. In Phase II, the input from the Neighborhood Boards could contribute tremendously to guiding the logistics and activities of the in-person and virtual community workshops. The Neighborhood Boards may also provide valuable information to understand more about their community's existing and future opportunities for Resilience Hub development. Building close relationships with the O‘ahu Neighborhood Boards and communicating with the chairs or chair assistants regularly could help with the community engagement in Phase II. Additionally, building a relationship with the Kupuna Collective is beneficial to identify local kupuna community champions who can help with the in-person planning for the Phase II workshops.

**Next step community workshops are important** for further discussion. It could help to generate more in-depth discussion about the project and help to complement the online distribution of the survey. Distributing survey flyers with QR codes at the community engagement workshops could help to raise awareness of the survey and potentially increase the response rate. Engagement at the commonly used community facilities also provides the opportunity to reach residents of all types of demographics who may be beyond the reach of the neighborhood board contact lists. Community workshops could also allow participants to stay attentive and address their questions if needed. Furthermore, in-person engagement could reach residents who are not knowledgeable in technology or have limited access to WiFi. The findings from Phase I about the commonly used facilities in each development plan areas could be used to develop the engagement plan in Phase II. Paper maps and online maps can be used to further pinpoint people’s preferred locations of Resilience Hubs at community workshops with supplementary information such as hazard exposure, transportation accessibility, population density, existing infrastructure proximity, and regional socioeconomic characteristics.

**Exploring possible incentives** for engagement at community workshops in Phase II may help to increase participation rates. Because Phase II’s engagement involves more active and time-consuming participation from residents, creating a friendly environment for dialogue and decision making may help to keep the conversation going. Some examples of incentives could be exploring options to provide light refreshments to residents participating in in-person workshops.

Lastly, **continuing and expanding upon the educational component** of the emerging community resilience model on O'ahu is important in the long term. For example, connecting students through the Resilience Corps Leadership Award program at Kapi'olani Community College and the Urban and Regional Planning Department (DURP) at the University of Hawai'i at Mānoa with different organizations and specific sites may be a potential expansion. Students may aid in inventorying life-lines and resilience support systems and help with the digitization of critical infrastructures. Partnering up with an educational associated entity such as CERENE or DURP might be helpful to fill in the gaps and offload some pressure on the City. This type of partnership also creates creative opportunities for leveraging other avenues of funding.

# Conclusions

Community Resilience Hubs could be a viable solution for O‘ahu’s communities to increase resilience facing future disaster and emergency impacts and to better serve the community on a day-to-day basis. Based on examples from local and national municipalities, this report first summarizes the concept and potential functions of Community Resilience Hubs. It then provides useful information with regards to people’s perceptions and preferences for Community Resilience Hubs on the island of O‘ahu based on findings from an islandwide survey. Relevant facilities, programs, and resources related to the establishment of Resilience Hubs are also provided.

According to the survey, in general, the majority (82.5%) of the survey respondents are in support of the establishment of Community Resilience Hubs. Ko‘olauloa has the greatest support (96.2%), and North Shore has the lowest support (72.4%). Comparing the support levels under emergency and normal situations, respondents in all eight development plan areas have a higher support rate for emergency situations than day-to-day scenarios. In terms of the specific functions, under normal situations, all development plan areas do not significantly prefer one specific function over another. However, commercial kitchens and restrooms are ranked comparatively lower in each region. Under emergency situations, the majority of the development plan areas prefer to have food distribution and potable water as the top ranked functions, followed by emergency telecommunications, while spare clothing and toiletries are ranked lowest in all regions. With regards to site location preference, while responses in the majority of the development plan areas mention that shopping areas are the most frequently used facilities, followed by recreational facilities and parks, people prefer resilience hubs to be near community facilities (e.g. community centers, churches, public parks) as the top choice, followed by emergency response centers. Government facilities and buildings (e.g., libraries, state and city buildings) are the least used and lowest rated in preference. Regarding the serving population and objectives, all eight development plan areas believe that a Resilience Hub should serve more to the local residents, as well as the ones in need, than visitors or non-residents. Although a desire for the balance between the most vulnerable and the general public is also demonstrated 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.

Finally, with regards to site selection criteria, people in general prefer a location that is trusted and accepted by residents. In regard to transportation access, Ko‘olauloa, Wai‘anae, Primary Urban Center, and Ko‘olaulupoko prefer more multi-modal access, while the East Honolulu, North Shore, Central O‘ahu, and ‘Ewa are equally in need of multi-modal access and automobile access or more in need of automobile access. These findings will be taken into consideration for the next step of suitability analysis. Based on the phase I engagement and survey findings, some recommendations are also provided for the next-phase community engagement and future efforts.



# Appendix A– Specific facilities and programs by development plan areas

## Primary Urban Center

	Facilities		Program/Organizations
1	Pearl Ridge Shopping Center		SNAP (Supplemental Nutrition Assistance Program)
2	Kaka‘ako Farmers Market		2 Neighborhood Board
3	Neal Blaisdell Center		3 Agroforestry
4	McKinley High School		University of Hawai‘i Osher Lifelong Learning Institute
5	State Department of Health		5 Adult Daycare
6	City and County Admin property		6 Club Sports
7	Ala Moana Center		7 Aloha Harvest
8	Pawa‘a Park		8 CSA boxes from local farms
9	Kaka‘ako Waterfront Park		9 Community health care
10	Ala Moana Regional Park		10 Farmers market
11	Red Hill Elementary School		11 Summer school programs
12	Kapahulu Community Center		12 Care homes
13	Kapi‘olani Community College		13 Be Ready Mānoa
14	Ala Wai Community Garden		14 Hawai‘i Bicycling League
15	Kaimuki Community Park		15 Police, fire and ambulance
16	Kalākaua District Park		16 Walmart/Times
17	Kalihi Valley District Park		17 Donation drives
18	Lanakila District Park		18 Kokua Kalihi Valley
19	Lanakila Senior Center		19 We Are Oceania
20	Kalihi-Palama Library		20 Lanakila Meals on Wheels
21	Bishop Museum		21 Biki
22	Open space on Wyllie Ave		
23	UH Mānoa		
24	East West Center		
25	Kalo Place Mini Park		

26	Mānoa District Park			
27	Mo'ili'ili Community Center			
28	Stevenson Middle School			
29	Makiki District Park			
30	Central Union Church			
31	Halau Ku Mana Charter School			
32	Waikiki Community Center			
33	St. Augustine by the Sea			
34	Hawai'i Convention Center			
35	Waikiki Health Center			
36	Paki Hale			
37	Kapaolono Community Park			
38	Liholiho Elementary School			
39	Kalihi Union Church			
40	Queen Kaahumanu Elementary School			
41	Makiki Park			

### Central O‘ahu

	<b>Facilities</b>		<b>Program/Organizations</b>
1	Mililani Town Association Recreation Centers		1 Surfing the Nations
2	Patsy Mink Central O‘ahu Regional Park		Hawai‘i Hazards Awareness and Resilience Program 2 Wahiawa-Whitmore Village
3	Mililani High School		3 Neighborhood Watch
4	Mililani Shopping Center		4 Leeward YMCA
5	Mililani Public Library		5 Mililani Town Association
6	Wahiawa Department of Motor Vehicle		6 Neighborhood Board
7	Wahiawā District Park		
8	Wahiawā Freshwater State Recreation Area		
9	Wahiawā Civic Center		
10	Waipahu Public Library		
11	Hawai‘i Plantation Village		
12	Wahiawā Health		
13	St. Stephen's Episcopal Church		
14	Wahiawā United Methodist Church		
15	Waikele Center		
16	Waipahu Public Library		
17	Waipi‘o Soccer Complex		
18	Hawai‘i Okinawa Center		
19	Crestview Community Park		

## East Honolulu

	<b>Facilities</b>		<b>Program/Organizations</b>
1	Kamilo‘iki Elementary School		1 Livable Hawai‘i Kai Hui
2	Kamilo‘iki Community Park		2 808 Cleanups
3	Kalama Valley Center		3 Ka Iwi Coalition
4	Kaiser High School		4 NextDoor App
5	Koko Head District Park		5 Aloha ‘Āina O Kamilo Nui
6	Hawai‘i Kai Public Library		6 Koko Head Potters
7	‘Āina Haina Public Library		7 Malama Maunalua
8	Wailupe Valley Neighborhood Park		8 ‘Āina Haina Prepared
9	‘Āina Haina Community Park		9 Maunalua Fishpond Heritage Center
10	Former Wailupe Elementary School site		10 Angel Network
11	Wai‘alae Iki Park		11 SNAP (Supplemental Nutrition Assistance Program)
12	Kaiser Permanente Clinic		12 Farmers market
			13 mobile hygiene trailer

**‘Ewa**

	<b>Facilities</b>			<b>Program/Organizations</b>
1	Western O‘ahu Vet Center		1	Child Day-Care
2	Kānehili Community Association Park		2	Goodwill Donation Center
3	The Kroc Center		3	Fundraising, awareness programs
4	UH at West O‘ahu		4	Food distribution
5	Ka Makana Ali‘i Shopping Center		5	Neighborhood Watch
6	Walmart		6	Blue Zones Project Kapolei-Ewa
7	Kapolei Heritage Center		7	Disaster preparedness
8	Department of Hawaiian Homelands		8	Child and Family Services
9	Ewa Queens Medical Center		9	Easter Seals
			10	Hale Kipa

## Ko'olauloa

	<b>Facilities</b>			<b>Program/Organizations</b>
1	Proposed Site on Hau'ula Homestead Road		1	Kupuna programs
2	Kahuku Elementary School		2	Lion's Club
3	Kahuku Medical Center		3	Hau'ula Emergency Leadership Program
4	Ko'olauloa Health Center		4	HECO Appliance Exchange
5	Kahuku Public and School Library		5	Hau'ula Community Association/Hui o Hau'ula
6	Hau'ula Community Center		6	Disaster prep
			7	Farmers market

## Ko‘olaupoko

Ko‘olaupoko			
Facilities			Program/Organizations
1 Kailua District Park		1	OK Poultry LLC
2 Keolu Elementary School		2	Neighborhood Board
3 Waiahole Elementary School		3	Arbor Day tree giveaways
4 Adventist Health Castle		4	Kalama Beach Club
5 Kane‘ohe Beach Park		5	KEY Project
6 Kualoa Regional Park		6	Kupuna Breakfast (KEY Project)
7 Ahuimanu Community Park		7	Tutu and Me (Partners in Development Foundation)
8 Kahalu‘u Community Park		8	Habilitat
9 Valley of the Temples		9	Waimānalo Pono Research Hui
10 Kaiser Permanente Ko‘olau Clinic		10	Waimānalo Hawaiian Homes Association
11 Windward Mall		11	Hui Malama o Ke Kai Foundation
12 Lili‘uokalani Trust - Kīpuka Ko‘olau Poko		12	Limu Hui (Kua Hawai‘i)
13 Waimanalo District Park		13	Ke Kula Nui o Waimānalo
14 Kahalu‘u Elementary School		14	Kama‘āina Kids
15 Waimānalo Health Center		15	Mālama Honua
16 Kualoa Ranch			
17 Kāko‘o ‘Ōiwi			
18 Waimanalo Elementary & Inter			
19 St George Church			

## North Shore

	<b>Facilities</b>		<b>Program/Organizations</b>
1	Wai‘alua High and Intermediate School	1	North Shore Chamber of Commerce
2	Wai‘alua Courthouse	2	Wai‘alua Community Association
3	Sunset Beach Elementary School	3	North Shore Community Land Trust
4	Queen's Health Care Center	4	Waimea Valley
5	Old Sugar Mill	5	Malama Pupukea
6	Sunset Beach Recreation Center	6	Neighborhood Board
7	John K Kalili Surf Center	7	Sunset Beach Community Association
8	Wai‘alua United Church of Christ	8	North Shore Outdoor Circle
		9	Kokua Foundation
		10	Ke Ala Pupukea Bike Path
		11	Fire Station



## Wai'anae

	<b>Facilities</b>		<b>Program/Organizations</b>
1	Community Learning Center at Mā'ili		1 Lyman Ranch
2	Wai'anae Neighborhood Place		2 Pu'u Haleakala Recreation Center
3	Wai'anae Shopping Mall		3 INPEACE
4	former Makaha Valley Resort		4 Electronic recycling
5	Nanakuli High and Intermediate School		5 Neighborhood Board
6	Wai'anae Coast Comprehensive Health Center		6 Social Service
7	Wai'anae Driver Licensing Center		7 Kahumana Farms
8	Nanaikeola Clinic		Wai'anae Valley Homestead Community Association
9	Nanakuli Elementary School		9 Princess Kahanu Estates Association
10	Naval Magazine Pearl Harbor (Lualualei Valley)		10 Honolulu Community Action Program
11	Leihoku Elementary School		
12	Mā'ili Elementary School		
13	Mākaha Community Park		
14	Kaupuni Neighborhood Park		
15	Mākaha Elementary School		
16	Our Lady of Kea'au		
17	Nānākuli Longs Drugs		
18	North Shore Mental Health - Makaha Cornet Building		
19	Lyman Ranch		
20	Pu'u Haleakala Recreation Center		
21	Kahumana Farms		
22	Helelua Recreation center		

## Appendix B– Islandwide Survey

### Community Resilience Hub Action Plan Islandwide Survey

Aloha and mahalo for clicking on this survey! This survey is being delivered by the City and County of Honolulu (City) Office of Climate Change, Sustainability and Resiliency (CCSR). This is the first step in the engagement process to develop an O‘ahu Community Resilience Hub Action Plan, as envisioned in Action 15 of the City’s Ola: O‘ahu Resilience Strategy (2019). The objective of the Resilience Hub Action Plan is to provide recommendations to support current and future community-led efforts in developing Community Resilience Hubs across the island of O‘ahu. The City looks to learn from your input to identify existing and future community resources that could contribute to the development of and/or supporting existing community facilities/organizations. The data from the survey will be used by the City to create a baseline understanding of current partnerships and identify priority needs across different communities.

Networks of Community Resilience Hubs are being developed in communities across the United States including Hawai‘i Island. A Community Resilience Hub is a known gathering space that provides a variety of community resources and services on a day-to-day basis. Community Resilience Hubs can bring people together to organize events, share information, and plan meetings. Community Resilience Hubs may also aid communities with coordinating disaster and emergency response, relief, and recovery efforts.

Community Resilience Hubs are community-led initiatives. Hubs can be supported by local government and other partners, but are primarily managed by residents and community members. As this project progresses, the City will continue to learn how to possibly support community resilience leadership. Your input will help to better understand specific needs and preferences for a Hub in your community.

The survey will consist of multiple-choice questions, ranking questions, and open-ended questions. All questions are voluntary to answer. Please click forward to continue with the survey.

Introduction

1. Are you participating as a resident, or on behalf of an organization or government department?
  - Resident
  - Organization (please specify here \_\_\_\_\_)
  - Government Department (please specify here \_\_\_\_\_)
  
2. What community on O‘ahu do you currently reside in?  
\_\_\_\_\_
  
3. How long have you lived in your community?
  - 1-5 years
  - 5-10 years
  - 10-15 years
  - 15-20 years
  - 20+ years

Community Functions

4. How frequently do you use the following facilities in your community? Please rank the following options from 1 to 10, with 1 being the least frequently used and 10 being the most frequently used.

Places of worship (e.g., churches, mosques, temples)									
Least Frequently					Most Frequently				
1	2	3	4	5	6	7	8	9	10

Education facilities (e.g., schools)									
Least Frequently					Most Frequently				
1	2	3	4	5	6	7	8	9	10

Recreational facilities and parks									
Least Frequently					Most Frequently				
1	2	3	4	5	6	7	8	9	10

Shopping areas (e.g., malls, farmers markets)

Least Frequently Most Frequently

---

1      2      3      4      5      6      7      8      9      10

Community centers

Least Frequently Most Frequently

---

1      2      3      4      5      6      7      8      9      10

Government facilities

Least Frequently Most Frequently

---

1      2      3      4      5      6      7      8      9      10

Others (Please specify here \_\_\_\_\_)

Least Frequently Most Frequently

---

1      2      3      4      5      6      7      8      9      10

5. What community-based or government-supported programs in your community do you and your neighbors currently utilize? Please provide below the leading organization and what type of services they provide. Examples of services may include, but are not limited to, childcare, donation drives, food distribution, disaster preparedness, and community healthcare.
  
6. Are there services or programs that are missing in your community that you and your neighbors would benefit from? If so, please write them below.

Community Resilience Hubs

7. How supportive are you of the establishment of a Community Resilience Hub in your community under the following scenarios? Please rank the following scenarios from 1 to 10, with 1 being not supportive and 10 being strongly supportive.

For day-to-day operations  
(e.g., community services, programs, and events or activities)

Not supportive Strongly Supportive

---

1      2      3      4      5      6      7      8      9      10

For disaster and emergency operations  
(e.g., preparedness, response, recovery)

Not supportive Strongly Supportive

---

1      2      3      4      5      6      7      8      9      10

8. What functions do you think a Community Resilience Hub should provide on a typical day in your community? Please rank the following options from 1 to 10, with 1 being not important at all and 10 being extremely important.

Meetings and programming based on community interest and need

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

Informational bulletins and announcements

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

Local food production and/or distribution

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

Renewable energy generation

Not Important at all		Extremely important							
1	2	3	4	5	6	7	8	9	10

Commercial kitchen and restrooms

Not Important at all		Extremely important							
1	2	3	4	5	6	7	8	9	10

Place to access air conditioning, internet, or electricity

Not Important at all		Extremely important							
1	2	3	4	5	6	7	8	9	10

Other (Please specify here \_\_\_\_\_)

Not Important at all		Extremely important							
1	2	3	4	5	6	7	8	9	10

9. What functions do you think a Community Resilience Hub should provide during a disaster or emergency in your community? For instance, imagine if a natural disaster such as a major flood or a hurricane impacts your community. Please rank the following options from 1 to 10, with 1 being not important at all and 10 being extremely important.

Emergency telecommunications  
(e.g., a radio that connects with government officials and other communities)

Not Important at all		Extremely important							
1	2	3	4	5	6	7	8	9	10

Backup solar battery storage and charging stations

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

Support services (e.g., childcare services, medical services, mental health counseling)

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

Spare clothing and toiletries

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

Food distribution and potable water

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

Other (Please specify here \_\_\_\_\_ )

Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

10. In the event of a disaster or emergency, where would you primarily go to receive help and support? Please check all that apply.

- Neighbors, family and friends, coworkers
- State or local government (e.g., Hawai'i Emergency Management Agency, City Department of Emergency Management, Neighborhood Board)
- Community-based or Nonprofit run facilities (e.g., Mo'ili'ili Community Center, Red Cross, KEY Project, Wai'anae Coast Comprehensive Health Center)
- Recreational facilities or parks

- Places of worship
- Emergency shelters
- Other (Please specify here \_\_\_\_\_ )
- Don't know

11. Overall, do you support the development of a Community Resilience Hub(s) in your community?

- Yes
- No
- Maybe

12. Where should a Community Resilience Hub be located in your community? Please rank the following locations from 1 to 10, with 1 being not important at all and 10 being extremely important.

The site is located at or near a medical facility (e.g., hospitals, clinics)  
 Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

The site is located at or near a designated emergency shelter or homeless shelter  
 (e.g., public schools, Institute for Human Services, Homeless Outreach and Navigation for Unsheltered Persons)  
 Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

The site is located at or near a government building (e.g. libraries, State and City buildings)  
 Not Important at all Extremely important

---

1      2      3      4      5      6      7      8      9      10

The site is located at or near an emergency response center (e.g., police or fire stations)  
 Not Important at all Extremely important

---



1      2      3      4      5      6      7      8      9      10

The site is located at or near a community facility (e.g. community centers, churches, public parks)

Not Important at all

Extremely important

---

1      2      3      4      5      6      7      8      9      10

The site is located at or near a food production and distribution center (e.g., food banks or pantries, farmers markets, local farm programs)

Not Important at all

Extremely important

---

1      2      3      4      5      6      7      8      9      10

13. What should be prioritized in a Community Resilience Hub’s overall objectives and accessibility? In each row, please CIRCLE the option which you think is more important to have. For example, is accessibility to pedestrians and cyclists more, less, or equally important than having available space for vehicle parking and drive-through access?

	Extrem ely More Importa nt	Very More Importa nt	Moderat ely More Importa nt	Slightly More Importa nt	Equally Import ant	Slightl y More Import ant	Moderate ly More Importan t	Very More Importa nt	Extreme ly More Importa nt	
Trusted and accepted by residents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Well known by people new to the area, visitors, or non-residents
Accessible by people walking, riding the bus, riding bicycles, or other non-motorized or personal vehicle travel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Has available space for vehicle parking and drive-through access
Maintaining consistent operations and functions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Flexibility in changing operations as new needs and opportunities arise
Primarily serves populations in special need (e.g., low-income households, people experiencing houselessness, people of color, the elderly, the chronically ill and disabled, and non-English speakers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Primarily serves the public, area residents, and community as a whole.

14. What are potential sites or organizations in your community that could serve as a Community Resilience Hub? Please write down some examples below and explain why.

#### Demographic Information

15. What is your age?

- Younger than 18 years old
- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65 years old and over
- I prefer not to say

16. What is your gender?

- Male
- Female
- Non-binary
- I prefer to self-describe (please specify)
- I prefer not to say

17. What is your ethnicity? Please select your primary and one secondary ethnic group if applicable.

- Asian
- Native Hawaiian
- Pacific Islander
- White
- Black or African American
- Hispanic
- Puerto Rican
- American Indian
- Alaskan Native
- Middle Eastern
- Other (please specify)
- I prefer not to say

18. How many people reside in your household?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8+
- I prefer not to say

19. What is your household's estimated total annual income?

- \$30,000 or lower
- \$30,001 to \$50,000
- \$50,001 to \$70,000
- \$70,001 to \$90,000
- \$90,001 to \$110,000
- \$110,001 to \$130,000
- \$130,001 or higher
- I prefer not to say

20. Do you have additional questions or comments about the establishment of a Community Resilience Hub in your area? Or can you think of any problems that might arise in siting a Hub in your community? If so, please share them in the space below.

21. Would you like to be added to our e-mail list and be informed about future engagement opportunities for the Community Resilience Hub project? If so, please submit our google form here: <http://go.hawaii.edu/Ngx>. You may also email your interest or other questions at [cerene15@hawaii.edu](mailto:cerene15@hawaii.edu).

# Appendix C–Consent Form

## CONSENT FORM

The University of Hawai‘i at Mānoa Department of Urban and Regional Planning is collaborating with Kapi‘olani Community College’s Center for Resilient Neighborhoods to develop a Resilience Hub Action Plan for the City’s Office of Climate Change, Sustainability, and Resiliency.

What am I being asked to do?

If you participate, you will be asked to complete an anonymous survey about the development of Community Resilience Hubs on the island of O‘ahu.

Taking part in this study is your choice.

Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Why is this study being done?

We aim to understand your community’s needs, willingness to support, and potential opportunities to develop a network of Community Resilience Hubs across O‘ahu. The purpose of this survey is to gather information about the needs for Community Resilience Hubs, the desirable functions during normal times and emergency situations, potential partner organizations to support the Hub, and the most preferred locations.

What will happen if I decide to take part in this study?

You will be asked to fill out a survey consisting of multiple-choice questions, rating questions, and open-ended questions. The survey takes roughly 10 minutes to complete. All of the questions are voluntary to answer.

Some questions that will be asked include:

- a) Overall, do you support the implementation of Community Resilience Hub (s) in your community?
- b) What are potential sites in your community that could serve as a Community Resilience Hub?
- c) What functions do you think a Community Resilience Hub should provide on a typical day in your community?

What are the risks and benefits of taking part in this study?

There is little risk to you for participating in this research project. You may become stressed or uncomfortable answering any of the survey questions. If you do become stressed or uncomfortable, you can skip the question or take a break. You can also stop taking the survey or you can withdraw from the project altogether. There will be no direct benefit to you for participating in this survey.

**Confidentiality and Privacy:**

We will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses. Other agencies that have legal permission have the right to review research records. The University of Hawai'i Human Studies Program has the right to review research records for this study.

**Future Research Studies:**

Identifiers will be removed from your identifiable private information and after the removal of identifiers, the data may be used or distributed to another investigator for future research studies and we will not seek further approval from you for these future studies.

**Questions:**

If you have any questions about this study, please email Cuong Tran at [cuongt@hawaii.edu](mailto:cuongt@hawaii.edu), or Kinzang Dorji at [kdorji@hawaii.edu](mailto:kdorji@hawaii.edu). You may also contact the Principal Investigator Suwan Shen at [suwans@hawaii.edu](mailto:suwans@hawaii.edu). You may contact the UH Human Studies Program at 808-956-5007 or [uhirb@hawaii.edu](mailto:uhirb@hawaii.edu) to discuss problems, concerns and questions, obtain information, or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit <http://go.hawaii.edu/jRd> for more information on your rights as a research participant.

**Agreement to Participate:**

Your participation is completely voluntary, and you can withdraw at any time. To take this survey, you must be:

- a) At least 18 years old
- b) Resident of O'ahu

Starting the survey implies your consent to participate in this study. Please print or save a copy of this page for your reference.

Mahalo!

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